8

"YES, IT IS TIME FOR CLINICIANS TO ROUTINELY MONITOR TREATMENT OUTCOME"

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> However beautiful the strategy, you should occasionally look at the results.
>
> —Sir Winston Churchill

By the early 1970s, outcome research had established that various forms of psychotherapy had an overall positive effect on client outcomes. The same evidence showed that a small and consistent percentage of people deteriorated while in care (Bergin, 1971). Reported rates varied between 5% and 10%. The deterioration was mostly connected to client characteristics, but specific therapist behaviors were also implicated (e.g., forms of rejection; Lambert, Bergin, & Collins, 1977). It is unfortunate that the findings were almost entirely ignored by the field. At the time, research efforts were principally directed to studying brand name treatments and demonstrating the superiority of then-favored therapies in comparative outcome studies (Hubble, Duncan, & Miller, 1999; Lambert, Bergin & Garfield, 2004; Wampold, 2001).

Interest in the phenomenon of deterioration grew in the late 1980s with the emergence of cost containment efforts. Managed care entities, for example, scrambling to control or even cut costs had to show that reducing services did not diminish the effectiveness of treatments (see chap. 9, this volume). Assessing outcome was seen as a way of examining whether more could be accomplished with less, or at least proving that brief, efficient services could be as effective as intensive, long-term care. Managed care companies were slow to link the idea of preventing negative outcomes with outcome assessment and

instead relied largely on implementing best practices of care. By the end of the decade, these companies were at least considering the value of using outcome assessment data to reduce negative effects.

Although it was seldom used systematically to enhance treatment, by the 1990s outcome measurement was being touted as an important aspect of clinical care (Stricker, Troy, & Shueman, 2000). In the same period, scientific and technological advances were enhancing methods for identifying and reducing negative client outcomes. One particularly important innovation was the development of statistical techniques that allowed researchers to examine change in individuals over time (Finch, Lambert, & Schaalje, 2001; Lutz et al., 2006). Massive amounts of data collected over many sessions across thousands of clients could be analyzed and used to model client recovery, a task that was impossible before the development of the new statistical procedures. Such methods, in turn, could be used to chart the course of change for the deteriorating, recovering, and average client. Eventually, a person's progress could be compared with that of similar clients, and probabilistic statements could be made about the likelihood of success and failure. A medical analogy illustrating this methodology is the routine use of growth charts for plotting infant head circumference by age and by that means identifying deviations from normal or average growth.

Surveys show that practitioners question the role of information technology in improving client care (with only 10% classified as "eager-adopters"; Meredith, Bair, & Ford, 2000). Even so, with the widespread availability and power of computers, it is now possible for providers to obtain outcome data about success with individual clients in real time. For two reasons, such practice-based evidence (Barkham et al., 2001; Duncan, Miller, & Sparks, 2004) is especially important. First, failure to improve and deterioration rates remain high in routine care (Hansen, Lambert, & Forman, 2002). Second, the available evidence indicates that therapists, despite their confidence in their clinical judgment, are not alert to treatment failure (e.g., Breslin, Sobell, Buchan, & Cunningham, 1997; Yalom & Lieberman, 1971).

Regarding the last point, consider findings from a study by Hannan et al. (2005) comparing therapist predictions of client deterioration with actuarial methods. Although therapists were aware of the study's purpose, familiar with the dependent measure, and informed that the base rate was likely to be 8%, they accurately predicted deterioration in only 1 out of 550 cases. In other words, therapists in the study did not identify 39 out of the 40 clients who deteriorated. In contrast, the actuarial method used by the computer correctly predicted 36 of the 40.

These and similar findings make clear that without timely feedback about client progress, practitioners grossly underestimate negative outcomes. Accordingly, they are less likely to make the adjustments necessary to fore-

stall negative outcomes or, for that matter, improve positive outcomes. Owing to the extant research documenting the superiority of actuarial over clinical methods in making such predictions (Garb, 2005), there is little doubt that the greatest predictive success comes through real time, clinic-based application of computer-assisted actuarial methods. Indeed, in the future, such psychological lab test or vital sign data will be as important in behavioral health as in medicine.

In this chapter, I present additional evidence regarding the advantages of tracking progress, identifying at-risk clients, and providing real-time feedback. I then review outcome management systems currently used in routine care and discuss important, specific procedural aspects of monitoring and feedback. Here, I propose that the next step to advance the "heart and soul of change" in psychotherapy will come about through the formal monitoring of change and a willingness to enter frank and open discussions with clients about their progress. Additionally, I present an overview of data-based outcomes management, and I hope that readers will not only understand the context in which this work evolved but will also be motivated to avail themselves of recent research, studies that convincingly demonstrate the value of outcome management for promoting service delivery and client improvement.

OUTCOMES MANAGEMENT

Over the past 10 years, much effort and attention have been directed toward identifying treatments that work in specific contexts and with different populations (e.g., disorders; Chambless et al., 1996, 1998). Such initiatives coincided with and were a response to demands coming from third-party payers (e.g., insurance agencies, government funding bodies) to improve accountability in health care service delivery. In both commercial and single payer systems, across medicine and other professions, those in charge of accounts, including those receiving services, wanted to know what they were getting for their investment (Bartlett & Cohen, 1993; G. S. Brown, Burlingame, Lambert, Jones, & Vaccaro, 2001).

Various groups—divisions of the American Psychological Association (APA), the National Institute of Mental Health, and the Substance Abuse and Mental Health Services Administration (SAMHSA) of the Department of Health and Human Services—have worked to identify and implement scientifically based practices (c.f., National Institutes of Health, 2002). As many practitioners and researchers feared, the creation of lists of empirically supported psychotherapies yielded several untoward consequences, chief among them restrictions on both the type and amount of care offered to clients. In fact, several states enacted legislation specifically aimed at limiting treatment

options (e.g., Oregon, Washington, Arizona, Connecticut; for additional discussion, see chapter 6, this volume). Efforts to improve accountability, via lists and legislation, arguably are well intentioned. Nevertheless, the resulting limitations on clinical practice miss the proverbial point. No one needs an empirically supported psychotherapy that does not work for them (S. Miller, personal communication, May 2007).

In 2005, APA created a Presidential Task Force on Evidence-Based Practice. This body was charged with the responsibility of developing a more nuanced and scientifically valid definition of *evidence-based psychological practice* (EBPP; APA, 2006, p. 273). In a major move away from the position taken by APA Division 12 (Society of Clinical Psychology) nearly a decade earlier (Task Force on the Identification and Dissemination of Psychological Procedures; Chambless et al., 1996), the Task Force redefined EBPP as "the integration of the best available research with clinical expertise in the context of patient characteristics, culture, and preferences" (APA, 2006, p. 273). Regarding the phrase *clinical expertise*, moreover, the Task Force commented that

> clinical expertise also entails the monitoring of patient progress (and of changes in the patient's circumstances—e.g., job loss, major illness) that may suggest the need to adjust the treatment (Lambert, Bergin, & Garfield, 2004). If progress is not proceeding adequately, the psychologist alters or addresses problematic aspects of the treatment (e.g., problems in the therapeutic relationship or in the implementation of the goals of the treatment) as appropriate. (APA, 2006, p. 276–277)

Because the most recent APA Task Force has placed monitoring and altering treatment under the category of clinical expertise, it is reasonable to construe these activities as an EBPP. Additionally, as it turns out, monitoring and altering therapy are critical components of outcomes management. The term *outcomes management* encompasses two well-defined operations. It designates activities that use the client's actual response to treatment, the outcome, to improve the treatment response of individual clients. It also refers to administrators' collective use of summed data across clients to make decisions for the benefit of future clients. To enhance individual outcome, therapists are typically provided feedback about a client's progress in real time. In this management practice, the rapid delivery of progress information to therapists is essential. In turn, clinicians are counted on to use that data to enhance problem solving, with the client's participation, over the entire course of treatment.

The second operation of outcomes management practice allows administrators to judge the relative merits of treatment approaches through their examination of outcomes across many, often thousands, of clients. This procedure sharply contrasts with the widespread assumption that applying so-called best practices results in the best outcomes. Of course, both operations—

managing outcome for a particular client and for a large body of clients—are not mutually exclusive. Both can be achieved if client treatment response is routinely tracked.

In 2003, Lambert, Whipple, Hawkins, Vermeersch, Nielsen, and Smart published an article titled, "Is It Time for Clinicians to Routinely Track Patient Outcome?" It reported a meta-analysis of three studies that evaluated the consequences of giving progress information or feedback to therapists. Since that review, additional studies have been completed, providing strong empirical support for such methods. Given these findings, it is now possible, without the equivocation characteristic of most research reports, to answer affirmatively: "Yes, it *is* time for clinicians to routinely track client outcome."

In what follows, the evidence from clinical trials supporting the systematic collection and use of real-time outcome data is presented. The studies discussed rely on the use of a single set of measures (OQ Measures). At the end of the chapter, I highlight and review a variety of other measures and data collection systems implemented in clinical service delivery settings.

Research on Ongoing Treatment Monitoring

Five large randomized controlled studies have been conducted evaluating the impact of using feedback on assessing and modifying treatment response (Harmon et al., 2007; Hawkins, Lambert, Vermeersch, Slade, & Tuttle, 2004; Lambert et al., 2001, 2002; Whipple et al., 2003). The studies share several features that in combination provide a strong empirical case for tracking client progress. The most important of these are the following: (a) random assignment of participants, (b) the use of the same therapist across treatment conditions (as a control for therapist effects), (c) a variety of treatment approaches or orientations, and (d) a high percentage of licensed clinicians (50%–100%) taking part in each study. Characteristics of the five studies are presented in Table 8.1. Four of the samples were equivalent (coming from the same clinic); participants in the 5th sample were older, more distressed, and treated in a hospital outpatient clinic.

Each study required approximately 1 year of data collection and included session-by-session measurement of outcome for more than 4,000 clients. The primary dependent variable in all studies was the Outcome Questionnaire, OQ-45 (described later). Further, in each, individual client response to treatment was compared with session-by-session normative data (i.e., *expected treatment response;* ETR) to identify clients not responding well to treatment. Poor responders were denoted as *signal-alarm* cases or as "Not-On-Track."

Progress data were supplied to therapists via a graph, along with color-coded warning messages when improvement was not occurring or not of the

TABLE 8.1
Summary of Design Characteristics of Controlled Outcome Studies Aimed at Reducing Deterioration and Enhancing Positive Outcome

Study	Clients (*n*)	Therapists (*n*)	TAU	Therapist feedback	Therapist and client feedback	Clinical support tools
Lambert et al. (2001)	609	31	X	X		
Lambert et al. (2002)	1,020	49	X	X		
Whipple et al. (2003)	981	48	X	X		X
Hawkins et al. (2004)	201	5	X	X	X	
Harmon et al. (2007)	1,374	47		X	X	X

Note. TAU = treatment as usual (i.e., clients who were not on track and whose therapist was not given feedback). Data from Harmon et al. (2007), Hawkins et al. (2004), Lambert et al. (2001, 2002), and Whipple et al. (2003).

expected magnitude. Two studies assessed the impact of providing both therapists and clients with OQ-45 progress information. Two explored the impact of providing therapists with additional feedback regarding the client's assessment of the therapeutic relationship, motivation, and degree of social support, including a problem-solving decision tree with suggested interventions, a device called Clinical Support Tool (CST; Lambert, Whipple, et al., 2004). Assessments of the relationship, motivation, and social support (described more fully later) were given with the graph when it was observed that the client was not progressing as well as expected.

In current clinical applications, step-wise problem-solving procedures are administered, scored, and applied using an end user software program (OQ-Analyst; OQ Measures, 2004) running on a handheld computer. The use of such devices connected wirelessly to the clinician's desktop computer makes it possible to assess progress by the time a client walks into the therapist's office. Instantly, the therapist can determine whether the client is deviating significantly from the ETR. In brief, this commercially available software uses one of two different types of predictive algorithms: (a) statistical modeling of ETR on the basis of a nationwide sample of more than 11,000 cases and (b) a rational model based on clinician consensus ratings of satisfactory client progress.

Figure 8.1 presents a picture of the output from the OQ-Analyst software. This specific screen shot illustrates the progress of a fictional client, "Brad News," as measured over nine sessions. After a single visit, the program predicted that Brad was at significant risk of a negative outcome (R = red signal). At any given session, the therapist can look below the graph and read the message provided. Messages vary in urgency depending on the size of the difference among the current amount of progress, the ETR (indicated by the dark sloping line), and the amount of therapy.

What then are the consequences of providing feedback? The results of the five studies are clear: Providing therapists with feedback about client progress improves outcome for clients predicted to be at risk of deterioration. Providing therapists with additional feedback—including the client's assessment of the therapeutic alliance, readiness for change, and strength of existing extratherapeutic supports—increases the effect, doubling the number of clients who experience a clinically meaningful outcome.

In the studies, clients were divided into four groups: (a) treatment as usual (TAU; i.e., no feedback), (b) progress feedback to therapist, (c) progress feedback to therapist and client, and (d) progress feedback plus clinical support tools. Of particular note is the percentage of clients who deteriorated or ended treatment with reliable negative change. The data show that providing feedback regarding progress resulted in a decrease in the percentage of clients not on track who ended treatment with reliable negative change (from 20% to 13% or 15%, or an overall decrease of 25%–35%). Deterioration rates were further reduced when clinical support tools were added to progress feedback, with the percentage of deterioration falling to 8% (or an overall decrease of 60%).

When clients are not on track but meet criteria for reliable improvement and clinically significant change, additional benefits of feedback are realized. Percentages increased from 22% for TAU to 33%, when feedback regarding progress was provided to therapists, to 39% when feedback was shared with both clients and therapists, and to 45% when feedback was furnished in conjunction with the clinical support tools. These increasing rates of positive improvement, depending on the extent of decision-making information provided to therapists and clients, demonstrate that feedback prevents deterioration. They also show that feedback enhances positive outcomes in clinically meaningful ways. In short, the consequences of using feedback are not mere statistical changes, but real.

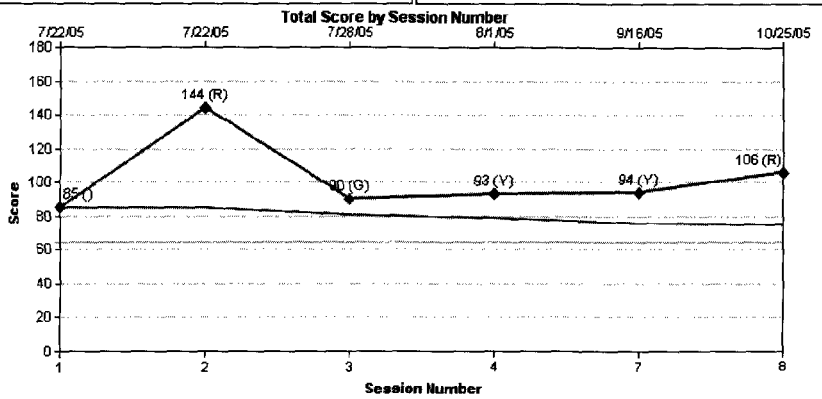
Beyond influencing the final treatment outcome, results of the five studies indicate that session utilization is affected by the provision of feedback. In four of the five studies, significant differences in treatment length were observed between experimental and control clients (Harmon et al., 2007; Lambert et al., 2001; Lambert et al., 2002; Whipple et al., 2003). Specifically, clients in the not-on-track feedback conditions received significantly more

Name:	news, brad **ID:**	**Alert Status:**	**Red**
Session Date:	10/25/2005 **Session:** 8	**Most Recent Score:**	106
Clinician:	lambert, m **Clinic:** Clinic A	**Initial Score:**	85
Diagnosis:	Unknown Diagnosis	**Change From Initial:**	Reliably Worse
Algorithm:	Empirical	**Current Distress Level:**	High

Most Recent Critical Item Status:

8. **Suicide** - I have thoughts of ending my life.	**Frequently**
11. **Substance Abuse** - After heavy drinking, I need a drink the next morning to get going.	**Frequently**
26. **Substance Abuse** - I feel annoyed by people who criticize my drinking.	**Frequently**
32. **Substance Abuse** - I have trouble at work/school because of drinking or drug use.	**Sometimes**
44. **Work Violence** - I feel angry enough at work/school to do something I might regret.	**Sometimes**

Subscales	Current	Outpat. Norm	Comm. Norm
Symptom Distress:	61	49	25
Interpersonal Relations:	26	20	10
Social Role:	19	14	10
Total:	**106**	**83**	**45**



Graph Label Legend:

(R) = **Red**: High chance of negative outcome (Y) = Yellow: Some chance of negative outcome

(G) = **Green**: Making expected progress (W) = **White**: Functioning in normal range

Feedback Message:

The patient is deviating from the expected response to treatment. They are not on track to realize substantial benefit from treatment. Chances are they may drop out of treatment prematurely or have a negative treatment outcome. Steps should be taken to carefully review this case and identify reasons for poor progress. It is recommended that you be alert to the possible need to improve the therapeutic alliance, reconsider the client's readiness for change and the need to renegotiate the therapeutic contract, intervene to strengthen social supports, or possibly alter your treatment plan by intensifying treatment, shifting intervention strategies, or decide upon a new course of action, such as referral for medication. Continuous monitoring of future progress is highly recommended.

Figure 8.1. Output from Outcome Questionnaire Analyst software with the fictional client Brad News. Brad's scores are plotted with his score at the session of interest and include small single letters to indicate alarm status: (G) = Green, (Y) = Yellow, (R) = Red. The expected treatment response is indicated by the dark sloping line. The gray horizontal line at a score of 63 is the line demarcating normal functioning. Outpat. Norm = average score of outpatients; Comm. Norm = average score of nonpatients drawn from the community.

sessions than their TAU counterparts. Such findings indicate that increases in treatment length, along with retention of clients not progressing, may be an important mechanism of action through which feedback improves outcome.

In two of the five studies (Lambert et al., 2001; Whipple et al., 2003), clients identified as on track for a positive outcome and in the feedback condition received fewer sessions than those in the on-track group. Here again, feedback helped ensure an appropriate dose of services, with those most likely to benefit (about 25%) staying longer, and clients more likely to recover (75%) ending earlier. Taken together, these results have obvious implications for planning and maximizing the efficiency of service delivery.

Beyond Progress Feedback: The Use of Clinical Support Tools

The data from the five randomized controlled clinical trials discussed previously make clear that providing feedback to therapists (and in one of two studies, directly to clients) is highly beneficial. As compelling as these results are, however, the same data show that a significant portion of clients do not derive benefit from treatment even when feedback is provided. To further bolster positive outcomes, Whipple et al. (2003) added a condition in which clinicians were provided with an organized problem-solving strategy for clients identified as not on track. After deciding on a hierarchy of variables that might account for the deterioration, an attempt was made to capture problematic aspects of the psychotherapy and other potential problems that could be directly influenced by therapist actions (Barber, 2007). These variables, in turn, were used to construct the CST, a structured method for identifying factors that could prompt effective actions by the therapist.

Because the empirical literature has shown that the quality of therapeutic alliance is consistently related to outcome, and other studies have indicated that client ratings of the alliance are more strongly correlated with outcome than therapist ratings (Horvath & Luborsky, 1993), the CST included a formal assessment of the clients' perceptions of the therapeutic relationship. The second variable included in the CST was motivation (e.g., Garfield, 1994). A review of the research suggested that motivation and dropout were significantly related. Instances were legion in which therapists moved ahead with treatment without securing the clients full commitment or without making sufficient efforts to foster more autonomous motivation (Zuroff et al., 2007). It was especially clear that substance abuse treatment had made inroads in boosting positive outcomes by measuring motivation and using motivational interviewing to increase positive participation (Miller & Rollnick, 2002).

Though often neglected because of therapists' near exclusive focus on in-session events, the literature strongly suggests that client-perceived social support moderates psychotherapy outcome (Cohen & Wills, 1985; Zimet,

Dahlem, Zimet, & Farley, 1988). Thus, social support was the third factor included in the CST. Measures of this important variable typically emphasize the degree to which clients have family and friends available for rendering assistance. Not only could perceived social support be measured, but many strategies were available for increasing these supports, including intervention in the client's social network, or use of group, family, couple, and self-help groups as adjuncts or replacements for individual treatment.

The fourth and final variable in the CST was errors in diagnostic and treatment planning. The basic point here is that clients who become signal-alarm cases are deteriorating in a preferred treatment that is not having its intended benefit. Some of these clients may merit a referral for medication evaluation or the addition of group work or self-help.

The CST package consisted of the decision tree, three measures with cutoff scores (indicating if the variable of interest was a problem), and a list of suggested interventions for each variable. For example, if the alliance was identified as problematic for a client, the therapist was directed to a list of interventions to consider for problem solving. Among the possible interventions, Safran and Muran's (2000) work on repairing ruptures in the therapeutic alliance was highlighted, quickly drawing the therapist's attention to these evidence-based interventions. Table 8.2, which summarizes the data from the original (Whipple et al., 2003) and replication study (Harmon et al., 2007), reveals a strong effect for this add-on intervention. In fact, not-on-track clients, randomly assigned to this intervention, left treatment (as a group) very close to the cutoff for normal functioning. At present, it is not possible to specify which, if any, of the CST feedback was most useful in reversing a negative course of change for not-on-track clients. The value of any information varies

TABLE 8.2
Percentage of Not-On-Track (Signal-Alarm) Cases Meeting Criteria for Clinically Significant Change at Termination Summed Across Five Studies

Outcome classification	TAU *n* (%)	T-Fb *n* (%)	T/C-Fb *n* (%)	T-Fb + CST *n* (%)
Deteriorated[a]	64 (20)	90 (15)	19 (13)	12 (8)
No change	184 (58)	316 (53)	71 (48)	73 (47)
Reliable or clinically significant change[b]	70 (22)	196 (33)	57 (39)	169 (45)

Note. TAU = treatment as usual (i.e., clients who were not on track and whose therapist was not given feedback); T-Fb = clients who were not on track and whose therapist received feedback; T/C-Fb = therapist feedback plus written direct feedback to clients; T-Fb + CST = clients who were not on track and whose therapist received feedback and used clinical support tools. Data from Whipple et al. (2003) and Harmon et al. (2007).
[a]Worsened by at least 14 points on the Outcome Questionnaire from pretreatment to posttreatment.
[b]Improved by at least 14 points on the Outcome Questionnaire or improved and passed the cutoff between dysfunctional and functional populations.

widely on a case-by-case basis, and actual problem solving remains in the hands of the clinician.

Few research groups have published clinical trials replicating and extending the findings of the preceding studies. An exception is an investigation conducted by Berking, Orth, and Lutz (2006). They examined progress feedback in a Swiss inpatient population. Though their work used different methods and measures, they found a solid gain for the experimental group. In this condition, therapists received progress feedback compared with the TAU control group over a 30-day hospital stay. This is an important finding because it extends our research on outpatients to individuals who received care in a hospital setting in which clients received many treatments (rather than once weekly psychotherapy), and the effects of feedback were still clinically significant.

Another exception is a recent study conducted in Norway by Anker, Duncan, and Sparks (2009). Designed with the shared features of our research described earlier, this investigation of 205 couples is the only randomized clinical trial to date that compared feedback with TAU with couples. The Outcome Rating Scale (ORS; Miller, Duncan, Brown, Sparks, & Claud, 2003), Session Rating Scale (SRS; an alliance measure; Duncan et al., 2003), and the algorithms derived from a large normative sample designed to reflect a typical community mental health outpatient population were used to provide the feedback and measure outcome. Feedback significantly improved outcome: In the TAU condition, 22.6% of both individuals of a couple realized reliable or clinically significant change compared with 50.5% of the feedback group. The predicted score adjusted for severity of an average client in the feedback group was 4.89 points (the Reliable Change Index on the ORS is 5), higher than for an average client in the TAU. One hopes, as in this example, that future replications will continue to extend our research to other populations and modalities while using what we have come to consider the most important elements of feedback: that it is timely, includes warning signals, and is directed toward individuals whose positive outcome is in doubt.

Given the results of the present studies, it is fair to argue that such methods become a part of routine practice. In the individual studies themselves, the effect sizes for the difference between feedback and treatment as usual ranged from 0.34 to 0.92. Such large effect sizes are unusual when one considers the most generous estimates of the effect size of the difference between empirically supported and comparison treatments is 0.20 or less (Lambert & Ogles, 2004; Wampold, 2001). It is curious that those advocating the widespread adoption of empirically supported therapies do so on the basis of much smaller treatment effects than those associated with feedback. Because of the large sample sizes of the individual studies, the current findings are compelling. Of course, one need not choose between giving feedback and using empirically supported treatments. They can work in concert.

The use of feedback to improve outcome is both powerful and simple. Training is straightforward, and the procedures are easily mastered. The basic requirements include a measure of client functioning that changes as an effect of an intervention, estimation of an ETR, and markers of meaningful deviations from that response. Structured problem-solving strategies to facilitate an understanding of what is going wrong and the ability to apply this knowledge before a client terminates psychotherapy are also helpful and easy to develop and master. A significant advantage is that the process can be used regardless of theoretical orientation.

Finally, as seen, formal feedback has the advantages of informing clinicians about successes and failures as well as providing benchmarks for groups of treated individuals. Now, clinicians and administrators can choose from a variety of available outcome management systems. One hopes that the days in which clinical work and decision making rely only on informal assessments will soon come to an end. In the following section, I briefly summarize several widely used methods.

OUTCOMES MANAGEMENT SYSTEMS

The first outcomes management system was developed by Howard and colleagues using an instrument known by the acronym COMPASS (Howard, Moras, Brill, Martinovitch, & Lutz, 1996). The COMPASS includes 68 items broken down into three scales: Current Well-Being, Current Symptoms, and Current Life Functioning. These scales are summed and the total score designated as the Mental Health Index. Instructions call for clients to rate items on a 5-point scale about their functioning in the preceding month. Supporting scales include a measure of the therapeutic bond, which presents problems and their significance to the client, including clinician ratings on the *Diagnostic and Statistical Manual of Mental Disorders* Global Assessment of Functioning Scale and Life Functioning. Clients and therapists are expected to complete the measure monthly throughout the course of treatment.

Using a variety of statistical modeling techniques, this feedback system provides an ETR. It is modeled for each client on the basis of the degree of initial disturbance and several client variables such as chronicity of problems. Significant negative deviations from the ETR are used as one aspect of alerting therapists to potential treatment failure. In addition, the ETR model uses several indicators of poor outcome. For instance, it monitors a discrepancy between client reported (good) health and clinician reported (poor) health and the failure to improve reliably by the 12th session. Lueger et al. (2001) provided ample data on the ability of this system to identify treatment failures.

As with any outcomes monitoring system, the COMPASS system has distinct advantages as well as limitations. On the plus side, it provides for the collection of data from both clinician and client, with extensive pretreatment examination of client functioning and a sophisticated method of predicting poor outcomes. Disadvantages of this system include the amount of time required of therapists and clients to complete forms, the need to submit assessments to a third party for scoring and interpretation, infrequency of data collection, and the likelihood of termination before feedback delivery. The latter drawback is especially important because in many clinical settings, 50% of clients will have terminated after 4 weeks.

The second major system to be developed and applied to outcomes management uses OQ measures. These consist of several adult and youth outcome questionnaires. The central measure within the system is the Outcome Questionnaire-45 (OQ-45; Lambert, Morton, et al., 2004). It is a self-report measure with 45 items targeting symptoms (mainly anxiety and depression), emotional states, interpersonal relationships, and social role performance. It was designed to monitor client functioning each week during routine care. Normative comparisons have been used to provide markers for individual client outcome derived from Jacobson and Truax's (1991) formulas for reliable and clinically significant change. Thus, the instrument can inform clinicians about the degree of success a specific client is experiencing in relation to a criterion for normal functioning. The OQ-45 has the advantage of being especially sensitive to treatment effects. It includes a large number of items that have been shown to change over the course of time in clients who are being treated but remaining stable in clients who are equally disturbed but not being treated (Vermeersch, Lambert, & Burlingame, 2002; Vermeersch et al., 2004).

As already described, identifying signal cases, or cases at risk of a poor result, is crucial for enhancing positive outcomes. Further, from a health care management perspective with a focus on containing costs and providing quality assurance, identifying signal cases is essential for efficient resource allocation. As with the COMPASS system, extensive research has been performed to develop ETR curves for the OQ system. Currently, ample evidence exists indicating that the measures can be successfully used to predict treatment failure (e.g., Ellsworth, Lambert, & Johnson, 2006) and enhance client outcomes (Harmon et al., 2007; Hawkins et al., 2004; Lambert et al., 2001; Lambert et al., 2002; Whipple et al., 2003).

Next, in Germany, Kordy, Hannöver, and Richard (2001) designed a computer-assisted, feedback-driven psychotherapy quality management system. Used in inpatient psychotherapy settings across Europe, it is available in a variety of languages. Rather than developing their own assessment tools, these researchers created a software product—AKQUASI—that administers,

scores, and provides feedback on the basis of several standardized measures (e.g., Symptom Checklist-90, OQ-45). This flexible system was created to fulfill the World Health Organization's call for quality assurance in health care delivery. This appeal comprised four major goals: develop a monitoring system, detect failures and shortcomings in treatment, make the information available to all the parties who can act to improve the situation, and create a culture of learning and communication.

The AKQUASI product collects data on client characteristics, the helping alliance, and client satisfaction. Users receive a recommendation for using multiple measures of the same constructs and multiple viewpoints of clients' functioning to capture the complexity of change. The system is ideal for inpatient settings in which clients remain in treatment at least 30 days, and plenty of time is available for the assessments. It is less feasible in outpatient settings.

To improve quality of care, Kordy et al. (2001) placed special emphasis on detecting problems and providing feedback to therapists in case management meetings for 30-day inpatient stays. In this context, the researcher and clinicians discuss the findings together. Signal-alarm cases are selected if they are terminating therapy and in grave need of help or are suicidal, or if they show more negative than positive change across subscales of the measures.

At a second level of analysis, report cards are created for internal comparisons of grouped data over time, tied to external benchmarks. The main data of interest in these comparisons are the rate of detection of signal-alarm cases, with the expectation that they will decrease from benchmark data collected before the initiation of quality assurance initiatives. Limited validity data suggest that the majority (three fourths) of signal-alarm cases were accurately identified with the psychometric scales in comparison with use of other therapist- or client-provided information. The specificity (i.e., ability to identify clients who did not deteriorate) of the signal-alarm proved to be high, although it was not very sensitive (i.e., able to identify actual deteriorated cases).

The AKQUASI system has the advantage of offering multiple measures, in multiple languages, based on clinician as well as client ratings. As such, it is very ambitious in its assessment goals. In the end, it is mainly suitable for settings in which measurements can be repeated. In Europe, hospitalizations frequently last at least a month and extensive assessments at the onset of treatment are commonplace. As noted, extensive assessment is less feasible in outpatient care.

During a typical inpatient stay, retesting only takes place at the end of treatment or when a decision about the client is being made (e.g., the need for additional services). The general philosophy guiding assessment is that deterioration cannot be predicted in advance and that further treatment has a good chance of working, even if it is not altered, so long as the client remains in

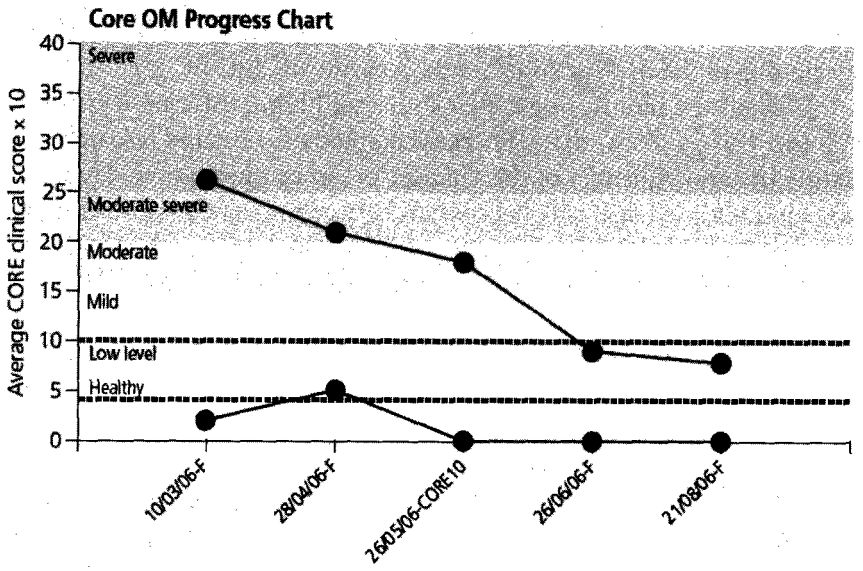
therapy. The decision rule for this system is uncomplicated: If the client is in the normal range of functioning, consider termination; if the client is functioning in the dysfunctional range, continue treatment.

Like all the monitoring systems reviewed here, this one is constantly evolving. Nevertheless, the delay between modification and research investigating the consequences of the changes presents a limitation. This system also requires a good deal of collaboration between researchers and clinicians. It creates a culture that blends science and clinical judgment, but it also takes considerable time and commitment on the part of both groups.

Barkham et al. (2001) created the Clinical Outcomes in Routine Evaluation (CORE) system. It is widely used in the United Kingdom to inform client care on the basis of information gathered from psychology services. The CORE consists of three independent tools. The CORE Outcome Measure (CORE-OM) is a 34-item client self-report questionnaire, administered before and after therapy (10- and 5-item versions are also commonly used for tracking). Ratings are rendered on a 5-point scale regarding how the person has been feeling over the past week. The CORE-OM provides a score indicating current global psychological distress. Pre- and posttreatment scores indicate how much change has occurred while a client has been in treatment. The second tool, the Therapy Assessment Form, is completed by practitioners to profile the client, presenting concerns and a pathway to treatment. Practitioners also complete the End of Therapy Form, which highlights the process during therapy, termination, and subjective impressions of outcome.

CORE-PC software and a CORE.net Web system are available to enhance data collection and benchmark feedback. The CORE now emphasizes both grouped data as well as individualized tracking reports on clients. Benchmark data are grouped and analyzed along specific categories. The CORE can assess whether cases are falling outside of service targets by monitoring time on waitlists, clinical deterioration, poor attendance, and early termination. Anytime the CORE-OM is readministered, the CORE-PC and CORE.net can show which cases have deteriorated, have remained unchanged, and have entered the ranks of normal functioning. Progress is monitored, and the information fed back to clinicians, if this is desired. Historically, the strength of this system resided principally in the data it provides to administrators and managers of service delivery systems. But now the CORE.net includes individual tracking features as depicted in Figure 8.2, which also includes a vignette description of the client portrayed on the graph.

Kraus and Horan (1997) developed the Treatment Outcome Package (TOP), which includes numerous evaluation tools covering child and adult functioning. Time of administration ranges from 2 to 25 min. TOP has primarily focused on administrative uses rather than feedback to therapists. Managers



Mr W was referred for therapy by his GP for depression and anxiety following a job loss with consequences for his self-esteem and self-image. Over five sessions of counselling there was a steady week-on-week improvement. At week four he crossed the (dotted blue) clinical cut-off line, indicating clinical and reliable improvement. The following week he told the therapist he would not need any more sessions. He later made contact to say that he had found a new job and was continuing to feel good.

This type of progress tracking curve is quite typical of simple single-issue cases that respond well to brief counselling in a primary care setting. They have become known as 'ski slope' trajectories because of the characteristic curve.

Figure 8.2. Output from the Clinical Outcomes Routine Evaluation Outcome Measure (CORE-OM) with the client Mr. W. The horizontal axis is the date the questionnaire was completed. "F" next to a session date indicates the five-item scale was used. "Core10" indicates the 10-item version was used on that date.

can examine progress throughout treatment and compare outcomes with appropriate benchmarks.

The functioning of adults and children is quantified across a variety of areas, and relevant measures include diagnostic aids, historical information, and written statements of treatment goals. The report for clinicians includes ratings on 23 high risk–related questions. Considerable emphasis is placed on the use of the report for treatment planning, the individualization of treatment goals, and the tracking of these goals. Client satisfaction, too, is measured and used as a quality assurance index.

As with the COMPASS system, TOP requires users to send off forms for scoring and reporting. This procedure limits rapid turnaround of feedback for clinicians and the frequency with which the response to treatment can be tracked. The adult symptom scale is long (around 85 items) and has consid-

erable redundancy within each area of disturbance (e.g., sleep, anxiety, mood). For these reasons, TOP does provide reliable information for estimating degree of disturbance. The length of TOP, on the other hand, does not make it ideal for tracking treatment response on a weekly or even biweekly basis, unless tracking is limited to specific subscales. For clients whose subscales are elevated, the authors do recommend using their tracking system each week. Overall, this practice has the advantage of targeting specific problems for specific clients, but it also carries the disadvantage of leaving untracked many items measuring symptoms. More, the practice possibly overestimates the positive outcomes of treatment. It is also hard to compare different treatments when different targets are being tracked.

In contrast to the preceding methods, Miller, Duncan, Sorrell, and Brown (2005) created a very brief assessment package—the Partners for Change Outcome Management System (PCOMS). The PCOMS uses two 4-item (visual analogue) scales, one focusing on outcome (ORS) and the other aimed at assessing the therapeutic alliance (SRS). The measures are also available for use with children and adolescents (Duncan et al., 2006). Although brief, the ORS correlates modestly with other outcome measures, such as the OQ-45 (.58; Miller & Duncan, 2004). It has the advantage of directly involving both clinician and client in the process of measuring and discussing progress and the working relationship. At each session, the therapist provides the measures to the client. Because scoring takes place in the session, feedback is immediate. A commercially available Web-based system (see https://MyOutcomes.com) of administration, data collection, normative comparison, empirically based feedback messages as well as aggregate statistics addressing a variety of effectiveness and efficiency variables is available to enhance the benefits of paper-and-pencil use of PCOMS.

The PCOMS, using intake scores and progress at each session, provides information on anticipated treatment response. It also identifies clients whose improvement is falling short of expectations (Miller & Duncan, 2004). The authors have yet to examine accuracy of prediction of deterioration. Instead, they rely on sharing alliance and progress ratings with clients over the course of treatment. The goal is to ensure resolution of problems before they derail progress. The highly practical approach of PCOMS, with its general focus and brevity, makes it an attractive procedure for clinicians in private practice and larger systems of care. The authors have demonstrated that individualized markers of clinically significant change can be calculated and applied in routine practice.

Figure 8.3 provides a hypothetical example of feedback to both clinician and client for a client falling under benchmark predictions. ORS scores are graphically portrayed compared with the 50th percentile trajectory based on the client's intake score. Feedback messages interpret the scores, taking the

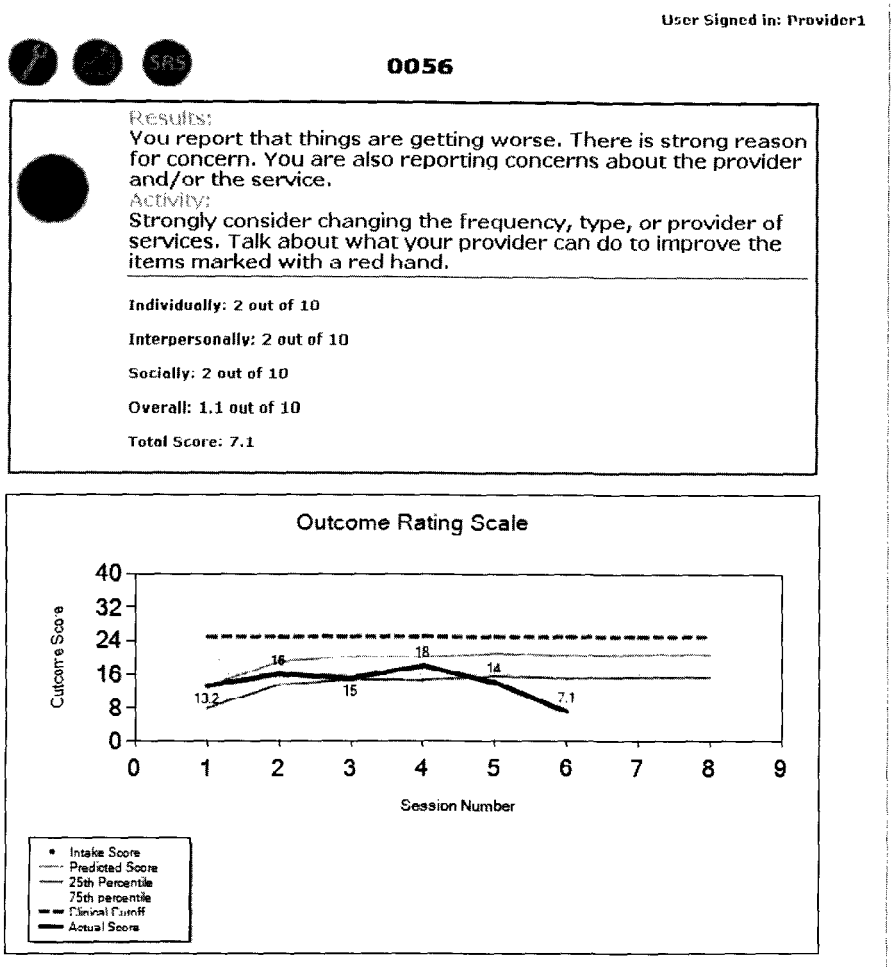


Figure 8.3. Output of the Partners for Change Outcome Management System.

alliance measure (SRS) into account, and encourage client and provider discussion about the next possible steps to avert a negative outcome.

In addition to Anker et al.'s (2009) feedback study described previously, the authors have examined tracking and feedback effects compared with preimplementation baseline figures (Miller, Duncan, Brown, Sorrell, & Chalk, 2006). In one applied setting, for instance, the authors reported that before implementation of feedback, 34% had reliably improved, whereas 19% had deteriorated. During the feedback phase, 47% improved, and 8% deteriorated. Because of the quasi-experimental nature of this study and changes in the treatment delivery system that accompanied the use of feedback, just how much feedback contributed to positive outcomes is a bit ambiguous. Nevertheless, these encouraging results support the notion that session-by-session

feedback on progress and the therapeutic alliance can be used to promote client outcomes. In a soon-to-be-published study, Reese, Norsworthy, and Rowlands (in press) reported on the effects of PCOMS-based feedback compared with treatment as usual in a university-based training clinic and a university counseling center. Their findings were highly consistent with those reported by Lambert and colleagues. Despite small sample sizes, the differences between treatment-as-usual and feedback-assisted psychotherapy reached statistical significance, had medium effect sizes (Study 1, $d = 0.54$, and Study 2, $d = 0.49$, using Cohen's d), and reached reliable change on the ORS more frequently when compared with the no-feedback condition (80.0% vs. 54.2%, in Study 1; 66.67% vs. 41.40% in Study 2.). These researchers noted that feedback was helpful across clients, not just with off-track cases, and that feedback did not lengthen treatment in order to obtain its effects. As in Lambert and colleagues' research, trainees' clients improved as much as clients seen by professionals, but the clients of experienced clinicians accomplished the changes in a briefer time period. Other results from research conducted with PCOMS are reviewed in chapters 10 and 12 of this volume.

Each of the preceding systems has advantages and disadvantages. Each has achieved various levels of acceptance. All have accumulated treatment outcome data on thousands of clients, information that is being used to manage care based on treatment response. However, there is limited information about their comparative value on several major dimensions, including the accuracy of predicting treatment failure; the precision of cutoff scores for classifying reliable change and normal functioning, and most important, the degree to which different systems improve outcome. Although research on the consequence of providing OQ-45 feedback is considerable, it is possible that other methods may prove to be equally effective or superior. Comparative research is urgently needed but is a difficult challenge because of requirements for multiple assessments over the course of therapy.

All the systems have the advantage of facilitating outcome-informed care. The PCOMS and OQ Measures systems do this most directly by providing simple systems that involve client and therapist in weekly discussions on progress.

Some Practical Issues for Implementation

The most significant problem encountered with outcomes management systems is clinician resistance. As noted earlier, only about 10% of clinicians are eager to adopt computer-based information technology. In addition, clinicians are very confident that they are more effective than the majority of their peers. They also believe they help most, if not all, of their clients. As a result, many see no need for the assistance provided by lab tests and formal

monitoring. Finally, external evaluations of client outcomes are often regarded as a threat to clinicians' personal assessment of their effectiveness (Walfish, McAllister, O'Donnell, & Lambert, 2009).

When practitioners have chosen to monitor client change formally, implementation is much easier. Unfortunately, in most instances, outcome assessments have been imposed top down by external sources (e.g., management, insurance companies). Such rollouts are a serious impediment to success because they are perceived by line practitioners as benefiting management, giving scant attention to the real work. In such situations, neither clinician nor client feels that the formal assessment of treatment response is serving his or her interests.

Miller, Duncan, and colleagues (Duncan et al., 2004; Duncan & Sparks, 2002; Miller & Duncan, 2004) have presented step-by-step instructions for creating a culture that nurtures and sustains constructive feedback across clients, therapists, administrators, and payers. Their experience indicates that the use of formal measures of progress and alliance increases dramatically when everyone involved knows that the primary beneficiary of monitoring treatment response is the client.

From a practical perspective, the logistics of maintaining a treatment monitoring system are easier to manage when assessment becomes routine and information technologies are in place for administering and scoring measures. To be used, measures must be brief. Each of the systems reviewed reduces the burden of implementation to a bare minimum or attempts to do so (e.g., CORE's five-item scale, TOP's single subscale, PCOMS's four-item measures). J. Brown, Dreis, and Nace (1999) have argued that any measure or combination of measures that takes more than 5 minutes to complete result in lower compliance rates.

If monitoring does not occur at virtually every session, any system is limited by the unknown effects of client dropout or premature termination. It is uncommon for therapists to know when treatment is going to end. Therefore, expecting they will be ready with an assessment to obtain posttreatment data is unrealistic.

A central question in outcome management systems is, "Who is responsible for data collection?" Related questions include "When are assessments to be administered?" and "Who keeps track of this?" Should therapists manage questionnaires, and should they do so before or after the session? If assessment is intermittent, how does the therapist know when to give an assessment to Client A but not to Client B? Is the clinician expected to store data along with the client case file, or is this handled on the management side? If management is responsible for data collection and storage, how are therapists informed of the findings?

Experience implementing outcomes management in multiple settings indicates that the most efficient system has been to make administration of

assessments routine. Clients complete a questionnaire before each appointment, thus affording the chance for immediate feedback before the session. Then the task of tracking who needs an assessment and who does not is eliminated. Assessments are simply administered by clinic receptionists or psychotherapists when clients check in for their appointments. An additional argument for frequent administration of assessments is that the algorithms used for identifying potential treatment failures provide better predictions when more data are collected.

As the reader can see, the choice of an outcomes management system has immediate practical considerations. These bear on the means of scoring assessments, managing the data, and receiving individual client feedback reports as well as the availability of monthly or quarterly summaries of outcome data for all or selected groups of clients. If all of these various tasks need to be managed by the therapist or an employee, a key element of monitoring, the provision of a signal-alarm to the practitioner, may be lost. Available evidence indicates that feedback helps only 25% to 30% of clients, those who are predicted to have a poor psychotherapy outcome. Little general benefit obtains for all clients except reductions in the number of sessions per client. The problem is that providers do not know whether and when a client will become a signal-alarm case. Therefore, tracking all clients is required. The development of various software programs for all the systems reviewed here enhances solutions to problems of implementation and speedy delivery of results to therapists. In the age of information technology, the future looks bright for using such advances for the benefit of clients.

The use of outcomes management systems is ushering in a significant change in how psychotherapy is conducted. This review underscores the value of monitoring treatment response, applying statistical algorithms for identifying problematic cases, providing timely feedback to therapists (and clients), and providing therapists with problem-solving strategies. It is becoming clear that such procedures are well substantiated, not just matters for debate or equivocation. When implemented, these procedures enhance client outcome and improve quality of care (Lambert, 2005).

Implications

Substance Abuse and Mental Health Services Administration's National Registry of Evidence-Based Programs and Practices evaluated the OQ-Analyst as an evidence-based practice on two major criteria. The first criterion was the quality of empirical evidence supporting its effectiveness. The second was the availability of material making it ready for dissemination and widespread use, that is, implementation. The National Registry rates all submitted evidence-based practices on these two dimensions using

a 5-point scale (0–4). The overall rating is a sum of separate ratings for implementation materials, training and support, and quality assurance. The OQ-Analyst was given a nearly perfect score of 3.9. Although all the available manuals and material that provided such a high rating cannot be presented here because of space limitations, they are available through the OQ Measures Web site (http://www.oqmeasures.com). The interventions are ready for implementation.

The following major points provide a good rationale for going forward with implementation:

- Yes, it is time to routinely track client outcome. Doing so consistently decreases deterioration rates and enhances positive outcomes for clients who go off track from a positive treatment response.
- Tracking client treatment response using standardized scales (mental health vital signs) is especially important given clinicians' tendency to be overly optimistic about the meaning of clients' lack of progress and their failure to judge when clients are headed toward a negative outcome.
- In addition to progress tracking, it appears that the use of decision support methods for these cases also substantially bolsters treatment effects. Clinical support tools that rely on a brief assessment, strategies for focusing clinicians' search for solutions, and provision of brief prompts to broaden therapist's interventions can be developed on the basis of common factor concepts such as the alliance, motivation, and social support difficulties, making them appealing regardless of therapist treatment orientation.
- Tracking client progress and alerting therapists to the potential of a negative outcome, along with assessing areas responsible for treatment failure, can be readily achieved with brief measures, computer-assisted technology, and little time expenditure on the part of clinicians. There is no excuse for failing to assist clients by using these methods. Certainly clients do not find being asked about their functioning inside and outside of psychotherapy to be a burden if the therapists discuss and use this information to make treatment more responsive to their needs.
- This new frontier for enhancing the effects of psychotherapy provides greater opportunities for clinicians to partner with clients in the collaborative efforts that are needed to maximize positive outcomes. One hopes that such methods find their way into mental health training programs and routine clinical care sooner rather than later.

QUESTIONS FROM THE EDITORS

1. *What steps need to be taken to ensure that the measurement of outcome and provision of feedback do not fall prey to the same shortcomings as early definitions of* evidence-based practice *that ended up limiting rather than enhancing practice?*

Using the OQ Analyst to quantify treatment response and inform ongoing treatment is an "evidence-based practice." It does not impinge on the autonomy of providers and does not assume that providers are automatons that can provide dozens of different empirically supported psychotherapies. It would be unfortunate, however, at this early point the development of this practice for any system to be used exclusively. OQ-Analyst and other systems are evolving over time and will not remain fixed entities. All can be improved. In addition, new systems will likely develop and may prove to be even more helpful to clients than existing systems. It would not serve the interests of clients to have an existing system frozen in time. We are just at the threshold of understanding how client outcomes and assessment-based problem-solving strategies can be used in real time to ensure the best possible outcome for clients.

2. *Do clinicians provided with feedback learn? In other words, do they improve in their ability to detect and treat clients at risk of dropout or a negative or null outcome? If not, why not?*

No. Clinicians do not improve in their ability to detect the important signs of a negative outcome and thereby detect who is at risk of a negative outcome. In a way, this should not come as a surprise or be disappointing. Past research contrasting clinical versus actuarial prediction has consistently shown actuarial methods to be superior. Psychotherapists are optimistic about the clients' eventual improvement and remain determined in the face of slow and even negative progress. This optimism is an advantage to clients but at the cost of missing information that is essential for predicting a negative outcome.

In Hannan et al.'s (2006) study of therapist prediction, it was found that therapists did recognize that a portion of their clients had worsened from their status at intake. If they had used this information as a sign of an impending negative outcome, they would have dramatically improved their predictive accuracy. In contrast, the statistical method relies heavily on the information that clients worsen and can also assess how much worsening at a specific session is a negative indicator.

One cannot expect physicians to predict blood pressure or white blood cell counts; instead, they measure these vital signs and rely on cut scores and patterns of scores. Similarly, it is not necessary for psychotherapists to get better at tasks that can easily be accomplished through simple assessment procedures and the proper use of information technology.

3. *What are the implications of research on feedback for training and credentialing of behavioral health care professionals?*

It is important that training programs become familiar with the advantages of feedback for clients and that they encourage and assist students in learning to use such methods. It is unfortunate that few training programs are on the cutting edge of such practices and continue to supervise students in their therapy cases without the advantages of formally tracking client progress and using the predictive power of statistical modeling techniques and related actuarial methods. If speed of adoption of practices (on the basis of research evidence) in medicine, psychology, and business is any indicator, one can expect to wait 10 to 15 years for the field to make these methods routine. In the meantime, I hope that professional licensing boards do not play a role in forcing clinicians to adopt tracking methodology. I think this is most properly done by professional associations and administrators of clinical services.

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