Patient Feedback as a Quality Improvement Strategy in an Acute Care, Inpatient Unit: An Investigation of Outcome and Readmission Rates

Robert J. Reese
University of Kentucky

Barry L. Duncan
The Heart and Soul of Change Project, Jensen Beach, Florida

Jonathan Kodet, Holly M. Brown, Carolyn Meiller, Minnah W. Farook, Alex J. Lengerich, Igor Vasilj, and Sang-Hee Hong
University of Kentucky

Robert T. Bohanske
Southwest Behavioral and Health Services, Phoenix, Arizona

High psychiatric readmission rates continue while evidence suggests that care is not perceived by patients as "patient centered." Research has focused on aftercare strategies with little attention to the inpatient treatment itself as an intervention to reduce readmission rates. Quality improvement strategies based on patient-centered care may offer an alternative. We evaluated outcomes and readmission rates using a benchmarking methodology with a naturalistic data set from an inpatient psychiatric facility ($N = 2,247$) that used a quality-improvement strategy called systematic patient feedback. Benchmarks were constructed using randomized clinical trials (RCTs) from inpatient treatment for depression, RCTs from patient feedback in outpatient settings, and national data on psychiatric hospital readmission rates. A systematic patient feedback system, the Partners for Change Outcome Management System (PCOMS), was used. Overall pre-post effect sizes were $d = 1.33$ and $d = 1.38$ for patients diagnosed with a mood disorder. These effect sizes were statistically equivalent to RCT benchmarks for feedback and depression. Readmission rates were 6.1% (30 days), 9.5% (60 days), and 16.4% (180 days), all lower than national benchmarks. We also found that patients who achieved clinically significant treatment outcomes were less likely to be readmitted. We tentatively suggest that a focus on real-time patient outcomes as well as care that is "patient centered" may provide a path toward lower readmission rates in addition to other evidence-based strategies after discharge.

Keywords: patient feedback, client feedback, quality improvement strategy, monitoring treatment outcome

Psychiatric inpatient care is increasingly emphasizing stabilization and referral to outpatient care, resulting in shorter stays (Glick, Sharfstein, & Schwartz, 2011). Concurrently, readmission

rates have received increased scrutiny as a marker of subquality and inefficient treatment (Moran Company, 2013; Patient Protection & Affordable Care Act, 2010). Whether readmission rates are a valid quality measure for psychiatric hospitalization remains controversial given the complexity of variables involved, but concerns about psychiatric readmissions appear to be justified. For example, adult 30-day psychiatric readmissions rates range from 8.8% for state hospitals (Substance Abuse and Mental Health Services Administration [SAMHSA], 2014) to 15% for psychiatric hospitals considered together (Moran Company, 2013). Another study looking more specifically at diagnosis (Heslin & Weiss, 2015) reported a 9%–15% 30-day readmission rate at a cost of $7,200 per episode for mood disorders, and a 15.7%–22.4% rate at a cost of $8,600 for psychotic disorders.

Gaynes et al. (2015) compared four core management strategies to reduce psychiatric readmissions: length of stay, transition support services (i.e., care provided as the individual moves to outpatient care), short-term alternatives (i.e., outpatient care), and long-term approaches (e.g., Assertive Community Treatment [ACT]). Of the 64 studies reviewed, ACT emerged as the most supported strategy while only two investigations addressed inpatient treatment, both of which focused on length of stay. There is

some evidence, that psychosocial interventions provided during inpatient care can reduce readmission rates (Herz et al., 2000; Owen, Speight, Sarsam, & Sellwood, 2015; Veltro et al., 2008), but research efforts, have largely focused on what happens after discharge and not the inpatient treatment itself.

Concomitantly, there has been a growing call for patient-centered care, or care that is "respectful of and responsive to individual patient preferences, needs, and values, and ensuring that patient values guide all clinical decisions" (Institute of Medicine, 2001, p. 6). For example, patient-centered care is now mandated within U.S. Department of Veterans Affairs inpatient psychiatric facilities (U.S. Department of Veterans Affairs, Veterans Health Administration, 2013). Preliminary evidence (Zuehlke, Kotecki, Kern, Sholty, & Hauser, 2016) has indicated positive benefit for both patients and staff. More generally, Epstein et al. (2010) noted that there is ample evidence that patient-centered care "improves patient satisfaction, quality of care, and health outcomes while reducing health care costs and disparities in health care" (p. 1489). Highlighting the need for patient-centered care in psychiatric hospitals, Ortiz (2014) examined 11,778 Inpatient Consumer Surveys distributed at 67 psychiatric hospitals. The "rights" domain, addressing the ability of patients to complain, refuse treatment, and not fear retaliation, scored the lowest across hospitals. Ortiz (2014) suggested that "this study underscores the urgency for hospitals to develop strategies to immediately improve communication with patients" (p. 309).

A quality improvement strategy that could potentially address readmission rates as well as the move toward patient-centered care is the Partners for Change Outcome Management System (PCOMS; Duncan, 2012, 2014; Duncan & Reese, 2015). PCOMS is included in the Substance Abuse and Mental Health Services Administration (SAMHSA) National Registry of Evidence-Based Programs and Practices. It uses two 4-item scales, one focusing on outcome (the Outcome Rating Scale, ORS; Miller, Duncan, Brown, Sparks, & Claud, 2003) and the other assessing the therapeutic alliance (the Session Rating Scale, SRS; Duncan et al., 2003). The ORS is typically administered at the beginning of a treatment session/meeting and the scores can be used to help frame the patient's presenting concerns and to better understand their perceived distress. The SRS is administered at the conclusion of a therapeutic encounter and affords the patient the opportunity to provide input on the quality of the encounter and the therapeutic alliance. Both measures offer the opportunity to promote collaborative work and to give the patient a clear voice in the treatment process. PCOMS and other feedback systems are theorized to be effective for two reasons. First, getting feedback from patients directly engages patients in an ongoing process of measuring and discussing both progress and the alliance. Second, PCOMS includes a real-time comparison to normative data that includes an expected treatment response to gauge progress and signal when change is not occurring as predicted. With this alert, clinicians and patients have an opportunity to shift focus, revisit goals, or alter interventions before a negative outcome ensues. PCOMS has demonstrated significant treatment gains for feedback over treatment as usual in five randomized clinical trials (Anker, Duncan, & Sparks, 2009; Reese, Norsworthy, & Rowlands, 2009; Reese, Toland, Slone, & Norsworthy, 2010: Schuman, Slone, Reese, & Duncan, 2015; Slone, Reese, Matthews-Duval, & Kodet, 2015). Given that inpatient treatment gains can reduce readmission rates

(e.g., Veltro et al., 2008), and PCOMS has been shown to improve treatment outcomes, PCOMS utilization on an inpatient unit may have an impact on readmission rates.

The purpose of this study was to evaluate the effectiveness and readmission rates of services provided to racially and ethnically diverse patients at or below the federal poverty line at a 32-bed acute care, psychiatric facility that implemented PCOMS as a quality improvement strategy. Three related questions guided our analyses. First, is treatment provided at this acute care psychiatric facility serving impoverished patients effective? Second, does a patient-centered, systematic feedback system offer a viable alternative to address readmission rates? In other words, does a focus on what happens during the inpatient treatment itself, rather than after discharge, have an impact on readmission rates? Finally, and more specifically, are patients with better, that is, reliable or clinically significant, inpatient treatment gains less likely to be readmitted?

We adopted a benchmarking methodology to address our questions. Benchmarking permits comparison of treatments delivered in noncontrolled settings against a reliably determined effect size in clinical trials or meta-analyses of clinical trials (Merrill, Tolbert, & Wade, 2003; Minami, Wampold, Serlin, Kircher, & Brown, 2007). We hypothesized that the treatment offered in the current setting would be equivalent to treatment efficacy observed in clinical trials of inpatient treatment for depression. Second, we hypothesized that results attained in the current sample would be similar to benchmarks reported in randomized clinical trials of patient feedback. The third benchmark consisted of national data sets (Heslin & Weiss, 2015; Moran Company, 2013; SAMHSA, 2014, 2015) that evaluated readmission rates for community-based inpatient hospitals. We hypothesized that the current acute care unit would achieve lower readmission rates than those reported in national samples. Finally, we also hypothesized that reliable and clinically significant gains attained during the inpatient treatment episode would predict readmission, such that those who achieved reliable or clinically significant change would have lower readmission rates.

Method

Participants and Setting

Participants ($N = 2,247$) were patients in a community-based psychiatric facility. The majority were male (59.5%) and White (60.5%); Hispanics were the largest minority (19.3%) followed by African American (14.2%), American Indian/Alaska (2.9%), Middle Eastern (1.2%), multiracial (0.7%), Asian American (0.6%), and African (0.5%). The mean age was 35.68 years ($SD = 11.47$) and ranged from 18 to 67 years. About a third of the participants (33.4%) were court ordered. *Diagnostic and Statistical Manual of Mental Disorders* (4th ed., text rev; American Psychiatric Association, 2000) diagnoses included mood disorder (51.5%), schizophrenia and other psychotic disorder (39.8%), substance use disorder (4.9%), anxiety disorder (2.4%), or other (1.3%). The average length of stay was 8.67 days ($SD = 9.72$, range = 1 to 216 days).

The setting was a 32-bed, acute care, psychiatric hospital, part of the Southwest Behavioral Health Services (SBHS) system of care. SBHS is a nonprofit, comprehensive community behavioral health

organization providing services to people living in Maricopa (Phoenix), Mohave, Yavapa, Coconino, and Gila counties in Arizona. SBHS provides clinical services to a diverse group of Medicaid-insured clients at or below 100% of the federal poverty level. The data for this study were collected from adult discharged cases between 2012 and 2014. Patients received milieu treatment including daily group therapy, weekly individual psychotherapy, and ongoing pharmacotherapy. PCOMS was used twice a week to monitor and discuss treatment outcomes and therapeutic alliance, as well as at intake and discharge. Although a seemingly minimal intervention during a short-term inpatient hospitalization, PCOMS represented the key component of an agency-wide paradigm shift to individualized, patient-centered care and a marked contrast to the previous provider-centric culture.

Clinicians received 2 days (12 hr) of PCOMS training plus annual 1-day booster trainings. Although there were no fidelity checks, clinicians were expected to collect outcome data, and at-risk patients identified by the data were routinely discussed in regular supervision. SBHS did not mandate or monitor the treatment approach used by the providers but required that they use PCOMS.

Outcome Measure: The Outcome Rating Scale (ORS)

Psychiatric functioning and distress were assessed pre- and posttreatment using the Outcome Rating Scale (ORS; Miller et al., 2003), a self-report instrument designed to measure patient progress repeatedly throughout the course of treatment. The ORS assesses four dimensions: (1) Individual—personal or symptomatic distress or well-being, (2) Interpersonal—relational distress or well-being in intimate relationships, (3) Social—distress or well-being in work/school or in the larger social domain, and (4) Overall—general sense of well-being. The ORS translates these four dimensions into a visual analog format of four 10-cm lines, with instructions to place a mark on each line with low estimates to the left and high to the right. The four 10-cm lines add to a total score of 40. The score is the summation of the marks made by the patient to the nearest millimeter on each of the four lines, measured by a centimeter ruler or electronic system. Lower scores reflect more distress. The ORS clinic cutoff score is 25 (Miller et al., 2003), meaning scores below 25 are considered in the nonclinical range, and the reliable change index is 6 points (Duncan, 2014).

Multiple validation studies of the ORS (Bringhurst, Watson, Miller, & Duncan, 2006; Campbell & Hemsley, 2009; Miller et al., 2003; Reese, Toland, & Kodet, 2012) as well as efficacy studies have found that the ORS generates reliable scores. Coefficient alphas have ranged from .87 to .91 in validation studies and from .82 (Reese, Norsworthy, & Rowlands, 2009; individual psychotherapy) to .92 (Slone et al., 2015; group psychotherapy) in clinical studies. Research also suggests that the ORS generates valid scores as a measure of general distress. Three studies found evidence of concurrent validity for the ORS by comparing ORS scores to the Outcome Questionnaire—45 (Bringhurst et al., 2006; Campbell & Hemsley, 2009; Miller et al., 2003). Average bivariate correlations were .62 (range = .53–.74; Gillaspy & Murphy, 2011).

Benchmarking Procedures

Using the strategies outlined by Minami et al. (2008), we constructed three benchmarks. The first benchmark was constructed from a meta-analysis of 12 inpatient randomized clinical trials for depression (Cuijpers et al., 2011) for comparison to depressed patients in the current sample. We eliminated one study that did not use the Beck Depression Inventory (BDI). We selected this benchmark because an exhaustive literature review using PsycINFO and Medline databases revealed no other meta-analyses focused on treatment outcome of inpatient psychosocial interventions that included an intervention, sample, and outcome measure that corresponded with our sample to merit comparison. Therefore, for this benchmark we restricted our sample to only those with a diagnosis of depression ($n = 291$). The second benchmark was constructed from three previous feedback-randomized clinical trials (Anker et al., 2009; Reese et al., 2009, 2010) that utilized PCOMS for comparison to the full inpatient SBHS sample that utilized PCOMS. The third benchmark consisted of four national data sets (Heslin & Weiss, 2015; Moran Company, 2013; SAMHSA, 2014, 2015) that evaluated the readmission rates for state and community-based inpatient hospitals at 30, 60, or 180 days. The third benchmark relied only on readmission rates for descriptive comparison and were not subject to the benchmark construction process described below.

Calculation of SBHS and benchmark effect sizes. Pre-post effect sizes (Cohen's d) of change in patient ORS or BDI scores of global distress were calculated using baseline (pretreatment), endpoint (posttreatment), and standard deviations. Consistent with recent benchmarking studies (e.g., Minami et al., 2008; Reese et al., 2014) we utilized the formula ($d_i = [1–3/(4n − 5)] [(M\text{post} − M\text{pre})/SD\text{pre}]$) for calculating unbiased effect sizes, d, where n is the sample size, SDpre is the pretreatment standard deviation, and Mpre and Mpost are the pre- and posttreatment means. For the inpatient depression and feedback benchmarks, we utilized the formulas from Minami et al. for aggregating the effect sizes across studies.

Benchmark range-null hypothesis testing. Similar to other benchmarking studies (e.g., Minami et al., 2008, 2009; Reese et al., 2014) we set an a priori ±10% range below the benchmark effect sizes as a "good enough" indicator of clinical equivalence for our naturalistic data set. In other words, a clinically trivial difference is found when the SBHS sample and benchmark effect sizes differ by 10% or less. Additionally, an a priori range permits calculation of critical values for statistical testing. Given the range-null hypothesis testing method of benchmarking, critical values must be calculated at the minimum and maximum points of this range in order to allow for statistical testing while maintaining an overall Type I error rate of $\alpha = .05$. Benchmarking range-null hypothesis testing follows a noncentral t statistic where $v = N − 1$ degrees of freedom, δ_{CF} SBHS sample effect size, $\lambda = \sqrt{N} (\delta_D − d_{10\%}) =$ the noncentrality parameter, and a normal distribution is approximated. Following Minami et al. (2008), we utilized 95th percentile test statistics, $t_{(TE)v,\lambda:.95}$ for treatment efficacy (TE) comparisons. The above test statistics are then utilized to calculate exact critical values, $d_{CV(TE)}$, determined by a normal approximation of the distribution. For the SBHS effect sizes, δ_{CF}, to claim clinical equivalence to the treatment efficacy benchmark, the critical value $d_{CV(TE)}$ needs to exceed

$$d_{\mathrm{CV(TE)}} = \frac{t_{v,\lambda:95}}{\sqrt{N}},$$

where $t_{v,\lambda:95}$ is the 95th percentile value of the noncentral t distribution and $\lambda = \sqrt{N}(\delta_{CF} - d_{10\%})$ is the noncentrality parameter.

Results

Preliminary Analyses

We first evaluated whether there were differences in gender, race/ethnicity, diagnosis, and voluntary admission with regard to treatment outcomes and readmission rates. For gender, an analysis of variance using pre-post ORS change scores as the dependent variable did not indicate treatment outcome differences, $F(1, 2245) = 0.16$, $p = .69$, partial $\eta^2 = .00$. Readmission rates were, however, significantly different, $\chi^2(1, N = 2246) = 14.63$, $p < .001$. Men were more likely to be readmitted within 180 days (18.8%) compared to women (12.8%). For race/ethnicity, there were no significant pre-post ORS change score differences, $F(7, 2236) = 0.83$, $p = .56$, partial $\eta^2 = .003$. Readmission rates were also not statistically significant for race/ethnicity, $\chi^2(7, N = 2243) = 13.77$, $p = .06$.

We also evaluated whether diagnosis resulted in different treatment outcomes and readmission rates (see Table 1). Diagnoses did not have different outcomes, $F(4, 2242) = 1.70$, $p = .15$, partial $\eta^2 = .003$. Readmission rates, however, were significantly different, $\chi^2(4, N = 2247) = 41.33$, $p < .001$. Patients diagnosed with schizophrenia and other psychotic disorders (22.3%) had the highest readmission rates.

Lastly, we compared clients who were court-ordered to receive treatment to patients admitted voluntarily. Voluntarily admitted patients demonstrated significantly more pre-post ORS score improvement than court-ordered clients, $F(1, 2246) = 37.89$, $p < .001$, partial $\eta^2 = .02$, as well as significantly lower readmission rates (11.6% vs. 26.6%), $\chi^2(1, N = 2248) = 75.84$, $p < .001$. Although statistically significant differences were observed with regard to improvement on the ORS, the effect sizes were small and only accounted for approximately 2% of the variance. Readmission benchmarks were also not separated by voluntary/court-ordered admission so we did not separate the SBHS sample.

Treatment Outcome Benchmark Comparison

Mean pre-post ORS scores for the entire SBHS sample ($N = 2249$) were $M_{\mathrm{pre}} = 18.19$ ($SD = 9.70$) and $M_{\mathrm{post}} = 31.06$ ($SD = 8.40$); for the depressed sample ($n = 291$) pre-post ORS scores were $M_{\mathrm{pre}} = 16.75$ ($SD = 9.59$) and $M_{\mathrm{post}} = 30.00$ ($SD = 9.08$). The

Table 2

Effect Size Comparisons to Depression and ORS Benchmark RCT Studies

Sample/study	N	Outcome measure	d
SBHS inpatient (all)	2,247	ORS	1.33
SBHS inpatient (depressed patients)	291	ORS	1.38
Inpatient depression (Cuijpers et al., 2011)	201	BDI-II	0.70
ORS outpatient (Reese et al., 2014)	408	ORS	1.13

Note. $d = [1 - 3/(4n - 5)] (M\mathrm{post} - M\mathrm{pre})/SD\mathrm{pre}$. RCT = randomized clinical trial; SBHS = Southwest Behavioral Health Services; ORS = Outcome Rating Scale; BDI = Beck Depression Inventory.

effect sizes are comparable to the benchmarks (see Table 2). We statistically compared the SBHS depressed sample to the Cuijpers et al. (2011) meta-analysis with depressed inpatients and found equivalence ($t = 23.54$, $\lambda = 10.75$, $p < .001$). Equivalence was also found when the full SBHS sample was compared to the three PCOMS studies ($t = 63.07$, $\lambda = 48.23$, $p < .001$).

Readmission Benchmark Comparison

Readmission rates were all descriptively lower for the SBHS sample compared to the three national benchmarks at 30, 60, and 180 days (see Table 3). SBHS patients who achieved clinically significant change on the ORS ($n = 1,398$; intake score < 25, postscore > 25, and increase of at least 6 points) had significantly lower readmission rates than SBHS patients who did not achieve clinically significant change at 180 days (14.8% vs. 18.9%), $\chi^2(1, N = 2,248) = 6.60$, $p = .01$, but not at 30 days (5.4% vs. 7.3%), $\chi^2(1, N = 2,248) = 3.44$, $p = .06$. Patients who achieved reliable change ($n = 1,665$; increase of at least 6 points on the ORS) were also less likely to be readmitted at 180 days (15.2% vs. 19.7%), $\chi^2(1, N = 2,248) = 6.47$, $p = .01$, and 30 days (5.4% vs. 8.1%), $\chi^2(1, N = 2,248) = 5.32$, $p = .01$.

Discussion

To our knowledge this is the first benchmarking study of psychiatric inpatient effectiveness that included the relationship to readmission rates. Preliminary analyses were conducted on patient demographic variables such as race/ethnicity, gender, diagnoses, and voluntary admission. The current study found that demographic variables had little impact on effectiveness. Involuntary patients fared significantly worse regarding readmission rates than

Table 1

Treatment Outcomes and Readmission Rates by Diagnostic Category

Diagnosis	Sample size, n	Pre-ORS, M (SD)	Post-ORS, M (SD)	Effect size d	180-day readmission rate, %
Mood disorder	1,158	17.31 (9.39)	30.71 (8.62)	1.43	12.3
Schizophrenia & other psychotic disorder	895	19.26 (10.07)	31.62 (8.17)	1.23	22.3
Alcohol/substance use disorder	111	17.96 (9.65)	29.90 (7.71)	1.23	15.3
Anxiety disorder	54	17.72 (8.20)	30.10 (9.09)	1.49	14.8
Other disorder	29	21.69 (9.72)	33.40 (6.83)	1.17	3.4

Note. ORS = Outcome Rating Scale. $d = [1 - 3/(4n - 5)] (M\mathrm{post} - M\mathrm{pre})/SD\mathrm{pre}$.

Table 3
Readmission Rate Comparisons to National Benchmark Data

Source	Readmission rate 30 days	Readmission rate 60 days	Readmission rate 180 days
SBHS	6.1%	9.5%	16.4%
SAMHSA (2015)	8.4%		19.1%
SAMHSA (2014)	8.8%		20.3%
Moran Company (2013)	15.0%	20.8%	
Heslin & Weiss (2015)	15.0%		

Note. SBHS = Southwest Behavioral Health Services; SAMHSA = Substance Abuse and Mental Health Services Administration.

voluntary clients. An interesting "nonfinding" was that diagnosis had little impact on differential outcome as well, although diagnosis was related to readmission rates in expected ways with schizophrenia and psychotic disorders having higher readmission rates than mood disorders.

One of the goals of this study was to evaluate how a public acute-care inpatient unit using a quality improvement strategy, PCOMS, compared to benchmarks from a meta-analysis of clinical trials of both inpatient treatment of depression and systematic feedback. A comparison of effect size estimates revealed that treatment for depression provided in this particular public inpatient setting is likely effective; treatment in this study generated effect size estimates that were similar (in fact superior) to those observed in clinical trials of major depression conducted in inpatient settings. In addition, the total sample effect size estimates were also comparable to RCTs evaluating systematic patient feedback. These findings are similar to those from another benchmarking study (N = 5,179) of outpatient services at a large public behavioral health agency (Reese, Duncan, Bohanske, Owen, & Minami, 2014) that had implemented PCOMS. The investigation also reported comparable outcomes with randomized clinical trials of both depression and feedback.

The acute-care inpatient unit examined in this study also achieved descriptively lower readmission rates than national readmission benchmarks at 30, 60, and 180 days. Regarding reliable or clinically significant change occurring during treatment and the relationship to readmission rates, patients who changed reliably had significantly lower readmission rates at both 30 and 180 days than patients who did not change reliably. Patients who achieved clinically significant change had significantly lower readmission rates at 180 days than those who did not, and trended toward lower rates at 30 days.

We tentatively suggest that a focus on real-time patient outcome as well as care that is "patient centered" (IOM, 2001, p. 6) may provide a path toward lower readmission rates in addition to other evidence-based psychosocial strategies after discharge (e.g., ACT models, intensive outpatient treatment) to reduce readmissions. In addition to the benefits of identifying patients at risk for a negative outcome, PCOMS is a patient-centered approach that is designed to promote consumer engagement that explicitly values patient input in the treatment process. This methodology involves consumers in all decisions that affect their care and directly addresses concerns of patient communication (Ortiz, 2014), promoting a more patient-centered culture (Bohanske & Franczak, 2010). Psychiatric readmission, however, is very complex and many environmental, social, and patient variables are relevant. Aftercare

arrangements such as discharge to other treatments, programs, or community resources offer significant confounds that preclude any definitive conclusions about readmission rates. Consequently, isolating the effects of systematic feedback and patient change during treatment from the myriad of variables at play and suggesting that it is responsible for lower readmission rates is not possible from the results of this study. The addition of systematic patient feedback only provides an incomplete but promising explanation requiring more study.

Limitations of the current study warrant caution in interpreting the results. An important limitation is the use of just one outcome measure, the Outcome Rating Scale. The ORS is by design brief and therefore feasible for routine clinical use. Although psychometrically acceptable, it does not yield the breadth or depth of information found in longer measures like the Symptom Check List—90–R (Derogatis, 1994) or the diagnostic specificity found in measures like the Beck Depression Inventory (2nd ed.; Beck, Steer, & Brown, 1996). Had other outcomes measures been used, different results may have occurred. In addition, the limitations of benchmarking detailed by Minami et al. (2008) are applicable here and also call for caution in interpreting the results. We cannot conclude that feedback improved outcomes or readmission rates at the SBHS site after implementing PCOMS, no data exist. Bohanske and Franczak (2010) have concluded that the transition to using PCOMS changed the treatment paradigm at their site and resulted in improved, more patient-centered care. Given that there are no benchmarks for effectiveness in natural inpatient settings, however, benchmarks constructed from efficacy in clinical trials are the best currently available and provide some preliminary evidence of effectiveness in inpatient settings.

The Gaynes et al. (2015) extensive review identified the following key factors in reducing psychiatric readmission: (a) sufficient inpatient care to address the acute presenting problem and stabilize psychiatric status; (b) an adequate discharge plan and delivery of support services to transition care from an inpatient to an outpatient setting; and (c) continuing short-term and (d) long-term outpatient services to allow the individual to remain in the community. Although preliminary and requiring more empirical investigation, this study tentatively suggests a fifth alternative: a patient-centered focus on engagement, benefit, and shared decision making via systematic feedback during inpatient treatment. It also suggests more attention to the psychological and collaborative aspects of "sufficient inpatient care" in addition to pharmacological intervention.

Benchmarking studies have provided the methodology to further narrow the split between research and practice. We hope that our study offers a demonstration of this possibility and encourages other looks at treatment in natural settings enabled by patient feedback and routine outcome management (Lambert, 2010). Readmission rates offer fertile ground for creative solutions and empirical investigation. Routine collection of outcome data, providing individualized, responsive services, and involving patients in decisions about their care holds promise to not only inform us about the effectiveness of treatment and the reduction of readmission rates but also offers a way operationalize the value of patient-centered care and perhaps reinvolve the more psychological aspects of inpatient care.

References

American Psychiatric Association. (2000). *Diagnostic and statistical manual of mental disorders* (4th ed., text rev.). Washington, DC: Author.

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. http://dx.doi.org/10.1037/a0016062

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

Beck, A. T., Steer, R. A., & Brown, G. K. (1996). *Beck Depression Inventory* (2nd ed. manual). San Antonio, TX: Psychological Corporation.

Becker, B. J. (1988). Synthesizing standardized mean-change measures. *British Journal of Mathematical and Statistical Psychology, 41,* 257–278. http://dx.doi.org/10.1111/j.2044-8317.1988.tb00901.x

Bohanske, R. T., & Franczak, M. (2010). Transforming public behavioral health care: A case example of consumer–directed services, recovery, and the common factors. In B. L. Duncan, S. D. Miller, B. E. Wampold, & M. A. Hubble (Eds.), *The heart and soul of change: Delivering what works in therapy* (2nd ed., pp. 299–322). Washington, DC: American Psychological Association.

Bringhurst, D. L., Watson, C. W., Miller, S. D., & Duncan, B. L. (2006). The reliability and validity of the Outcome Rating Scale: A replication study of a brief clinical measure. *Journal of Brief Therapy, 5*(1), 23–30.

Campbell, A., & Hemsley, S. (2009). Outcome Rating Scale and Session Rating Scale in psychological practice: Clinical utility of ultra-brief measures. *Clinical Psychologist, 13,* 1–9. http://dx.doi.org/10.1080/13284200802676391

Churchill, R., Hunot, V., Corney, R., Knapp, M., McGuire, H., Tylee, A., & Wessely, S. (2001). A systematic review of controlled trials of the effectiveness and cost-effectiveness of brief psychological treatments for depression. *Health Technology Assessment, 5,* 1–173.

Cuijpers, P., Clignet, F., van Meijel, B., van Straten, A., Li, J., & Andersson, G. (2011). Psychological treatment of depression in inpatients: A systematic review and meta-analysis. *Clinical Psychology Review, 31,* 353–360. http://dx.doi.org/10.1016/j.cpr.2011.01.002

Dai, B., Li, J., & Cuijpers, P. (2011). Psychological treatment of depressive symptoms in Chinese elderly inpatients with significant medical comorbidity: A meta-analysis. *BMC Psychiatry, 11,* 92–100. http://dx.doi.org/10.1186/1471-244X-11-92

Derogatis, L. R. (1994). *SCL-90-R: Administration, scoring and procedures manual* (3rd ed.). Minneapolis, MN: Nation Computer Systems.

Duncan, B. (2012). The partners for change outcome management system (PCOMS): The heart and soul of change project. *Canadian Psychology, 53,* 93–104. http://dx.doi.org/10.1037/a0027762

Duncan, B. (2014). *On becoming a better therapist: Evidence-based practice one client at a time* (2nd ed.). Washington, DC: American Psychological Association. http://dx.doi.org/10.1037/14392-000

Duncan, B., Miller, S., Sparks, J., Claud, D., Reynolds, L., 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.

Duncan, B. L., & Reese, R. J. (2015). The Partners for Change Outcome Management System (PCOMS) revisiting the client's frame of reference. *Psychotherapy, 52,* 391–401. http://dx.doi.org/10.1037/pst0000026

Durbin, J., Lin, E., Layne, C., & Teed, M. (2007). Is readmission a valid indicator of the quality of inpatient psychiatric care? *Journal of Behavioral Health Services & Research, 34,* 137–150. http://dx.doi.org/10.1007/s11414-007-9055-5

Epstein, R. M., Fiscella, K., Lesser, C. S., & Stange, K. C. (2010). Why the nation needs a policy push on patient-centered health care. *Health Affairs, 29,* 1489–1495.

Finnerty, M. (2012). *The quality concern: Behavioral health inpatient readmissions* [Powerpoint slides]. Retrieved from https://www.omh.ny.gov/omhweb/psyckes_medicaid/initiatives/hospital/learning_collaborative_2013/quality_concern.pdf

Gaynes, B. N., Brown, C., Lux, L. J., Ashok, M., Coker-Schwimmer, E., Hoffman, V., . . . Viswanathan, M. (2015). *Management strategies to reduce psychiatric readmissions* (Technical brief No. 21; AHRQ Publication No. 15-EHC018-EF). Rockville, MD: Agency for Healthcare Research and Quality. Retrieved from http://www.effectivehealthcare.ahrq.gov/reports/final.cfm

Gerolamo, A. M. (2004). State of the science: Outcomes of acute inpatient psychiatric care. *Archives of Psychiatric Nursing, 18,* 203–214. http://dx.doi.org/10.1016/j.apnu.2004.09.003

Gillaspy, J. A., & Murphy, J. J. (2011). The use of ultra-brief client feedback tools in SFBT. In C. W. Franklin, T. Trepper, E. McCollum, & W. Gingerich (Eds.), *Solution-focused brief therapy*. New York: Oxford University Press.

Glick, I. D., Sharfstein, S. S., & Schwartz, H. I. (2011). Inpatient psychiatric care in the 21st century: The need for reform. *Psychiatric Services, 62,* 206–209. http://dx.doi.org/10.1176/ps.62.2.pss6202_0206

Hedges, L. V., & Olkin, I. (1985). *Statistical methods for meta-analysis*. San Diego, CA: Academic Press.

Hemminger, H. (2012). *Adult inpatient psychiatric readmissions data* [Powerpoint slides]. Retrieved from http://www.qualitycareforme.com/documents/aps-maine_data_forum_presentation-adultinpatpsychreadmit_3-29-12.pdf

Herz, M. I., Lamberti, J. S., Mintz, J., Scott, R., O'Dell, S. P., McCartan, L., & Nix, G. (2000). A program for relapse prevention in schizophrenia: A controlled study. *Archives of General Psychiatry, 57,* 277–283. http://dx.doi.org/10.1001/archpsyc.57.3.277

Heslin, K. C., & Weiss, A. J. (2015). *Hospital readmissions involving psychiatric disorders, 2012 (HCUP statistical brief no. 189)*. Rockville, MD: Agency for Healthcare Research and Quality. Retrieved from http://www.hcup-us.ahrq.gov/reports/statbriefs/sb189-Hospital-Readmissions-Psychiatric-Disorders-2012.pdf

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

Jiang, H. J., & Wier, L. M. (2010). *All-cause hospital readmissions among non-elderly Medicaid patients, 2007: Statistical brief no. 89. Healthcare Cost and Utilization Project Statistical Briefs*. Rockville, MD: Agency for Health Care Policy and Research.

Lambert, M. J. (2010). Yes, it is time for clinicians to monitor treatment outcome. In B. L. Duncan, S. C. Miller, B. E. Wampold, & M. A. Hubble (Eds.), *The heart and soul of change: Delivering what works in therapy* (2nd ed., pp. 239–266). Washington, DC: American Psychological Association.

Lambert, M. J., Morton, J. J., Hatfield, D., Harmon, C., Hamilton, S., Reid, R. C., . . . Burlingame, G. M. (2004). *Administration and scoring manual for the OQ-45*. Orem, UT: American Professional Credentialing Services.

Lindsey, M., Patterson, W., Ray, K., & Roohan, P. (2007). *Potentially preventable hospital readmissions among Medicaid recipients with mental health and/or substance abuse conditions compared with all others: New York state, 2007* (Statistical brief no. 2). New York, NY: New York State Department of Health.

Merrill, K. A., Tolbert, V. E., & Wade, W. A. (2003). Effectiveness of cognitive therapy for depression in a community mental health center: A benchmarking study. *Journal of Consulting and Clinical Psychology, 71,* 404–409. http://dx.doi.org/10.1037/0022-006X.71.2.404

Miller, S. D., Duncan, B. L., Brown, J., Sparks, J., & Claud, D. (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.

Minami, T., Davies, D. R., Tierney, S. C., Bettmann, J. E., McAward, S. M., Averill, L. A., . . . Wampold, B. E. (2009). Preliminary evidence on the effectiveness of psychological treatments delivered at a university counseling center. *Journal of Counseling Psychology, 56,* 309–320. http://dx.doi.org/10.1037/a0015398

Minami, T., Serlin, R. C., Wampold, B. E., Kircher, J. C., & Brown, G. J. (2008). Using clinical trials to benchmark effects produced in clinical practice. *Quality & Quantity: International Journal of Methodology, 42,* 513–525. http://dx.doi.org/10.1007/s11135-006-9057-z

Minami, T., Wampold, B. E., Serlin, R. C., Kircher, J. C., & Brown, G. S. J. (2007). Benchmarks for psychotherapy efficacy in adult major depression. *Journal of Consulting and Clinical Psychology, 75,* 232–243. http://dx.doi.org/10.1037/0022-006X.75.2.232

Moran Company. (2013). *Medicare psychiatric patients & readmissions in the inpatient psychiatric facility prospective payment system.* Retrieved from https://www.naphs.org/resourcemanager/handlerresource.aspx?id=408

Ortiz, G. (2014). Examining patients' perceptions of care to identify opportunities for quality improvement in psychiatric inpatient hospitals. *The Patient: Patient- Centered Outcomes Research, 7,* 301–312. http://dx.doi.org/10.1007/s40271-014-0052-5

Owen, M., Speight, T., Sarsam, M., & Sellwood, W. (2015). Group CBT for psychosis in acute care: A review of outcome studies. *Cognitive Behaviour Therapy, 8*(e2).

Patient Protection and Affordable Care Act, 42 U.S.C. § 18001 (2010).

Probst, T., Lambert, M. J., Dahlbender, R. W., Loew, T. H., & Tritt, K. (2014). Providing patient progress feedback and clinical support tools to therapists: Is the therapeutic process of patients on-track to recovery enhanced in psychosomatic in-patient therapy under the conditions of routine practice? *Journal of Psychosomatic Research, 76,* 477–484. http://dx.doi.org/10.1016/j.jpsychores.2014.03.010

Reese, R. J., Duncan, B. L., Bohanske, R. T., Owen, J. J., & Minami, T. (2014). Benchmarking outcomes in a public behavioral health setting: Feedback as a quality improvement strategy. *Journal of Consulting and Clinical Psychology, 82,* 731–742. http://dx.doi.org/10.1037/a0036915

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. http://dx.doi.org/10.1037/a0017901

Reese, R. J., Toland, M. D., & Kodet, J. (2012, August). *Validity of a psychotherapy outcome measure: The Outcome Rating Scale.* Poster presented at the annual meeting of the American Psychological Association, Orlando, FL. http://dx.doi.org/10.1037/e652472012-001

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. http://dx.doi.org/10.1037/a0021182

Robert Wood Johnson Foundation. (2013). *The revolving door: A report on U.S. hospital readmissions.* Retrieved from http://www.rwjf.org/content/dam/farm/reports/reports/2013/rwjf404178

Shimokawa, K., Lambert, M. J., & Smart, D. W. (2010). Enhancing treatment outcome of patients at risk of treatment failure: Meta-analytic and mega-analytic review of a psychotherapy quality assurance system. *Journal of Consulting and Clinical Psychology, 78,* 298–311. http://dx.doi.org/10.1037/a0019247

Shojania, K. G., & Grimshaw, J. M. (2005). Evidence-based quality improvement: The state of the science. *Health Affairs, 24,* 138–50.

Schuman, D. L., Slone, N. C., Reese, R. J., & Duncan, B. L. (2015). Using client feedback to improve outcomes in group psychotherapy with soldiers referred for substance abuse treatment. *Psychotherapy Research, 25,* 396–407. http://dx.doi.org/10.1080/10503307.2014.900875

Slone, N. C., Reese, R. J., Mathews-Duvall, S., & Kodet, J. (2015). Evaluating the efficacy of client feedback in group psychotherapy. *Group Dynamics: Theory, Research, and Practice, 19,* 122–136. http://dx.doi.org/10.1037/gdn0000026

Substance Abuse and Mental Health Services Administration (SAMHSA). (2014). *New Jersey 2013 Mental Health National Outcomes Measures (NOMS): SAMHSA Uniform Reporting System.* Rockville, MD: Office of Applied Studies, SAMHSA. Retrieved from http://www.samhsa.gov/data/sites/default/files/URSTables2014/NewJersey.pdf

Substance Abuse and Mental Health Services Administration (SAMHSA). (2015). *New Jersey 2014 Mental Health National Outcomes Measures (NOMS): SAMHSA Uniform Reporting System.* Rockville, MD: Office of Applied Studies, SAMHSA. Retrieved from http://www.samhsa.gov/data/sites/default/files/URSTables2013/NewJersey.pdf

Trotta, C., Lang, U. E., & Schneeberger, A. R. (2013). Mental health care across two nations—Switzerland and the United States of America. *Swiss Archives of Neurology and Psychiatry, 164,* 165–169.

U.S. Department of Veterans Affairs, Veterans Health Administration. (2013). *Handbook 1160.06. Inpatient mental health services handbook.* Retrieved from http://www.va.gov/vhapublications/ViewPublication.asp?pub_ID=2937

Veltro, F., Vendittelli, N., Oricchio, I., Addona, F., Avino, C., Figliolia, G., & Morosini, P. (2008). Effectiveness and efficiency of cognitive-behavioral group therapy for inpatients: 4-year follow-up study. *Journal of Psychiatric Practice, 14,* 281–288. http://dx.doi.org/10.1097/01.pra.0000336755.57684.45

Weersing, V. R., & Weisz, J. R. (2002). Community clinic treatment of depressed youth: Benchmarking usual care against CBT clinical trials. *Journal of Consulting and Clinical Psychology, 70,* 299–310. http://dx.doi.org/10.1037/0022-006X.70.2.299

Zuehlke, J. B., Kotecki, R. M., Kern, S., Sholty, G., & Hauser, P. (2016). Transformation to a recovery-oriented model of care on a Veterans Administration inpatient unit. *Psychiatric Rehabilitation Journal, 39,* 361–363. http://dx.doi.org/10.1037/prj0000198