Progress Monitoring in Mental Health and Addiction Treatment: A Means of Improving Care

Jessica D. Goodman, James R. McKay, and Dominick DePhilippis
Philadelphia Veterans Affairs Medical Center, Philadelphia, Pennsylvania and University of Pennsylvania Perelman School of Medicine

Although monitoring of treatment response is standard practice for many medical conditions, practitioners in mental health treatments, and substance abuse treatment in particular, have been slow to adopt these practices. Progress monitoring (PM), consisting of measurement and feedback, has the potential to significantly improve treatment outcomes. This paper reviews the existing literature on the effects of PM in mental health and substance use disorder (SUD) treatment. Whereas previous reviews have examined aspects of PM in mental health treatment, this is the first such review to cover monitoring efforts in substance abuse treatment, conceptualized here as diverse forms of measurement-based care. To address drug use, monitoring in SUD treatment has typically relied on treatment attendance and urine screens as indicators of treatment progress. However, some research has shown that other means of PM can significantly improve SUD treatment effectiveness. Previous meta-analyses show that PM significantly improves outcomes in mental health treatment. More extensive research on three particular measures, demonstrate the effectiveness of PM in mental health treatment. With the growing focus on quality improvement in medical care, there is need for further research and adoption of progress monitoring methods in mental health and SUD treatment.

Keywords: psychotherapy outcome, progress monitoring, outcome monitoring, substance abuse services, research synthesis

Monitoring of response to treatment is an expected and routine part of medical care for chronic disorders, such as hypertension, high cholesterol, and diabetes. However, mental health, and substance abuse treatment in particular, has no equivalent standard of care to monitor symptoms and treatment effectiveness. Despite calls over the past decade for adopting such a practice in the treatment of psychiatric disorders, there has been little implementation of monitoring protocols. Among the first to discuss the need for attention to patient progress in the treatment of psychiatric disorders was Howard and colleagues (Howard, Moras, Brill, Martinovich, & Lutz, 1996). These authors located patient-progress evaluation alongside efficacy and effectiveness research,

pointing out the importance of assessing whether a given treatment is working for a specific individual patient, not just whether it tends to work for a large group of people. They suggest that comparing an individual's progress as measured throughout treatment with an expected course of progress can help guide treatment decisions.

It is likely that no one would question the need to assess progress in treatment, and that clinicians do just that on an ongoing basis via informal means. However, there is evidence that clinicians do not accurately assess treatment progress, in particular, that they are poor at recognizing deterioration in treatment (Hannan et al., 2005; Hatfield, McCullough, Frantz & Krieger, 2010). Hatfield

JESSICA D. GOODMAN received her PhD in clinical psychology from Miami University. She is a psychologist in the Center of Excellence in Substance Abuse Treatment and Education (CESATE) at the Philadelphia Veterans Affairs Medical Center, Philadelphia, Pennsylvania. She is also a clinical associate in the Department of Psychiatry at the University of Pennsylvania's Perelman School of Medicine. Her research and clinical interests include substance use disorder treatment, interpersonal relationships, and treatment quality.

JAMES R. MCKAY is a Professor of Psychology in Psychiatry at the University of Pennsylvania, and the director of the CESATE at the Philadelphia Veterans Affairs Medical Center, Philadelphia, Pennsylvania. He received his PhD in psychology from Harvard University, and completed postdoctoral training in substance use disorder treatment research at Brown University. His research is focused on the development and evaluation of new continuing care interventions for substance use disorders and on measurement-based care approaches to the treatment of these disorders.

DOMINICK DEPHILIPPIS received his PhD in clinical psychology from Hahnemann University. He is the education coordinator for the CESATE at the Philadelphia Veterans Affairs Medical Center, Philadelphia, Pennsylvania. He also is a clinical associate in the Department of Psychiatry at the University of Pennsylvania's Perelman School of Medicine. His areas of professional interest include the dissemination and implementation of measurement-based care and evidence-based treatments, in particular, motivational enhancement therapy and contingency management, in specialty care settings for patients with substance use disorders.

DR. MCKAY'S efforts were partly supported by the United States Department of Health and Human Services, National Institutes of Health, National Institute on Drug Abuse Grant K24DA029062.

CORRESPONDENCE CONCERNING THIS ARTICLE should be addressed to James R. McKay, PhD, Center on the Continuum of Care, University of Pennsylvania, 3440 Market Street, Suite 370, Philadelphia, PA 19104. E-mail: jimrache@mail.med.upenn.edu

and Ogles (2004) found that only 37% of practitioners use some form of outcome assessment in their practices. It seems particularly important, therefore, that clinicians use a more standardized means of determining progress in treatment in order to detect and mitigate negative outcomes.

Several national organizations have begun to articulate the value of progress monitoring (PM) as a means of ensuring the quality and efficiency of treatment for mental health and substance use disorders (SUD). In a 2006 report focused on quality of care, the Institute of Medicine highlighted the need to develop "monitoring instruments that can validly assess response to treatment and that are practicable for routine use" (IOM, 2006). Similarly, the American Psychological Association's (APA) task force on evidence-based practice stated that clinical expertise involves "monitoring of patient progress . . . that may suggest the need to adjust the treatment" (2006, p.276). They also noted the need for research on the "effects of feedback regarding treatment progress to the psychologist or patient" (APA Presidential Task Force on Evidence-Based Practice, 2006, p. 275). The issue has remained on APA's radar since that time. Carol Goodheart (2011), during her term as president of the APA, discussed the importance of outcomes monitoring and its clinical relevance as part of her 2010 APA Presidential Taskforce on Advancing Practice. In 2011, the APA published PracticeOUTCOMES, an online database of outcomes measures for use in practice, including information on domains, features, costs, reliability, and so forth (American Psychological Association, 2011).

Psychiatry has begun to examine the need for measurement-based care. Valenstein et al. (2009), representing the Group for Advancement of Psychiatry, call for the use of standardized scales in addition to clinical interviews in order to gain a more complete clinical picture. Using measurement scales in treatment, they suggest, may allow for greater balance of focus on the patient as well as symptoms; timely detection of issues such as substance abuse and suicidal ideation; and improve patients' disease self-management. Recently, there has been considerable interest in personalizing interventions for medical and psychiatric problems by using information collected at the start of treatment, including genetic factors, to aid in the selection of optimal treatments for each patient. However, at this point, there has been only limited success with this approach. With regard to affective disorders, Simon and Perlis (2010) argued that personalized medicine for depression would be better served by monitoring outcomes and adjusting treatment over time than by attempting to personalize via information collected before treatment is initiated. Thus, ongoing monitoring would reveal any need for change in treatment strategies or medications.

More attention has been turning to the use of PM across a variety of stakeholders and organizations. The Outcome Questionnaire-45 (OQ-45; Lambert et al., 1996; Lambert et al., 2004) and the Partners for Change Outcomes Monitoring System (PCOMS; Miller, Duncan, Sorrell, & Brown, 2005), comprised of the Outcome Rating Scale (ORS; Miller, Duncan, Brown, Sparks, & Claud, 2003) and Session Rating Scale (SRS; Duncan et al., 2003) have accumulated enough support in the literature that they have been accepted into the U.S. Substance Abuse & Mental Health Services Administration's (SAMHSA) National Registry of Evidence-based Programs and Practices (NREPP; SAMHSA, 2013). The May, 2012 issue of Canadian Psychology was dedi-

cated to research on PM. In addition, the June, 2012 issue of Psychotherapy, published by APA's Division 29 (Psychotherapy), is a special section on bringing together clinical research and practice, and includes articles on both the OQ-45 (Lambert, 2012) and Treatment Outcome Package (TOP; Youn, Kraus, & Castonguay, 2012).

In the field of SUD treatment, the concept of PM has proceeded more slowly. Although addiction treatment traditionally incorporates monitoring indicators such as urine drug screens and treatment attendance, there has been little systematic research in the field on how to interpret these indicators and how to adapt treatment in response. Carroll and Rounsaville (2002) called for greater use of standard assessment techniques in treatment of substance use disorders, particularly for treatment planning and monitoring goals, and to make use of evidence-based treatments such as contingency management and motivational interviewing. McLellan, McKay, Forman, Cacciola, and Kemp (2005) noted that recovery comprises more than just cessation of alcohol and other drug use; rather, it involves more comprehensive improvements in health and social functioning and reduced threats to public health and safety. These authors called for moving beyond outcome and follow-up measures to assess for relapse and instead suggest that SUD treatment adopt a strategy of "concurrent recovery monitoring," which they assert would significantly improve the quality of SUD treatment. In this approach, patient progress during treatment is monitored in a systematic fashion with reliable and valid instruments, with changes made to the treatment as needed.

SUD treatment has taken small steps forward in utilizing "stepped-care" and "adaptive treatment" approaches to alter treatment in response to progress, which is still typically indicated through drug screens or attendance. Sobell and Sobell (2000) urge a stepped-care approach for alcohol treatment, to improve cost effectiveness and treatment efficacy. They suggest that when patients do not respond satisfactorily, treatment intensity may be increased or type of intervention may be adjusted. However, they omit any mention of how such satisfactory improvement should be assessed. Murphy, Collins, and Rush (2007) broaden the concept of stepped care to adaptive treatment, in which clinicians alter treatment either through a trial-and-error process or by a set of predetermined decision rules based on patient progress. Previous overviews have described aspects of the work on PM in mental health care (e.g., Green & Latchford, 2012; Lambert & Shimokawa, 2011; Overington & Ionita, 2012). However, each of these reviews addresses only part of the picture, and not one has discussed the use of monitoring in SUD treatment. The current paper will begin with an overview of PM in health care and mental health treatment and the research that substantiates the utility of PM, and will then bring together the literature on various means of PM in substance abuse treatment (inclusive of alcohol and other drugs of abuse), discuss the strengths and limitations of this research, and suggest ways to promote adoption of PM in SUD treatment.

Challenges in Examining the Literature on PM

One challenge facing the field of PM is the heterogeneity of terminology used to label the same concept. These labels include routine outcome monitoring, progress monitoring, concurrent recovery monitoring, concurrent clinical feedback, clin-

ically informed outcomes management, measurement-feedback systems, measurement-based care, adaptive treatment, stepped care, feedback-informed treatment, patient-focused research, practice-based evidence, and client-directed outcome-informed (e.g., Barkham et al., 2001; Hamilton & Bickman, 2008; Doucette, 2006; Duncan, Miller & Sparks, 2004; Howard et al., 1996; McLellan et al., 2005; Miller, 2010; Sobell & Sobell, 2000). In using the term "outcome," there may be confusion about whether the focus is on treatment progress, or outcome, from session to session, versus outcome at an end point or follow-up once treatment has terminated (e.g., SAMHSA, 1995). A parallel issue is whether the focus is on altering treatment at the individual level (e.g., adaptive care) versus the system level (e.g., performance measures). The term "progress monitoring (PM)" has begun to catch on as the clearest and most accurate description of the intervention, and will thus be used in this paper.

In the next sections of this paper, we review the research that has been conducted on symptom and treatment PM in psychiatric and substance use disorders, through a consideration of findings from meta-analyses and individual studies. The literature search was conducted using terms discussed above, as well as a snowball technique examining citations and works cited, via Medline, Google Scholar, and PsychInfo. The goal was to locate papers for all trials examining effects of PM in mental health and substance abuse treatment with adults, as well as to generate a comprehensive list of the available measures in these domains. The search related to substance abuse treatment included alcohol as well as all other drugs of abuse.

Monitoring in Health: Meta-Analyses

Several researchers have conducted meta-analyses of research on PM across a wide variety of health and mental health domains. They found overall positive results for using PM in treatment, but there was great diversity in the treatment settings, measures used, and diagnoses treated, which makes it challenging to apply these outcomes directly to PM in substance abuse research. Such challenges are particularly the case as almost no studies included in these meta-analyses focused on substance abuse treatment, and not a single one included SUD specialty care; the three addiction-related studies were conducted in primary care or hospital/medical clinics. However, they do provide a starting point for considering the potential utility of PM in SUD treatment.

Carlier et al. (2012) conducted a meta-analysis of research studies examining the effects of routine outcome monitoring (ROM) and feedback of mental and physical symptoms and status in primary care and hospital settings. The research base included 52 randomized control trials published between 1975 and 2009. The vast majority of these (*n* = 45) included a focus on patients' mental health, though not always in a psychiatric or mental health care setting or as a primary outcome measure. In most studies, monitoring assessments were followed up with written feedback to providers and patients. Randomization consisted of comparisons between feedback and no-feedback groups. Carlier et al. found that there was a positive impact for monitoring and feedback on the work of clinicians, in that they were able to provide faster, more complete notes for diagnosis, as well as offer rapid adjustment of treatment when indicated. The research also indicated a positive effect on communication between patients and providers. Results

were inconclusive on the cost effectiveness of ROM and patient satisfaction with care. Overall, 63% of studies included found a positive impact of monitoring on physical and/or mental health, indicated by fewer complaints. For all 45 studies that included mental health trials, 65% found a positive effect of monitoring; of 11 studies focused on depression treatment, 64% found a positive impact of monitoring; and in 3 studies of addiction treatment (none in SUD specialty care), 100% found positive effects of monitoring.

Knaup, Koesters, Schoefer, Becker, and Puschner (2009) completed a meta-analysis of 12 controlled trials from 2001–2006 that evaluated the effects of measurement and feedback interventions on patient outcomes in specialist mental health care settings in the United States, United Kingdom, and Germany. None of these studies focused on SUD treatment. A variety of measures, including the OQ-45 (Lambert et al., 1996; Lambert et al., 2004), the Brief Psychiatric Rating Scale (BPRS; Overall & Gorham, 1988) and the Health of the Nation Outcome Scales (HoNOS; Wing et al., 1998), among others, were used in the studies. Feedback was typically given at 1–2 week intervals, often consisted of graphical or numerical representations of progress, and sometimes included treatment recommendations. They found that feedback had a small but significant effect on improving outcome at the end of treatment ($d = 0.10$); however, they found no significant long-term effect 3 to 12 months after intake ($d = -0.06$). They found no advantage in terms of cost effectiveness. Moderator-analysis results indicated variables that improved outcome from feedback included giving feedback to both patients and providers, versus to providers only; giving feedback at least twice, versus only once; and giving feedback that includes patient progress, versus showing current status only.

Poston and Hanson's (2010) meta-analysis examined the effects of providing therapeutic assessment, that is, psychological testing followed by personalized feedback on therapy process and outcome across 17 studies of a wide array of mental health and alcohol abuse treatment. The assessment and feedback in these studies comprised a separate/distinct process, rather than being a repeated and integrated part of treatment, as in progress monitoring studies. For example, in the two studies related to alcohol use, the feedback/intervention was not part of ongoing treatment; it was conducted solely in the context of the research. They found an overall medium effect size ($d = 0.423$), suggesting that testing and feedback does impact treatment in therapeutic ways. They found that studies using process (client/therapist interactions) variables, such as session depth and working alliance, produced a much higher effect size ($d = 1.117$) than studies using outcome (effects of treatment) variables, such as premature termination, days hospitalized, and symptomatology ($d = 0.367$).

Among the meta-analyses, there is very limited information on gender, age and ethnicity. In Carlier et al.'s (2012) study, all of the 52 included studies focused on adults (*n* = 37) and older adults (*n* = 8). Thirty-two of the studies were conducted in the United States, 11 in the U.K., and one or two each in Australia, Canada, France, the Netherlands, New Zealand, and Scotland. No data were available on the gender or race/ethnicity of participants in these studies. Among Knaup et al.'s (2009) 12 studies, all focused on adults and six were conducted in the U.S., four in the U.K., and two in Germany. Ten of the 12 studies consisted of at least two thirds female participants, and no information was provided on race/ethnicity. In Poston and Hanson's (2010) 17 studies, mean

age, when given, was 18–40 years old, with no data from six studies. Ten of the studies comprised a majority of female participants, with no data from three studies. Regarding ethnicity, among the five studies for which ethnicity was described, four of the five included a majority (54%–84%) of European Americans, and one study comprised 69% Latino(a) participants. The type of treatment setting varied significantly within and among the studies. In Carlier et al.'s research, studies took place in primary care settings (*n* = 21), mental health settings (*n* = 10), hospital/ medical clinics (*n* = 9), oncology departments (*n* = 6), an emergency department (*n* = 4), and one each from a dentist's office and a neurology department. In Knaup et al.'s paper, nine studies were conducted in outpatient settings, two in inpatient settings and one in a day hospital. The overall lack of data on participants' demographics, as well as the great diversity in settings may limit generalizability of the results of these meta-analyses.

These meta-analyses provide a broad picture of PM across an array of health services, providing a foundation that suggests that this procedure may have a beneficial effect on health treatment outcomes. Although they include some research on mental health and substance abuse PM, the studies included are so diverse as to make it difficult to get a clear picture of the evidence for specific kinds of treatment. It is thus worthwhile to take a detailed look at the research in the mental health field in particular and then in the area of substance abuse treatment.

Monitoring Measures in Mental Health Treatment

A number of progress monitoring measures for mental health treatment have been developed by researchers around the world, for example, Health of the Nation Outcome Scales (HoNOS), Clinical Outcomes in Routine Evaluation–Outcome Measure (CORE-OM; Barkham et al., 2001; Evans et al., 2002), and TOP (Kraus, Seligman, & Jordan, 2005); see Table 1 for a list of measures and their properties. Despite the availability and use of these measures, little research has been published on the effects of using these measures in practice. Rather, the research has been focused on establishing a measure's psychometrics and/or implementation. For example, the CORE-OM and the TOP receive many mentions in the literature, and reportedly are in wide use, but there has been no research published on the effects of their use in practice.

Much of the work in the field has been conducted with three measures, the ORS (Miller et al., 2003), SRS; Duncan et al., 2003), known collectively as Partners for Change Outcomes Monitoring System (PCOMS; Miller et al., 2005) and OQ-45, (Lambert et al., 1996, 2004). Even though these measures were used in studies included in the meta-analyses described above, it is useful to examine them more closely. The paper ORS and SRS measures are available for free to individuals but require a group license for agency or organizational use. The online feedback and support tool, MyOutcomes.com, allows for computerized administration and immediate scoring and feedback and is available for those who pay a subscription fee. A limitation of the OQ-45 is that it is a proprietary measure and requires a license to obtain and use the measure in practice, and the software that gives detailed feedback is available at further cost.

The ORS and SRS are four-item measures designed to track treatment progress and therapeutic alliance, respectively. The ORS is administered at the start of each therapy session and is scored and reviewed with the client in the session; the SRS is given at the end of each session and is reviewed as any concerns arise. The ORS and SRS use visual analog scales, each comprising four items, with descriptive anchors at the ends of a 10-cm line. Patients mark where on that line they feel they fall and the measurement of the distance of that mark from the left end becomes the score for that item. The ORS measures overall functioning as well as individual, interpersonal, and social functioning, whereas the SRS assesses the patient's feelings about the therapeutic relationship, goals and topics, and approach/method, as well as overall satisfaction with the session just completed. Validity research on the ORS was conducted in a community family service agency in South Florida, with an adult clinical sample comprised of two thirds women, of unknown ethnicity (Miller et al., 2003). A further validation study included a large ethnically diverse sample, again two thirds women, from an international employee assistance program (Miller, Duncan, Brown, Sorrell, & Chalk, 2006). The SRS was initially validated on samples from three different clinical sites, an outpatient mental health counseling agency in Danbury, Connecticut, a community family service agency in South Florida, and a home-based intervention program out of the community family service agency (Duncan et al., 2003). Research in an array of settings, including individual therapy (e.g., Reese, Norsworthy, & Rowlands, 2009) and couples therapy (e.g., Anker, Duncan & Sparks, 2009) indicate that treatment incorporating these measures results in greater client improvement at a faster rate.

Miller et al. (2006) examined the use of the ORS and SRS in an international employee assistance program through an initial training and implementation period over nearly two years. All clients who received telephonic counseling over this time period received oral versions of the ORS and SRS. All participants in the study received the ORS/SRS and feedback; they were compared with a normative sample from a previous study (Miller et al., 2003). They found an overall effect size of .79 compared with a normal population, which increased to 1.06 when restricted to only those patients who scored in the clinical range at intake. Reese et al.'s (2009) randomized clinical trial looked at the impact of using the ORS and SRS to provide feedback to clients in a university counseling center and a graduate training clinic. They compared clients who used the ORS and SRS at each session to those who either took the ORS at the start and end of treatment (counseling center) or took the ORS at each session but neither therapist nor client was given the results (training clinic). The counseling center sample included 53 women and 18 men, and was 78.4% White. The training clinic sample comprised 51 women and 21 men and was 79.6% White and 14.6% Hispanic/Latino. They found significantly more improvement for those in the condition that included the use of the ORS and SRS at every session (the feedback group), with effect sizes of *d* = .54 in the counseling center and *d* = .49 in the training clinic. There was no difference in number of sessions attended between the feedback and nonfeedback groups. More clients in the feedback groups experienced reliable change, defined as an improvement of at least 5 points. Those in the feedback condition had a somewhat faster rate of change, with 56% of the feedback group achieving reliable change after seven sessions, but 52% of the nonfeedback group achieved reliable

Table 1
Psychometric Properties of Mental Health Progress Monitoring Measures

Measure	Number of items	Format of items	Domains/factors	Test-retest reliability (Pearson's r)	Internal consistency (Coefficient alpha)	Concurrent validity	Free or cost
Behavior and Symptom Identification Scale							
BASIS-24 (Cameron et al., 2007)	24	5-Point Likert	6 Subscales	N/A	.71–.91	N/A	Cost
Beck Depression Inventory							
BDI (Beck, Steer & Carbin, 1988)	21	4-Point Likert	1	.48–.86	Mean α = .86	.72–76	Cost
Brief Symptom Inventory							
BSI (Derogatis & Melisaratos, 1983)	53	5-Point scale	9 Dimensions, 3 Indexes	.68–.91	.71–.85	W/relevant MMPI clinical scales .32–.55	Cost
Clinical Outcomes in Routine Evaluation- Outcome Measure							
CORE-OM (Barkham et al., 2001; Evans et al., 2002)	34	5-Point Likert	4 Domains: Subjective well-being, Problems/symptoms, Functioning, Risk	.88 .87 .87 .64	.75 .88 .87 .79	.43–.79 .47–.87 .44–.78 .30–.69	Free
Depression Anxiety Stress Scales							
DASS (Brown, Chorpita, Korotitsch, & Barlow., 1997)	42	4-Point Likert	3 Domains: Depression, Anxiety, Stress	r = .71, r = .79, r = .81	.96 .89 .93	W/BDI r = .75, W/BAI r = .83, W/PANAS neg affect r = .72	Scale free, manual costs
Generalized Anxiety Disorder 7-item							
GAD-7 (Spitzer, Kroenke, Williams, & Lowe, 2006)	7	4-Point Likert	1	.83	.92	W/SF-20 MH scale r = .75, W/BAI r = .72	Free
Outcome Rating Scale							
ORS (Miller et al., 2003)	4	visual analog scale	4	.66	.93	W/OQ-45 r = .59	Scales free, tools cost

Table 1 (*continued*)

Measure	Number of items	Format of items	Domains/factors	Test-retest reliability (Pearson's r)	Internal consistency (Coefficient alpha)	Concurrent validity	Free or cost
Outcome Questionnaire-45							
OQ-45 (Lambert et al., 2004)	45	5 point Likert		.84	.93	.55–.88	Cost
Patient Health Questionnaire							
PHQ-9 (Kroenke, Spitzer & Williams, 2001)	9	4 point Likert	1	.84	.86–.89	W/SF-20 MH scale $r = .73$	Free
Session Rating Scale							
SRS (Duncan et al., 2003)	4	Visual analog scale	4	.70	.88	W/HAQ II $r = .48$	Scales free, tools cost
Treatment Outcome Package							
TOP (Kraus et al., 2005)	52	Likert	11	.76–.94	.53–.93	Varies widely by scale E.g., TOP depr. w/BDI $r = .92$ TOP Depr. w/BSI-Depr $r = .90$ TOP Violence w/BSI hostility $r = .77$ TOP panic w/BSI-somatization $r = .67$ TOP panic w/BSI Anx $r = .50$	Basic free, tools cost

change after 10 sessions. Among a subset of the sample who were identified as not progressing (i.e., no reliable change after three sessions), those who received feedback had greater treatment gains than those who did not receive feedback. The difference for this subset of clients, however, did not reach significance, possibly due to small sample size ($n = 27$).

Anker et al. (2009) and Reese, Toland, Slone, and Norsworthy (2010) both studied the effects of using the ORS and SRS in couples therapy. Anker et al. (2009) conducted a study of 205 couples seeking treatment at a family counseling agency in Norway. Couples in this study were White, Euro-Scandinavian, and heterosexual. Participants were randomly assigned to the feedback condition, in which the counselor used the ORS and SRS in treatment, or to treatment as usual (TAU), in which couples completed the ORS prior to each session, but it was never seen by the counselor. They found a fairly strong correlation (.50) between scores of partners, wherein if one member of the couple improved, the other was likely to improve as well. The effect size of the feedback condition was $d = 0.50$, indicating that using feedback in treatment significantly improved treatment effectiveness. They found that the effects of feedback seemed to vary by counselor, in that less effective therapists, i.e., those with the worst outcomes without use of feedback, received more benefit from using feedback than the most effective counselors. Significantly more couples achieved reliable change in the feedback condition, and more couples at risk for not progressing achieved reliable change in the feedback condition. Feedback effects were maintained; at a follow-up 6 months after treatment completion, the effect size remained strong, $d = .44$. In addition, a significantly greater proportion of couples in the feedback group than in TAU were still together at the 6-month follow-up. Reese et al. (2010) found similarly notable effects of feedback in heterosexual couples treated in a training clinic of a marriage and family therapy master's program. A large majority (74%) of the sample was White, and 16.3% was Hispanic/Latino. In their study, clients in the feedback condition improved significantly more on ORS scores than did those in TAU, with an effect size of $d = 0.48$. Couples in the feedback condition improved more quickly than those in the TAU condition and more clients in the feedback condition realized both reliable (improvement of ≥5 points) and significant change (i.e., crossed the clinical threshold score).

The ORS/SRS research has both strengths and limitations. The sample sizes range from $N = 74$ (Reese et al., 2009) to $N = 6,242$ (Miller et al., 2006), but the largest and most diverse sample did not have a true control group and instead used a nontreatment normative sample from another study with a different population. The studies varied by whether they randomized on the basis of participant or therapist, and also varied in how often the ORS was administered to the control group, either at the start and end of treatment or at every session. Other than Anker et al. (2009), all studies followed participants only to the last session attended, which did not allow them to assess longer term effects. Additionally, the studies used only the single self-report measure (the ORS) to assess progress in treatment, which provides a limited view of change in symptoms and functioning. Finally, the studies did not assess how therapists used the feedback with their clients, which limits conclusions about mechanisms of action of the effects of feedback on treatment progress. Most samples were predominantly White/Western European, and no analyses were conducted by ethnicity.

The strengths of this body of research include its being conducted in a variety of settings, both individual and couples treatment, with a range of types of providers with varied degrees and levels of experience. The providers came from diverse theoretical backgrounds, which helps to disconnect the use of feedback from a specific type of therapy. The research methods and processes reflect the real-world experience of therapists in a variety of settings, which suggests that the overall conclusions can be generalized to real-world practice in different forms.

The OQ-45 (Lambert et al., 1996, 2004) is a 45-item measure with three subscales assessing four domains of functioning: symptoms of psychological disturbance, including anxiety and depression; interpersonal problems; social role functioning; and quality of life. The OQ-45 is designed to be used regularly in ongoing treatment for tracking progress. Lambert has spearheaded an impressive line of research on the OQ-45 and its use in treatment. Lambert and colleagues have examined the impact of outcome monitoring using the OQ-45 on psychotherapy outcomes in mental health treatment in numerous studies. Through many iterations of research, they have developed cutoff scores for reliable and clinically significant change, which serve as practical guidelines for predicting treatment failure from early treatment response. They also created a warning system using color-coded feedback to therapists about a patient's progress or decline over time, as well as treatment recommendations pertaining to specific indicators. Most of the studies on the OQ-45 by Lambert and colleagues were conducted in a university counseling center, with samples predominantly female (two thirds young women; mean age, 22–30) and primarily White. However, other studies have documented adequate validity with African American samples (e.g., Abanishe, 2008; Chao, Olson, Spaventa, & Smith, 2010), suggesting that the OQ-45 is valid across at least two ethnicities.

Lambert et al. (2003) published the results of three prior studies together as a meta-analysis, giving a combined picture of the effects of tracking patient progress in a college counseling center. Each of the three studies lasted about a year and included 600–1,000 participants. Two of the studies involved random assignment to feedback or control conditions, and the third assigned condition by school semester. OQ-45 data were collected by a secretary upon a client's arrival at the clinic. Feedback to therapists consisted of a progress graph with the patient's scores, a colored progress indicator, and a written message about the patient's progress, specifying improvement or lack thereof. Patients who were not making progress as expected were labeled as signal-alarm cases, or "not on track." Of those patients identified as not on track, those in the feedback group showed greater improvement than those in the control group, with effect sizes of 0.44 and 0.34. Feedback for those not on track led to lower rates of deterioration (13% vs. 21%) and higher rates of reliable change (35% vs. 21%), compared with those not on track who did not receive feedback. Those not-on-track patients whose therapist received feedback attended more sessions of treatment than did those without feedback. In contrast, the on-track cases in the feedback group attended slightly fewer sessions than those not receiving feedback, which Lambert et al. promote as improved cost effectiveness. The benefits of feedback to professional therapists were specific to the signal-alarm cases,

whereas the feedback to training therapists had a more generalized effect.

Lambert and colleagues have continued work to examine the use of the OQ-45 in clinical practice over the past decade. Harmon et al. (2007) used similar methodology as previous Lambert research, with the collective "no-feedback" participants in previous studies serving as an archival control group alongside two experimental groups. In one group, therapists received feedback as in previous studies, and in the other group, therapists were provided with feedback and clients also received a version of the feedback, with the same color coding that the therapist receives, as well as statements of progress made and prognosis. For the full sample, those who received any feedback had better outcomes than those who did not receive feedback. This difference was found for both the subsets identified as on track and those labeled not on track. Those not on track who received feedback attended more sessions than those not on track who did not receive feedback, but there was no significant difference in attendance for those on track. For all groups, they found that providing feedback directly to clients and to therapists did not significantly improve outcome beyond giving feedback to therapists alone. A subset of not-on-track participants (in both experimental groups) was randomized to receive additional assessment and feedback covering therapeutic alliance, readiness for change, and social support. Those who received these clinical support tools had significantly greater improvement than those who received only the standard feedback, and vastly greater improvement than those who received no feedback. Those in the clinical support tools condition also attended on average 3.46 more sessions than those in the standard feedback group.

In a follow-up study, Slade, Lambert, Harmon, Smart, and Bailey (2008) again found that giving the client as well as the therapist feedback did not affect outcome, and that providing immediate feedback through an electronic support tool (vs. delayed feedback due to hand scoring and report preparation) did not improve outcome, but did lead to equivalent outcome at a faster rate. They also found that using additional clinical support tools, as described in the previous paragraph, significantly improved outcome compared with TAU, and that more rapid feedback did not affect outcome, but did increase speed of improvement. Each additional component (feedback, clinical support tools) appears to add a significant advantage in improving treatment outcomes and efficiency.

The work of Lambert and his colleagues is generally viewed as a rigorous line of research. The studies have large sample sizes, ranging from $n = 609$ to $n = 1,374$ in the experimental group, with an additional $n = 1,445$ in an archival control group. The studies have sophisticated designs, with strong randomization designs and sequential randomization. They utilize a large number of therapists, balanced between professionals and trainees. Most of their research has been conducted at a single university counseling center, which allows for strong comparisons among conditions, as well as appropriate archival control groups.

Despite these many strengths, their work also has some limitations. The use of a single population may limit generalizability to other types of service settings, and the comfort and familiarity with the process of feedback that grows over the course of many studies may affect the results through demand characteristics or therapist influence, as therapists cannot be masked to condition. In addition, it is primarily the same set of researchers who have conducted the majority of the work with the OQ-45, which may influence the design and effects of the interventions. Similar to the research with the ORS, there is no follow-up beyond the end of treatment to assess longer term change. Also, as with the ORS, a single self-report measure comprised the only assessment of symptoms and progress. Finally, although the OQ-45 researchers used complex randomization designs, they have not yet examined thoroughly how therapists use the feedback in treatment and what modifications to treatment affect change.

From the evidence to date using the ORS/SRS and OQ-45, it appears that monitoring and feedback do have a significant effect on treatment outcome. The studies generally found a medium effect size, with measurement and feedback related to higher rates of reliable and significant change over the course of treatment, with particular improvement for those at higher risk of poor outcome. They found variable impact on number of sessions attended, but there was some evidence that those who received feedback improved at a faster rate of change. Additional support in the form of clinical tools and treatment recommendations appears to increase the impact of the intervention. Although this area of research needs further study, it is clear that the potential power of monitoring and feedback as a therapeutic intervention deserves attention in the field of SUD treatment.

Monitoring in SUD Treatment

Historically, progress in substance abuse treatment has been quantitatively measured by using urine drug screens or breathalyzers, as well as attendance at treatment. Positive drug screens or missed sessions would indicate lack of progress in treatment, perhaps leading to a change in treatment plan or even expulsion from treatment. More recently, a number of teams have developed measures to assess progress in treatment of SUDs, including measures specifically for alcohol treatment, for example, Alcohol Treatment Outcome Measure (ATOM); for methadone treatment, Methadone Treatment Index (MTI); and for general drug treatment, for example, Treatment Outcomes Profile (TOP), Alcohol and Drug Outcome Measure (ADOM), and Brief Treatment Outcome Measure (BTOM). See Table 2 for a list of SUD-related measures and their psychometric properties. However, there is a paucity of research examining the impact that assessing progress has on treatment. None of the following studies were included in the meta-analyses of outcome monitoring studies.

Because urine screens and attendance are somewhat rough indicators of progress, recent research has attempted to utilize the information in novel and adaptive ways. Marlowe and colleagues at the Treatment Research Institute in Philadelphia, Pennsylvania, conduct research in drug courts, which use attendance in treatment and urine drug screens to monitor the progress of the offenders. Marlowe et al.'s (2012) most recent work involved a pilot study of an adaptive drug court protocol. This new study builds on their earlier work (Marlowe, Festinger, Dugosh, Lee, & Benasutti, 2007), in which risk level assessed at the start of drug court was used to "match" offenders to optimal hearing schedules. The new study again assigned offenders to biweekly or "as-needed" hearing schedules on the basis of risk, but then further adapted hearing schedule on the basis of outcomes in drug court. Offenders who attended drug court as scheduled but had positive drug screens were provided with intensive clinical case management to help

Table 2
Psychometric Properties of Substance Use Disorders Progress Monitoring Measures

Measure	Number of Items	Format of items	Domains/Factors	Test-retest reliability	Internal consistency (Coefficient alpha)	Concurrent validity	Free or cost
Alcohol and Drug Outcome Measure							
ADOM (Pulford et al., 2010)	18	Varies	2 sections Part A (drug use) Part B (health/functioning)	ICC = .84–.98 k = .45–.60	n/a n/a	r = .77–.98 r = .08–.56	Free
Addiction Severity Assessment Tool							
ASAT (Butler et al., 2006)	27	4 pt scale	6 subscales: Daily Functioning Relational Functioning Dysphoric states Dependence Severity Recovery skill/self-efficacy Existential Factors Total	r = .71 r = .82 r = .80 r = .74 r = .83 r = .73	.79 .78 .79 .80 .81 .81 .93	.33–.48 .27–.47 .35–.61 .22–.58 .19–.54 .33–.63	Cost
Alcohol Treatment Outcome Measure							
ATOM (Simpson, Lawrinson, Copeland, & Gates, 2009)	32	Varies	5 Domains, 3 factors Scale: SDS Scale: K10 Scale: HSU	Items ICC = .32–.94		.55–.93 .90 .89 .73	Free
Brief Addiction Monitor							
BAM (Cacciola et al., 2012)	17	Varies	3 Factors	Items ICC = .24–.90 Factors ICC = .75–.84	n/a n/a	n/a n/a	Free
Brief Treatment Outcome Measure							
BTOM (Lawrinson, Copeland & Indig, 2005)	32	Varies	6 Scales, 5 domains SDS BBVER ODUI PFS SFS	ICC = .85 ICC = .77 ICC = .59–.90 ICC = .87 ICC = .74	.85 .86 .82 .41–.58	.58–.77	Free
Maudsley Addiction Profile							
MAP (Marsden et al., 1998)	60	Varies	4 Domains, 4 factors Substance use Health-risk behavior Physical and psychological health Personal social functioning	ICC .81–.94	.79–.90	.72 .74	Really for research use only

(table continues)

Table 2 (continued)

Measure	Number of Items	Format of items	Domains/Factors	Test-retest reliability	Internal consistency (Coefficient alpha)	Concurrent validity	Free or cost
Methadone Treatment Index							
MTI (Deering, Sellman, Adamson, Horn, & Frampton, 2008)	45	Varies	3 Sections Degree of drug use Social & behavioral functioning General health	ICC = .95 ICC = .90 ICC = .90	n/a n/a .83, .84	.47–.81 .72–.81 .38–.57	Free
Treatment Outcomes Profile TOP (Marsden et al., 2008)	20	Varies	4 Sections Substance use Health-risk behavior Offending Health & social functioning	ICC = .62–.90 ICC = .75, k = .40–.85 ICC = .76-.77, k = .55–.76 ICC = .41-.84, k = .61–.71		r = −.55–.74	Permission required

them address the problems that were contributing to relapse. Those, on the other hand, who failed to attend scheduled drug court sessions were increased to biweekly hearings, if they were on the as-needed schedule, or were terminated from the program and sentenced on their original drug charges (i.e., likely leading to incarceration) if they were already on the biweekly schedule. Results showed that the full adaptive algorithm with baseline matching produced better drug-use outcomes than standard drug court (e.g., 64% vs. 48% of all urines were drug free; 8.9 vs. 6.9 consecutive drug-free urines). Analyses of mechanisms of action indicated that drug court responded much more rapidly to poor performance on the part of the offenders in the adaptive condition, relative to drug court as usual.

Brooner and Kidorf (2002) also used attendance and drug screens as indicators of treatment progress in their study of a stepped-care treatment for methadone patients. Their adaptive design features three levels of counseling intensity. Patients begin in Step 1, which consists of one individual counseling session and one group educational session per week. If patients miss a counseling session or have a drug-positive urine test, they are moved to Step 2, which includes a second weekly group session. Further missed sessions or drug-positive urine tests result in transfer to Step 3, which involves two individual and five group sessions per week. Patients who have been stepped up can move back down to Step 1 by attending all counseling sessions and providing drug-free urine samples. Studies by this group indicate that this stepped-care approach works equally well in methadone clinics and physicians' offices (King et al., 2002), and can be adapted to increase employment rates in methadone patients (Kidorf, Neufeld, & Brooner, 2004). Brooner et al. (2004) also found that adding contingencies, or consequences, for missed counseling sessions, produced a higher rate of counseling attendance and a lower rate of poor treatment response, compared with their standard stepped-care treatment. The work of Marlowe et al. (2012, 2007) and Brooner et al. suggests that attendance and drug screens can be effectively used in more structured adaptive treatment, allowing these measures of progress to truly affect the course of treatment.

McKay and colleagues have conducted a series of studies using measurement-based care to determine whether initial progress in outpatient treatment can predict optimal continuing care interventions. The first study found that cocaine-dependent patients who did not achieve abstinence during a 4-week intensive outpatient program (IOP), a program that involved at least 9 hr of treatment per week, typically in group sessions with possible adjunct individual sessions, had much worse cocaine- and alcohol- use outcomes over a 24-month follow-up than those who stopped using cocaine and alcohol. However, they benefited to a greater degree from a cognitive behavioral therapy (CBT)-based, continuing care intervention than from standard group continuing care, whereas there were no treatment differences in those who had stopped using cocaine and alcohol in IOP (McKay et al., 1999). In a second study, IOP patients who did not achieve the majority of the goals of IOP during the first month of treatment had better substance use outcomes if they subsequently received more intensive, clinic-based continuing care, whereas for those who made better progress in IOP, telephone continuing care was superior to clinic treatment (McKay, Lynch, Shepard, & Pettinati, 2005).

A third study found that augmenting IOP with extended continuing care was particularly beneficial relative to IOP only for

alcohol-dependent patients who had low motivation for change and poor social support for recovery at the 1-month point in IOP. Women and patients with prior treatments for alcoholism also benefited to a greater degree from extended continuing care (McKay et al., 2011). Finally, a similar study with cocaine-dependent patients found that augmenting IOP with extended continuing care produced better substance use outcomes for patients who were using cocaine or alcohol at intake to or in the first 3 weeks of IOP. Conversely, there were no effects in patients who were abstinent from cocaine and alcohol during that period (McKay et al., under review). This program of research strongly suggests that patients' progress toward the achievement of abstinence in the first few weeks of treatment, along with progress on other initial treatment goals, can be used to identify which patients are going to benefit from extended recovery support and which are likely to do well with standard care.

The research on adaptive treatment for SUD consists of relatively strong research designs. They tend to include randomized trials with appropriate control groups, follow-ups up to 2 years (e.g., McKay et al., 2011), and often use biological measures in addition to self-report to assess substance use as an indicator of treatment progress (e.g., urine drug screens). There may be some limits to generalizability due to restricted samples such as drug court or a primarily African American veteran population. Another limitation includes low consent rate (Marlowe et al., 2012) and low eligibility rates (McKay et al., 2005), which might mean that the participants who are included differ in significant ways from those who do not participate.

Because attendance and drug use can be useful indicators of progress, definitions of recovery often involve a broader view than drug use alone. For example, physical health, social relationships, and employment can serve as both indicators of and supports for progress. The measures developed over the past decade that include such elements offer a more comprehensive picture of clinical progress and can be used to guide treatment in specific ways. However, these measures have received little attention in the substance abuse treatment literature.

The research of Crits-Christoph et al. (2012) is the only rigorous study to date that has examined the effects of using PM with feedback to clinicians on symptom change for patients in SUD treatment. Patients completed the OQ-45, adapted for use in SUD treatment, before every treatment session in one of three community based outpatient substance abuse treatment clinics. In the intervention phase of the study, clinicians were immediately given access to the assessment results and were given additional assessment opportunities and clinical support tools for those patients identified as being "off track." They found significantly more improvement on alcohol use for those off-track patients whose therapists received feedback and support (Phase 2) compared with those whose therapists received no feedback (Phase 1). In fact, off-track patients in Phase 2 (feedback) ended up at 12 weeks reporting alcohol use at a rate similar to that of those who remained on track. From the time of going off track to Week 12, there were significant differences in improvement between feedback and no-feedback groups on OQ-45 total scores and drug use. They found no differences in retention between the feedback and no-feedback groups.

Miller et al. (2005) discuss the use of the ORS and SRS in a drug and alcohol treatment program offered through an international employee assistance program. They do not formally describe the research methods or results but note several interesting findings. For one, the SUD patients' mean distress scores on the ORS are higher (indicating less distress) at intake than in studies of general mental health patients. Further, the trajectory of change differed from that of mental health patients. Another notable finding was that longer duration of SUD treatment resulted in better treatment outcomes, but improvement for patients in general mental health treatment tapered off after initial visits. Finally, it appears that, similar to a general mental health population, use of the alliance measure was related to improved outcome and retention among SUD-treatment clients.

Hawkins, Baer, and Kivlahan (2008) studied the feasibility and predictive validity of regular monitoring and feedback for treatment retention in a Veterans Affairs' SUD treatment program. In this study, patients completed the CORE-SF (measuring psychological distress; Barkham et al., 2001; Evans et al., 2002) and Client Satisfaction Questionnaire (Attkisson & Zwick, 1982) via a telephone-based interview system weekly for the first 8 weeks of treatment in a substance abuse outpatient treatment program. Results of the assessments were not provided to clinicians, except in the case of an alert for imminent risk. The median number of calls made was seven. Participants who remained in treatment over the course of 8 weeks made significantly more calls than those who dropped out. Over half of the participants reported feeling that the assessments were helpful to their treatment. Outcome results indicated no change in distress over the course of the 8 weeks, regardless of the number of calls or adherence to treatment.

Raes, De Jong, De Bacquer, Broekaert, and De Maeseneer (2011) examined the impact on treatment adherence of integrating assessment and feedback into treatment. In their multisite study in Belgium, during the course of individual treatment for SUD, clinicians in the intervention group replaced regular sessions with assessment and feedback sessions approximately every 30 days. Assessment focused on readiness to change and personal resources. Participants in the control group received treatment as usual, consisting of regular individual therapy sessions. Raes et al. found that the group that received assessment and feedback were significantly more likely to remain in treatment at and beyond 8 and 12 weeks. They did not examine symptom change or other outcome indicators.

Unlike the research on the ORS and OQ-45, both of which have well-organized research tracks and growth of the research base, the SUD-PM literature is highly divergent, with researchers using different methods and various measures, and assessing different outcomes (e.g., attendance, use, and feasibility). Some researchers use particular indicators of substance use and adherence, such as attendance and urine drug screens as the basis for feedback and adjustment of treatment, and other studies use self-report measures more similar to the OQ-45 and ORS to provide ongoing PM and feedback. This latter type of study has only begun to take hold in the SUD treatment field, and the studies that have been conducted have some serious limitations. The strongest is the study by Crits-Christoph et al. (2012), which is modeled on Lambert's work, using the OQ-45 as a repeated measure to provide feedback to clinicians. However, this study did not use a randomized design and had limited assessment of substance use and related factors, as they only added two use questions to the OQ-45 to modify it for SUD treatment. Miller et al. (2005) gave a very cursory description

of the design of their SUD-related study with the ORS. Hawkins et al.'s (2008) study was primarily a feasibility study, with no randomization or control group, and no feedback was given to therapists. Raes et al. (2011) randomized participants but used only treatment attendance as outcome data. Despite the limitations of these studies, they are critical first steps in establishing a research base for PM in SUD treatment.

The demographics of the samples in the SUD treatment tended to differ from those in the mental health studies. Much of the research on the OQ-45 and ORS/SRS involved participants who were young, White, and female, but the SUD samples were much more diverse. There was often a majority of male participants, overrepresentation of African Americans (ranging from 33% to 89%), with mean age ranging from 24–51. In addition, SUD treatment research took place in an array of settings, such as drug courts, community treatment programs, and Veterans Affairs medical centers. Finally, SUD treatment samples included patients in treatment for a variety of drugs of abuse, including alcohol, cocaine, cannabis, opiates, and so forth.

The research of Crits-Christoph et al. (2012) suggests that PM has the potential to affect outcomes in SUD treatment, and Raes et al.'s (2011) work indicates that assessment and feedback may help retain patients in SUD treatment longer. Given the challenge of keeping clients engaged in SUD treatment and the severe impact of substance use at the individual, family and society level, further research on the use of monitoring and feedback in SUD treatment is clearly merited.

Discussion

The research described above demonstrates that PM can have significant positive effects on treatment outcomes. In particular, studies found better drug outcomes (Marlowe et al., 2012), faster rate of improvement (Reese et al., 2009; Reese et al., 2010; Slade et al., 2008), and greater likelihood of experiencing reliable change, indicating symptom improvement or remission (e.g., Reese et al., 2009). More rapid improvement could translate into greater cost effectiveness of treatment. Studies found that improvement using PM was especially notable for those at risk for negative outcomes (Lambert et al., 2003; Harmon et al., 2007; Crits-Christoph et al., 2012; McKay et al., 1999; McKay et al., 2005; McKay et al., 2011) and for trainees (Lambert et al., 2003). One possible mediating factor for such improvement in outcome might be that monitoring and feedback allow for more rapid adjustment of treatment when needed (Carlier et al., 2012; Marlowe et al., 2012). There were mixed results for the effects of PM on treatment attendance and adherence (no effect in Crits-Christoph et al., 2012; positive effect in Raes et al., 2011).

The research suggests a number of ways that PM and feedback can improve treatment processes and outcomes and are relevant to SUD treatment. PM may allow for more rapid and complete notes for diagnosis (Carlier et al., 2012), which can be useful for SUD treatment when coordinating care between various providers. Research showed a positive effect on communication between patients and providers (Carlier et al., 2012), which may allow for more trust and engagement in treatment. More effective treatment as well as stronger alliance would likely translate into greater patient satisfaction.

The studies indicate that several particular elements of PM, or the way it is conducted, lead to better outcomes. One key factor is not just monitoring, but giving feedback to clinicians (Carlier et al., 2012; Reese et al., 2009), and possibly to clients as well (Knaup et al., 2009), though the research is mixed on that (not for Harmon et al., 2007 or Slade et al., 2008). Feedback might be more helpful when it is provided multiple times (Knaup et al., 2009) and when feedback is immediate (Slade et al., 2008). Feedback that reflects progress made, rather than just current status, appears to improve the impact of PM (Knaup et al., 2009). Adding elements such as more extensive clinical support tools and contingencies or consequences to standard PM increases the effectiveness of PM (Brooner & Kidorf, 2002; Harmon et al., 2007; Slade et al., 2008). Finally, it appears that less effective therapists had more benefit from using feedback, which suggests that PM may be a way to improve performance across a range of therapeutic skill levels (Anker et al., 2009).

In examining the results of the studies described, particularly the meta-analyses, it is important to consider potential confounding factors that may affect the interpretations of the research. Homogenous samples in the studies included in the meta-analyses, or lack of information about participants' characteristics, may limit generalizability of the results. Additionally, there were important differences among the studies included in the meta-analyses (e.g., outcomes measured, treatment settings, diagnoses treated, who received feedback), that may limit how well these studies can truly be compared and collapsed. The authors of the meta-analyses also provide varying amounts of information about possible moderator variables that may have affected their conclusions. Thus, inferences based on these studies should be made with caution until supported by further research.

Using PM measures in SUD treatment may require some adjustment and certainly demands further research. At this time, few PM measures specific to SUD treatment have been developed and well-validated. As Crits-Christoph et al. (2012) demonstrated, measures intended for PM in mental health may be adapted to fit SUD treatment needs. In addition to substance use, we suggest the inclusion of some indicators of recovery, such as lifestyle or behavioral changes. In order to fully assess symptom remission, questions about cravings, risk, and positive recovery signs such as coping, work, and positive social interactions may be useful. In addition, for an SUD population, assessing alliance may be particularly important due to the risk of dropout and the confrontational nature of some treatment strategies.

There are some important elements to keep in mind for PM in SUD treatment. Repeated measurement is critical, as it is not enough to simply measure at the beginning and end of treatment. Rather, PM should be incorporated routinely into the process of treatment. For this to be feasible, the measure must be brief enough to be acceptable to both patients and providers, and not intrude too much into session time. Feedback turnaround time must be rapid, as the risk for dropout from SUD treatment is especially high. We recommend that clinicians actively involve patients in a discussion of their progress and treatment plan.

Much of the research on PM in mental health treatment has relied on primarily White, female, mildly disturbed samples. In

SUD treatment, which may comprise a different population (e.g., gender, race, ethnicity, socioeconomic status, age), we must attend to cultural and other forms of diversity in determining the utility of PM in SUD treatment. SUD treatment settings often rely on a wide variety of providers, so measures and processes for PM in SUD treatment should be accessible to a variety of provider types. As Miller, Duncan, Sorrell, and Brown (2005), suggested, if using measures that have norms established for mental health treatment are adopted in SUD treatment, there is need for research on norms of initial scores and trajectories in SUD populations. It would be useful to discover whether there are different norms for SUD-specialty treatment versus other treatment settings.

There are a few recent examples of PM being implemented in the treatment of SUD. With the rising costs of health care, there is increasing concern that high quality and cost-effective care is being provided. For example, new practice guidelines within the U.S. Department of Veterans Affairs (VA) specify that measurement-based care is to be implemented in SUD treatment programs (VA/DoD, 2009). To facilitate the wide-spread adoption of measurement-based care for SUD, the VA developed the Brief Addiction Monitor (BAM), a 17-item measure that assesses substance use as well as risk and protective factors. An initial study of the BAM found that the measure possesses good psychometric properties and predicted retention in treatment (Cacciola et al., 2012). Under new VA policy, the BAM is to be administered to SUD patients shortly after intake to treatment and at least once for follow-up 30–60 days later.

PM efforts have already been implemented in several large mental health organizations and managed care companies, for example, Massachusetts Behavioral Health Partnership; Community Health and Counseling Services in Maine; and Pacifi-Care Behavioral Health, Inc., based in California. These organizations label the effort as "outcomes management." The goals appear to be to improve quality of care, and ensure a standard of care in these agencies. However, there may be some appropriate concern about the concept of pay for performance, in which clinicians would be paid according to their results in treatment, which is only partly the responsibility of the clinician. In an interesting take on this idea, PacifiCare Behavioral Health instituted its ALERT clinical information system in 1999, and since 2002 has authorized additional sessions for cases in which the therapist conducts outcome monitoring, regardless of the scores on the questionnaire (Brown, Lambert, Jones, & Minami, 2005). When PacifiCare became part of United HealthCare/Optum, a national managed health care company, they continued to use the ALERT (Algorithms for Effective Reporting and Treatment) system to track patient functioning and progress.

It is apparent from the research described above that PM has the potential to significantly improve substance abuse treatment. It may increase client engagement in his or her own care, provide a quantitative measure of treatment progress, and alert the clinician to possible dropout or treatment failure. Treatment of substance use disorders faces many challenges, and having additional effective tools for use in treatment would be highly beneficial to the field. There is current need for research to assess the application of established measures for use in SUD treatment. There is also need for assessment of the impact of the

many measures that have been developed specifically for SUD treatment. This research should include stronger validation studies in the form of randomized control trials to examine the effects of using PM on substance use outcomes, establish norms and trajectories of change, and define reliable change for those in SUD treatment. Research should examine the impact of monitoring alliance on the adherence and outcomes in SUD treatment. Further work is needed to identify the most effective measure or combination of measures to effect change. Research in this area should include outcomes beyond the last session of treatment in order to examine long-term effects and determine true cost effectiveness.

It is noteworthy that in both mental health and SUD PM, research has focused almost exclusively on White and African American populations. Important ethnic groups, such as American Indian, Mexican American, and Asian American groups have been almost entirely neglected. It is vital to conduct PM research with these populations in order to understand 1) the validity of measures among culturally diverse groups and 2) the effects of monitoring progress among diverse populations. Hall (2001) notes the lack of research on empirically supported therapies with ethnic minority groups and calls for more research on culturally sensitive therapies. He suggests that PM, as a patient-focused therapy, may be well suited to ethnic minority patients due to its attention to individual client variability and adjustment of treatment approach. However, norms for patient progress, against which individuals are compared to assess being on track, are based on fairly homogeneous samples. It is possible that due to differences in values, acculturation, language, and attitudes toward questionnaires, PM may vary in effectiveness and acceptability among different cultural groups. Possible differences among groups of varying socioeconomic status have also been overlooked. Future research is needed to evaluate the use of PM among patients of diverse backgrounds.

The great unknown in the studies of PM in mental health treatment is how monitoring and feedback serves to improve outcomes. Future research should investigate how clinicians use feedback, both in how they address monitoring results with patients and how they adjust treatment plans and interventions. Despite some instances of PM implementation already, the seriousness of substance abuse and its costs to society demand that we make use of the best tools to treat it; to do this, we must investigate how PM can contribute to these efforts.

References

Abanishe, D. R. (2008). *Cross-cultural comparison of the Outcome Questionnaire* (Doctoral dissertation). Ann Arbor, MI: ProQuest, UMI Dissertation Publishing.

American Psychological Association. (2011). *PracticeOUTCOMES: Measures for psychologists*. Retrieved from www.practiceoutcomes.apa.org

American Psychological Association Presidential Task Force on Evidence-Based Practice. (2006). Evidence-based practice in psychology. *American Psychologist, 61,* 271–285. doi:10.1037/0003-066X.61.4.271

Anker, M. G., Duncan, B. L., & Sparks, J. A. (2009). Using client feedback to improve couple therapy outcomes: A randomized clinical trial in a naturalistic setting. *Journal of Consulting and Clinical Psychology, 77,* 693–704. doi:10.1037/a0016062

Attkisson, C. C., & Zwick, R. (1982). The Client Satisfaction Questionnaire: Psychometric properties and correlations with service utilization

and psychotherapy outcome. *Evaluation and Program Planning, 5,* 233–237.

Barkham, M., Margison, F., Leach, C., Lucock, M., Mellor-Clark, J., Evans, C. . . . McGrath, G. (2001). Service profiling and outcomes benchmarking using the CORE-OM: Towards practice-based evidence in the psychological therapies. *Journal of Consulting and Clinical Psychology, 69,* 184–196. doi:10.1037/0022-006X.69.2.184

Beck, A. T., Steer, R. A., & Carbin, M. G. (1988). Psychometric properties of the Beck Depression Inventory: Twenty-five years of evaluation. *Clinical Psychology Review, 8,* 77–100. doi:10.1016/0272-7358(88)90050-5

Brooner, R. K., & Kidorf, M. (2002). Using behavioral reinforcement to improve methadone treatment participation. *Science & Practice Perspectives, 1,* 38–47. doi:10.1151/spp021138

Brooner, R. K., Kidorf, M. S., King, V. L., Stoller, K. B., Peirce, J. M., Bigelow, G. E., & Kolodner, K. (2004). Behavioral contingencies improve counseling attendance in an adaptive treatment model. *Journal of Substance Abuse Treatment, 27,* 223–232. doi:10.1016/j.jsat.2004.07.005

Brown, G. S., Lambert, M. J., Jones, E. R., & Minami, T. (2005). Identifying highly effective psychotherapists in a managed care environment. *The American Journal of Managed Care, 11,* 513–520.

Brown, T. A., Chorpita, B. F., Korotitsch, W., & Barlow, D. H. (1997). Psychometric properties of the Depression Anxiety Stress Scales (DASS) in clinical samples. *Behaviour Research and Therapy, 35,* 79–89. doi:10.1016/S0005-7967(96)00068-X

Butler, S. F., Budman, S. H., McGee, M. D., Davis, M. S., Cornelli, R., & Morey, L. C. (2006). Addiction severity assessment tool: Development of a self-report measure for clients in substance abuse treatment. *Drug and Alcohol Dependence, 80,* 349–360. doi:10.1016/j.drugalcdep.2005.05.005

Cacciola, J. S., Alterman, A. I., DePhilippis, D., Drapkin, M. L., Valadez, C., Jr., Fala, N. C. . . . McKay, J. R. (2012). Development and initial evaluation of the Brief Addiction Monitor (BAM). *Journal of Substance Abuse Treatment.* doi:10.1016/j.jsat.2012.07.013

Cameron, I. M., Cunningham, L., Crawford, J. R., Eagles, J. M., Eisen, S. V., Lawton, K. . . . Hamilton, R. J. (2007). Psychometric properties of the BASIS-24 (Behaviour and Symptom Identification Scale–Revised) mental health outcome measure. *International Journal of Psychiatry in Clinical Practice, 11,* 36–43. doi:10.1080/13651500600885531

Carlier, I. V. E., Meuldijk, D., Van Vliet, I. M., Van Fenema, E., Van der Wee, N. J. A., & Zitman, F. G. (2012). ROM and feedback on physical or mental health status: Evidence and theory. *Journal of Evaluation in Clinical Practice, 18,* 104–110. doi:10.1111/j.1365-2753.2010.01543.x

Carroll, K. M., & Rounsaville, B. J. (2002). On beyond urine: Clinically useful assessment instruments in the treatment of drug dependence. *Behaviour Research and Therapy, 40,* 1329–1344. doi:10.1016/S0005-7967(02)00038-4

Chao, R. C., Olson, A. N., Spaventa, K. Z., & Smith, C. (2010). *Multiculturally sensitive mental health scale (MSMHS): Development, factor analysis, reliability, and validity.* Retrieved from http://counselingout fitters.com/vistas/vistas10/Article_66.pdf

Crits-Christoph, P., Ring-Kurtz, S., Hamilton, J. L., Lambert, M. J., Gallop, R., McClure, B. . . . Rotrosen, J. (2012). A preliminary study of the effects of individual patient-level feedback in outpatient substance abuse treatment programs. *Journal of Substance Abuse Treatment, 42,* 301–309. doi:10.1016/j.jsat.2011.09.003

Deering, D. E., Sellman, J. D., Adamson, S. J., Horn, J., & Frampton, C. M. A. (2008). Development of a brief treatment instrument for routine clinical use with methadone maintenance treatment clients: The Methadone Treatment Index. *Substance Use & Misuse, 43,* 1666–1680. doi:10.1080/10826080802116098

Derogatis, L. R., & Melisaratos, N. (1983). The Brief Symptom Inventory: An introductory report. *Psychological Medicine, 13,* 595–605. doi:10.1017/S0033291700048017

Doucette, A. (2006). *Assessing service system performance: Treatment outcomes* [Power Point slides]. Retrieved from www.vsias.org/Handouts/2006/Doucette.Systems%20of%20Care.ppt

Duncan, B. L., Miller, S. D., & Sparks, J. A. (2004). *The heroic client: A revolutionary way to improve effectiveness through client-directed outcome-informed therapy (rev. ed.).* San Francisco, CA: Jossey-Bass.

Duncan, B. L., Miller, S. D., Sparks, J. A., Claud, D. A., Reynolds, L. R., Brown, J., & Johnson, L. D. (2003). The Session Rating Scale: Preliminary psychometric properties of a "working" alliance measure. *Journal of Brief Therapy, 3,* 3–12.

Evans, C., Connell, J., Barkham, M., Margison, F., McGrath, G., Mellor-Clark, J., & Audin, K. (2002). Towards a standardised brief outcome measure: Psychometric properties and utility of the CORE-OM. *The British Journal of Psychiatry, 180,* 51–60. doi:10.1192/bjp.180.1.51

Goodheart, C. D. (2011). Psychology practice: Design for tomorrow. *American Psychologist, 66,* 339–347. doi:10.1037/a0024222

Green, D., & Latchford, G. (2012). *Maximising the benefits of psychotherapy: A practice-based evidence approach.* Chichester, UK: Wiley-Blackwell.

Hall, G. C. N. (2001). Psychotherapy research with ethnic minorities: Empirical, ethical, and conceptual issues. *Journal of Consulting and Clinical Psychology, 69,* 502–510. doi:10.1037/0022-006X.69.3.502

Hamilton, J. D., & Bickman, L. (2008). A measurement feedback system (MFS) is necessary to improve mental health outcomes. *Journal of the American Academy of Child & Adolescent Psychiatry, 47,* 1114–1119. doi:10.1097/CHI.0b013e3181825af8

Hannan, C., Lambert, M. J., Harmon, C., Nielsen, S. L., Smart, D. W., Shimokawa, K., & Sutton, S. W. (2005). A lab test and algorithms for identifying clients at risk for treatment failure. *JCLP: In Session, 61,* 155–163.

Harmon, S. C., Lambert, M. J., Smart, D. M., Hawkins, E., Nielsen, S. L., Slade, K., & Lutz, W. (2007). Enhancing outcome for potential treatment failures: Therapist-client feedback and clinical support tools. *Psychotherapy Research, 17,* 379–392. doi:10.1080/10503300600702331

Hatfield, D., McCullough, L., Frantz, S. H. B., & Krieger, K. (2010). Do we know when our clients get worse? An investigation of therapists' ability to detect negative client change. *Clinical Psychology & Psychotherapy, 17,* 25–32.

Hatfield, D. R., & Ogles, B. M. (2004). The use of outcome measures by psychologists in clinical practice. *Professional Psychology: Research and Practice, 35,* 485–491. doi:10.1037/0735-7028.35.5.485

Hawkins, E. J., Baer, J. S., & Kivlahan, D. R. (2008). Concurrent monitoring of psychological distress and satisfaction measures as predictors of addiction treatment retention. *Journal of Substance Abuse Treatment, 35,* 207–216. doi:10.1016/j.jsat.2007.10.001

Howard, K. I., Moras, K., Brill, P. L., Martinovich, Z., & Lutz, W. (1996). Evaluation of psychotherapy: Efficacy, effectiveness, and patient progress. *American Psychologist, 51,* 1059–1064. doi:10.1037/0003-066X.51.10.1059

Institute of Medicine. (2006). *Improving the quality of health care for mental and substance use conditions: Quality chasm series.* Washington, DC: The National Academies Press.

Kidorf, M., Neufeld, K., & Brooner, R. K. (2004). Combining stepped-care approaches with behavioral reinforcement to motivate employment in opioid-dependent outpatients. *Substance Use & Misuse, 39,* 2215–2238. doi:10.1081/JA-200034591

King, V. L., Stoller, K. B., Hayes, M., Umbricht, A., Currens, M., Kidorf, M. S. . . . Brooner, R. K. (2002). A multicenter randomized evaluation of methadone medical maintenance. *Drug and Alcohol Dependence, 65,* 137–148. doi:10.1016/S0376-8716(01)00155-7

Knaup, C., Koesters, M., Schoefer, D., Becker, T., & Puschner, B. (2009). Effect of feedback of treatment outcome in specialist mental healthcare: Meta-analysis. *The British Journal of Psychiatry, 195,* 15–22. doi: 10.1192/bjp.bp.108.053967

Kraus, D. R., Seligman, D. A., & Jordan, J. R. (2005). Validation of a behavioral health treatment outcome and assessment tool designed for naturalistic settings: The Treatment Outcome Package. *Journal of Clinical Psychology, 61,* 285–314. doi:10.1002/jclp.20084

Kroenke, K., Spitzer, R. L., & Williams, J. B. (2001). The PHQ-9: Validity of a brief depression severity measure. *Journal of General Internal Medicine, 16,* 606–613. doi:10.1046/j.1525-1497.2001.016009606.x

Lambert, M. J. (2012). Helping clinicians to use and learn from research-based systems: The OQ-analyst. *Psychotherapy, 49,* 109–114. doi:10.1037/a0027110

Lambert, M. J., Burlingame, G. M., Umphress, V. J., Hansen, N. B., Vermeersch, D., Clouse, G., & Yanchar, S. (1996). The reliability and validity of the Outcome Questionnaire. *Clinical Psychology and Psychotherapy, 3,* 249–258. doi:10.1002/(SICI)1099-0879(199612)3:4<249::AID-CPP106>3.0.CO;2-S

Lambert, M. J., Morton, J. J., Hatfield, D. R., Harmon, C., Hamilton, S., Reid, R. C., . . . Burlingame, G. M. (2004). *Administration and scoring manual for the OQ-45.2 (Outcome Questionnaire).* Salt Lake City, UT: OQ Measures.

Lambert, M. J., & Shimokawa, K. (2011). Collecting client feedback. *Psychotherapy, 48,* 72–79. doi:10.1037/a0022238

Lambert, M. J., Whipple, J. L., Hawkins, E. J., Vermeersch, D. A., Nielsen, S. L., & Smart, D. W. (2003). Is it time for clinicians to routinely track patient outcome? A meta-analysis. *Clinical Psychology: Science and Practice, 10,* 288–301. doi:10.1093/clipsy.bpg025

Lawrinson, P., Copeland, J., & Indig, D. (2005). Development and validation of a brief instrument for ROM in opioid maintenance pharmacotherapy services: The Brief Treatment Outcome Measure (BTOM). *Drug and Alcohol Dependence, 80,* 125–133. doi:10.1016/j.drugalcdep.2005.04.001

Marlowe, D. B., Festinger, D. S., Dugosh, K. L., Benasutti, K. M., Fox, G., & Croft, J. R. (2012). Adaptive programming improves outcomes in drug court: An experimental trial. *Criminal Justice and Behavior, 39,* 514–532. doi:10.1177/0093854811432525

Marlowe, D. B., Festinger, D. S., Dugosh, K. L., Lee, P. S., & Benasutti, K. M. (2007). Adapting judicial supervision to the risk level of drug offenders: Discharge and 6-month outcomes from a prospective matching study. *Drug and Alcohol Dependence, 88,* S4–S13. doi:10.1016/j.drugalcdep.2006.10.001

Marsden, J., Farrell, M., Bradbury, C., Dale-Perera, A., Eastwood, B., Roxburgh, M., & Taylor, S. (2008). Development of the treatment outcomes profile. *Addiction, 103,* 1450–1460. doi:10.1111/j.1360-0443.2008.02284.x

Marsden, J., Gossop, M., Stewart, D., Best, D., Farrell, M., Lehmann, P. . . . Strang, J. (1998). The Maudsley Addiction Profile (MAP): A brief instrument for assessing treatment outcome. *Addiction, 93,* 1857–1868. doi:10.1046/j.1360-0443.1998.9312185711.x

McKay, J. R., Alterman, A. I., Cacciola, J. S., O'Brien, C. P., Koppenhaver, J. M., & Shepard, D. S. (1999). Continuing care for cocaine dependence: Comprehensive 2-year outcomes. *Journal of Consulting and Clinical Psychology, 67,* 420–427. doi:10.1037/0022-006X.67.3.420

McKay, J. R., Lynch, K. G., Shepard, D. S., & Pettinati, H. M. (2005). The effectiveness of telephone-based continuing care for alcohol and cocaine dependence: 24-month outcomes. *Archives of General Psychiatry, 62,* 199–207. doi:10.1001/archpsyc.62.2.199

McKay, J. R., Van Horn, D., Lynch, K. G., Ivey, M., Cary, M. S., Drapkin, M. . . . Plebani, J. G. (under review). An adaptive approach for identifying cocaine-dependent patients who benefit from extended continuing care. *Journal of Consulting and Clinical Psychology.*

McKay, J. R., Van Horn, D., Oslin, D., Ivey, M., Drapkin, M., Coviello, D. . . . Lynch, K. G. (2011). Extended telephone-based continuing care for alcohol dependence: 24 month outcomes and subgroup analyses. *Addiction, 106,* 1760–1769.PMCID: PMC3174323. doi:10.1111/j.1360-0443.2011.03483.x

McLellan, A. T., McKay, J. R., Forman, R., Cacciola, J., & Kemp, J. (2005). Reconsidering the evaluation of addiction treatment: From retrospective follow-up to concurrent recovery monitoring. *Addiction, 100,* 447–458. doi:10.1111/j.1360-0443.2005.01012.x

Miller, S. D. (2010, July 14). *Feedback informed treatment (FIT): A worldwide trend in behavioral health* [Web log]. Retrieved from http://scottdmiller.com/icce/feedback-informed-treatment-fit-a-worldwide-trend-in-behavioral-health/

Miller, S. D., Duncan, B. L., Brown, J., Sorrell, R., & Chalk, M. B. (2006). Using formal client feedback to improve retention and outcome: Making ongoing, real-time assessment feasible. *Journal of Brief Therapy, 5,* 5–22.

Miller, S. D., Duncan, B. L., Brown, J., Sparks, J. A., & Claud, D. A. (2003). The Outcome Rating Scale: A preliminary study of the reliability, validity, and feasibility of a brief visual analog measure. *Journal of Brief Therapy, 2,* 91–100.

Miller, S. D., Duncan, B. L., Sorrell, R., & Brown, G. S. (2005). The partners for change outcome management system. *JCLP/In Session, 61,* 199–208.

Murphy, S. A., Collins, L. M., & Rush, A. J. (2007). Customizing treatment to the patient: Adaptive treatment strategies. *Drug and Alcohol Dependence, 88,* S1–S3. doi:10.1016/j.drugalcdep.2007.02.001

Overall, J. E., & Gorham, D. R. (1988). The Brief Psychiatric Rating Scale (BPRS): Recent developments in ascertainment and scaling. *Psychopharmacology Bulletin, 24,* 97–99.

Overington, L., & Ionita, G. (2012). PM measures: A brief guide. *Canadian Psychology/Psychologie canadienne, 53,* 82.

Poston, J. M., & Hanson, W. E. (2010). Meta-analysis of psychological assessment as a therapeutic intervention. *Psychological Assessment, 22,* 203–212. doi:10.1037/a0018679

Pulford, J., Deering, D. E., Robinson, G., Wheeler, A., Adamson, S. J., Frampton, C. M. A. . . . Paton-Simpson, G. (2010). Development of a ROM instrument for use with clients in the New Zealand alcohol and other drug treatment sector: The Alcohol and Drug Outcome Measure (ADOM). *New Zealand Journal of Psychology, 39,* 35–45.

Raes, V., De Jong, C. A. J., De Bacquer, D., Broekaert, E., & De Maeseneer, J. (2011). The effect of using assessment instruments on substance abuse outpatients' adherence to treatment: A multi-centre randomised controlled trial. *BMC Health Services Research, 11,* 123–131. doi:10.1186/1472-6963-11-123

Reese, R. J., Norsworthy, L. A., & Rowlands, S. R. (2009). Does a continuous feedback system improve psychotherapy outcome? *Psychotherapy: Theory, Research, Practice, Training, 46,* 418–431. doi:10.1037/a0017901

Reese, R. J., Toland, M. D., Slone, N. C., & Norsworthy, L. A. (2010). Effect of client feedback on couple psychotherapy outcomes. *Psychotherapy: Theory, Research, Practice, Training, 47,* 616–630. doi:10.1037/a0021182

Simon, G. E., & Perlis, R. H. (2010). Personalized medicine for depression: Can we match patients with treatments? *The American Journal of Psychiatry, 167,* 1445–1455. doi:10.1176/appi.ajp.2010.09111680

Simpson, M., Lawrinson, P., Copeland, J., & Gates, P. (2009). The Alcohol Treatment Outcome Measure (ATOM): A new clinical tool for standardising outcome measurement for alcohol treatment. *Addictive Behaviors, 34,* 121–124. doi:10.1016/j.addbeh.2008.09.007

Slade, K., Lambert, M. J., Harmon, S. C., Smart, D. W., & Bailey, R. (2008). Improving psychotherapy outcome: The use of immediate electronic feedback and revised clinical support tools. *Clinical Psychology & Psychotherapy, 15,* 287–303. doi:10.1002/cpp.594

Sobell, M. B., & Sobell, L. C. (2000). Stepped care as a heuristic approach to the treatment of alcohol problems. *Journal of Consulting and Clinical Psychology, 68,* 573–579. doi:10.1037/0022-006X.68.4.573

Spitzer, R. L., Kroenke, K., Williams, J. B., & Lowe, B. (2006). A brief measure for assessing generalized anxiety disorder: The GAD-7. *Archives of Internal Medicine, 166,* 1092–1097. doi:10.1001/archinte.166.10.1092

United States Department of Veterans Affairs. (2009). *VA/DoD clinical practice guideline for management of substance use disorders (SUD),* Version 2.0.

United States Substance Abuse & Mental Health Services Administration. (1995). *TIP 14: State outcomes-monitoring systems for alcohol and other drug abuse treatment.* Retrieved from store. samhsa. gov/product/TIP-14-State-Outcomes-Monitoring-Systems-for-Alcohol-and-Other-Drug-Abuse-Treatment/BKD162

United States Substance Abuse & Mental Health Services Administration. (2013). *National registry of evidence-based programs and practices (NREPP).* Retrieved from www.nrepp.samhsa.gov/Index.aspx

Valenstein, M., Adler, D. A., Berlant, J., Dixon, L. B., Dulit, R. A., Goldman, B. . . .Sonis, W. A. (2009). Implementing standardized assessments in clinical care: Now's the time. *Psychiatric Services, 60,* 1372–1375. doi:10.1176/appi.ps.60.10.1372

Wing, J. K., Beevor, A. S., Curtis, R. H., Park, S. B., Hadden, S., & Burns, A. (1998). Health of the Nation Outcome Scales (HoNOS). *Research and development. The British Journal of Psychiatry, 172,* 11–18.

Youn, S. J., Kraus, D. R., & Castonguay, L. (2012). The treatment outcome package: Facilitating practice and clinically relevant research. *Psychotherapy, 49,* 115–122. doi:10.1037/a0027932

ORDER FORM

Start my 2013 subscription to *Professional Psychology: Research and Practice*® ISSN: 0735-7028

____ $59.00	**APA MEMBER/AFFILIATE**	_____
____ $161.00	**INDIVIDUAL NONMEMBER**	_____
____ $574.00	**INSTITUTION**	_____
	In DC and MD add 6% sales tax	_____
	TOTAL AMOUNT DUE	$ _____

Subscription orders must be prepaid. Subscriptions are on a calendar year basis only. Allow 4-6 weeks for delivery of the first issue. Call for international subscription rates.

SEND THIS ORDER FORM TO
American Psychological Association
Subscriptions
750 First Street, NE
Washington, DC 20002-4242

AMERICAN PSYCHOLOGICAL ASSOCIATION

Call **800-374-2721** or 202-336-5600
Fax **202-336-5568** : TDD/TTY **202-336-6123**
For subscription information,
e-mail: **subscriptions@apa.org**

❑ **Check enclosed** (make payable to APA)

Charge my: ❑ Visa   ❑ MasterCard   ❑ American Express

Cardholder Name _____

Card No. _____ Exp. Date _____

_____
Signature *(Required for Charge)*

Billing Address

Street _____

City _____ State _____ Zip ____

Daytime Phone _____

E-mail _____

Mail To

Name _____

Address _____

_____

City _____ State _____ Zip ____

APA Member # _____

PROA13