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## The impact of pay-for-performance on therapists' intentions to deliver high quality treatment

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### Abstract

This paper examined the extent to which assignment to a pay-for-performance (P4P) experimental condition impacted therapists' intentions to deliver high quality treatment and the extent to which therapists' intentions could be explained by the theory of planned behavior. Data were collected from 95 therapists who agreed to participate in a P4P experiment related to their implementation of an evidence-based treatment (EBT) for adolescents with substance use problems. Relative to those in the control condition, therapists in the P4P condition reported significantly greater intentions to achieve monthly competence ( $B = 1.41, p < .001$ ) and deliver a targeted threshold level of treatment to clients ( $B = 1.31, p < .001$ ). Additionally, therapists' intentions could be partially explained by the theory of planned behavior. Meta-analyses have found intentions to be one of the best predictors of behavior, thus these findings provide initial support for using P4P approaches as a method of increasing the quality of substance use treatment.

### Keywords

adolescents; intentions; pay-for-performance; substance use treatment

### 1. Introduction

According to the Institute of Medicine (IOM; 2007), existing payment systems are not currently aligned with providing high quality care and have limited the success of prior quality improvement efforts. Indeed, early attempts to improve quality of care within substance abuse treatment, which focused on disseminating treatment manuals for evidence-based treatment (EBTs; Budney, & Higgins, 1998; Carroll, 1998; Mercer & Woody, 1998), have not had a significant impact on the adoption and implementation of these EBTs (Garner, 2009). Among the potential reasons for this is the lack of financial incentives for adopting and implementing these EBTs. In order to promote better alignment of payment systems and quality care, the IOM (2007) has recommended examining pay-for-performance (P4P; i.e., providing financial incentives for achieving predefined quality targets) as one promising method to encourage innovation, performance improvement, and better outcomes. Using data from a large randomized P4P experiment called Reinforcing Therapist Performance (Garner, Godley, Dennis, Godley, & Shepard, 2010), this paper examines the extent to which P4P methods impacted therapists' intentions to achieve two quality care targets, as well as the extent to which therapists' self-reported intentions to achieve these

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quality targets could be explained by the theory of planned behavior (TPB; Ajzen, 1991). As described by Garner et al. (2010), these quality targets included: demonstrating monthly competence (i.e., delivery of treatment procedures at or above the level prescribed in the training manual) and delivering a targeted threshold level of treatment (i.e., at least 10 of 12 specific treatment procedures delivered in no less than seven sessions) found to be significantly associated with better post-treatment client outcomes.

### 1.1. Research on P4P

Despite little research experimentally testing the effectiveness of P4P methods to improve quality of health care (Dudley et al., 2004), the number of P4P programs in the United States is well over 100 and quickly rising (Greene & Nash, 2009). Within the behavioral health treatment field, however, P4P has been less common, with only 13 P4P programs having been identified that targeted either behavioral health specialists or substance abuse treatment providers (Bremer, Scholle, Keyser, Houtsinger, & Pincus, 2008). In general, behavioral health P4P programs have focused on increasing rates of client engagement and retention in treatment and have provided incentives at the level of the treatment program. As one example, McLellan, Kemp, Brooks, & Carise (2008) describe the State of Delaware's initiative to replace traditional cost-reimbursement contracts with performance-based contracts for all 11 of its outpatient addiction treatment programs. After making program reimbursement contingent on successfully maintaining specific client capacity utilization rates, the average rate increased from 54% in 2001 to 95% in 2006. Additionally, when monetary bonuses were provided for programs meeting specific threshold rates of client participation and completion, the average program rate of clients meeting the participation requirements increased from 53% in 2001 to 70% in 2006. Only two prior studies have used *therapist-level* P4P methods to improve treatment quality. For example, Andrzejewski, Kirby, Morral, and Iguchi (2001) found that providing therapists with graphical performance feedback and drawings for monetary incentives increased contingency management implementation by 69% and 93%, respectively. Additionally, a study by Shepard and colleagues (2006) found that providing therapists with a \$100 bonus appeared to be an effective approach to improve the percentage of clients who attended at least five treatment sessions. A limitation of these two P4P studies, however, has been the lack of random assignment to experimental and control conditions, which limits the ability to make causal inferences regarding the P4P programs' impact on outcomes.

### 1.2. The theory of planned behavior

An extension of the theory of reasoned action (Fishbein & Ajzen, 1975), Ajzen's (1991) TPB is one of the most widely tested theories of behavior change (e.g., Armitage & Connor, 2001; Eccles et al., 2006; Godin, Belanger-Gravel, Eccles, & Grimshaw, 2008; Godin & Kok, 1996; Webb & Sheeran, 2006). According to this theory, an individual's *intention* to perform or engage in a particular behavior is a key predictor of his/her actual behavior. The TPB also postulates that behavioral intentions are determined in part by three constructs: 1) attitudes toward the behavior (i.e., positive or negative evaluations of behavior), 2) subjective norms (i.e., social pressure from significant others to engage or not to engage in a behavior), and 3) perceived level of control (i.e., perceived ease or difficulty of performing a behavior). Relative to the larger literature that has utilized theories such as TPB to study behavior change, only an extremely limited number of studies have applied theories of behavioral change to better understand and change the behavior of staff in medical and other behavioral health care fields (Perkins et al., 2007). One exception is a recent study by Rieckmann, Daley, Fuller, Thomas, and McCarty (2007), which found therapists' attitudes and subjective norms were significantly associated with their intentions to recommend specific medications to clients for the treatment of opioid dependence. Thus, consistent with recommendations for more theory-driven research to understand therapist behavior (Perkins

et al., 2007), this study also examined the extent to which the TPB measures could explain therapists' intentions to achieve two indicators of high quality treatment.

## 2. Method

### 2.1. Study Context

All participants in this current study, which is one piece of a larger study, were therapists hired to treat adolescents with substance use problems as part of a service project funded by the Center for Substance Abuse Treatment (CSAT) to implement the Adolescent Community Reinforcement Approach (A-CRA) and Assertive Continuing Care (ACC). Based upon the Community Reinforcement Approach (CRA), which was originally developed for treating substance abuse with adults (Azrin, Sisson, Meyers, & Godley, 1982; Higgins et al., 1991; Hunt & Azrin, 1973; Meyers, Dominguez, & Smith, 1996; Meyers & Smith, 1997; Smith, Meyers, & Delaney, 1998), A-CRA/ACC are adolescent adaptations of CRA that have been found to be both effective and cost-effective (Dennis et al., 2004; Garner, Godley, Funk, Dennis, & Godley, 2007; Godley et al., 2010; Godley, Godley, Dennis, Funk, & Passeti, 2002, 2007; Slesnick, Prestopnik, Meyers, & Glassman, 2007). Importantly, in contrast to session-based EBTs, which deliver treatment procedures to all clients in the same prescribed order, A-CRA/ACC are procedure-based interventions that require therapists to not only be able to deliver the treatment procedures, but to be able to determine which procedure(s) are most appropriate based on what the adolescent says during each treatment session. As part of this CSAT project, treatment agencies each received financial resources of approximately \$300,000 per year (for up to three years), as well as free A-CRA/ACC training and technical assistance for their therapists during the 3-year project period. As described by Godley, Garner, Smith, Meyers, and Godley (in press), the training includes several components identified by Carroll, Kadden, Donovan, Zweben, and Rounsaville (1994) to ensure therapists are trained to maximize treatment fidelity (e.g., treatment manual, 3.5-day initial workshop, and ongoing individual performance feedback and coaching based on review of recorded therapy sessions). Participants for the current study were therapists working for agencies who received funding from CSAT and who agreed to participate in the RTP experiment during January and February 2009. The RTP experiment was funded by the National Institute of Alcohol Abuse and Alcoholism with the primary purpose of testing the effectiveness and cost-effectiveness of providing monetary incentives directly to therapists as a method to improve treatment implementation and subsequent outcomes for adolescents.

### 2.2. Participants

In order to be eligible to participate in the study, therapists had to work at one of the CSAT-funded agencies that were delivering A-CRA and/or ACC treatment in an outpatient setting. Of the 108 eligible therapists, 95 (88%) agreed to participate. Of the 13 participants that did not participate, seven indicated they wanted to participate but despite numerous reminders, never turned in the informed consent and survey. The remaining six indicated they did not want to participate because they were too busy. Overall, study participants were female (74%), with an average age in years of 36 ( $SD = 11.22$ ). Racial composition of the sample was 57% Caucasian; 22% Hispanic/Latino; 16% African American; 3% American Indian/Alaskan Native; and 2% Asian. The average number of years of experience in substance abuse counseling was 4.17 ( $SD = 5.5$ ), with 2% having a Doctoral degree, 53% having a Masters degree, 41% having a Bachelors degree, and the remaining 4% having some college or an Associates degree. Additionally, 6% of the therapists reported they were in recovery. Study participation was voluntary and was conducted under the auspices of Chestnut Health Systems' Institutional Review Board. In addition to informing participants that all of the questions were for research purposes only and would not be shared with anyone outside of

the research team, participants were told to skip any questions that they did not feel comfortable answering.

### 2.3. Procedures

Study recruitment packets containing a cover letter, informed consent, and therapist background survey were mailed to all eligible therapists. The informed consent provided participants with a description of the behaviors being reinforced and the reinforcement schedule so all participants had this information prior to learning the study condition to which they were assigned. Upon completion of the study's recruitment phase, urn randomization (Stout, Wirtz, Carbonari, & Del Boca, 1994) was used to assign agencies and their therapists to the two study conditions. Fifteen agencies and their 48 therapists were assigned to the control condition, which was an implementation-as-usual condition, while 14 agencies and their 47 therapists were assigned to the P4P condition. The experimentally manipulated difference between these two groups was that therapists who worked at programs assigned to the P4P condition were given the opportunity to earn: 1) \$50 for each month a randomly selected audio session recording was rated at or above the minimum competency level (i.e., monthly competence), and 2) \$200 for each adolescent to whom they delivered a targeted threshold level of A-CRA treatment (i.e., targeted threshold), which has been found to be significantly related to improved adolescent treatment outcomes (Garner et al., 2009, 2010). Incentive payments were made on a monthly basis and depending on their preference, were either in the form of direct deposit or mailed check. Therapists' intentions to achieve these quality targets and TPB measures were obtained from surveys that were completed three months post-randomization. All surveys were mailed to participants along with a postage-paid envelope in which to return the completed survey. Participants were compensated \$50 for the 30-45 minutes of time and effort required to complete the survey. Overall, 92 of the 95 participants completed the follow-up survey (97%). Listwise deletion resulted in two cases being dropped and resulted in an analytic sample of 90 therapists (95% [90/95] of total sample).

### 2.4. Dependent Measures

Dependent measures of primary interest for this study were therapists' intentions to: 1) demonstrate monthly competency, and 2) deliver a targeted threshold level of A-CRA/ACC treatment. Therapists' intentions to achieve these two quality targets during the first three months of the study were measured separately using three items that assessed the extent to which therapists reported having: 1) done their best to achieve the targeted criterion, 2) invested extra effort to achieve the targeted criterion, and 3) invested extra time to achieve the targeted criterion. Respondents were asked to rate their agreement with the statements based on a seven-point Likert-type scale from 1 = Strongly Disagree to 7 = Strongly Agree, and mean scores were used to create a scale score for each measure. Cronbach's alpha for intentions to achieve monthly competence and intentions to deliver the targeted threshold were .87 and .86, respectively.

### 2.5. Independent Measures

Study participants also were asked to respond using the same seven-point Likert-type scale (1 = Strongly Disagree to 7 = Strongly Agree) to indicate how much they agreed or disagreed with several items for each of the two reinforced behaviors, and scale scores were created using the mean rating. *Attitude* toward each of the two quality targets was separately measured using the following three items: 1) this target criterion is clinically meaningful, 2) achieving this target criterion is good for the individuals I treat, and 3) this target criterion is based upon sound research and science. Cronbach's alpha for attitudes toward monthly competence and attitudes toward targeted threshold were .87 and .89, respectively. *Subjective Norms* were measured using the following two items: 1) my supervisor expected

me to achieve this target criterion on a regular basis, and 2) other therapists expected me to achieve this target criterion on a regular basis. Cronbach's alpha for subjective norms for monthly competence and targeted threshold were .86 and .81, respectively. *Perceived level of control* over each of the two quality targets was measured using the following two items: 1) the actions necessary to achieve this target criterion were largely within my control, and 2) achieving this target criterion on a regular basis depended mostly on me. Cronbach's alpha for perceived control over monthly competence and targeted threshold were .73 and .75, respectively. Some of the items included as part of the attitudes toward the quality targets and perceived level of control were adapted from items developed by Meterko et al. (2006).

## 2.6. Analytic Plan

Participants in the study represented 29 different CSAT-funded treatment agencies, and it is likely that therapists from the same program shared more similarities with one another than they did with therapists from other programs. As such intercorrelations among participants may violate the ordinary least squares regression assumption of independent error terms and can lead to misestimated standard errors, Hierarchical Linear Modeling (HLM; Raudenbush, Bryk, Cheong, Congdon, & du Toit, 2004) software was used because it allows the relationship between the variables of interest to vary by higher-level groupings. In addition, a commonly employed model-building strategy developed by Hosmer and Lemeshow (1989) was used, whereby those factors with liberal significance levels ( $p < .10$ ) at the univariate level were retained for inclusion in subsequent multivariate analyses. The conventional  $p < .05$  was used to define significance in multivariate analyses.

## 3. Results

### 3.1. Therapists' intentions to achieve monthly competence

As indicated in Table 1, therapists in the P4P condition reported they had significantly higher intentions to achieve monthly competence compared to therapists in the control condition ( $B = 1.41, p < .001$ ) and accounted for 20% of the variation in therapist intention. In terms of the TPB measures, only attitude toward monthly competence was significantly associated with therapist intentions ( $B = .42, p = .016$ ), explaining 9% of the variance. Neither subjective norms ( $B = .17, p = .109$ ) nor perceived level of control ( $B = .01, p = .957$ ) were found to be significantly associated with intentions. Multivariate analyses, which included both condition assignment and attitude toward monthly competence, revealed that condition assignment remained statistically significant ( $B = 1.19, p = .001$ ), while attitude toward monthly competence did not quite reach statistical significance ( $B = .27, p = .055$ ). Together, these two measures accounted for 22% of the variation in therapists' intentions to achieve monthly competence.

### 3.2. Therapists' intentions to achieve targeted threshold

As indicated in Table 2, therapists in the P4P condition reported they had significantly higher intentions to achieve monthly competence compared to therapists in the control condition ( $B = 1.31, p < .001$ ) and accounted for 18% of the variation in therapist intention. In terms of the TPB measures, both attitude toward the targeted threshold ( $B = .40, p = .004$ ) and subjective norms ( $B = .23, p = .026$ ) were significantly associated with therapist intentions and explained 9% and 5% of the variance, respectively. Perceived level of control was not found to be significantly associated with intentions ( $B = .01, p = .939$ ). Multivariate analyses, which included condition assignment, attitudes toward the targeted threshold, and subjective norms, revealed that the condition assignment remained statistically significant ( $B = 1.11, p = .002$ ), while attitudes toward the targeted threshold and subjective norms were

no longer statistically significant. Together, these three measures accounted for 22% of the variation in therapists' intentions to achieve the targeted threshold.

## 4. Discussion

### 4.1. Summary

Providing financial incentives for the delivery of pre-defined high quality care targets is one example of what is commonly referred to as pay-for-performance (P4P). Interestingly, despite limited empirical research supporting the effectiveness and cost-effectiveness of such approaches (Dudley et al., 2004), the number of P4P programs in the United States has grown rapidly (Greene & Nash, 2009). Using data collected as part of the Reinforcing Therapist Performance experiment (Garner et al., 2010), which is one of the first P4P experiments in the substance abuse treatment field, the current study examined the impact of P4P methods on therapists' intentions to deliver high quality treatment. As we had hypothesized, therapists in the P4P condition reported significantly greater intentions to achieve each of the two quality targets during the first three months of the experiment. This finding is important and significantly contributes to the literature given that it provides some of the first evidence that P4P programs positively impact therapists' intentions to achieve the pre-defined quality targets being reinforced.

In their recent review of the application of theory-driven approaches to understand and modify therapists' behavior, Perkins and colleagues (2007) concluded that although theories such as TPB are among the most promising models to help understand how to change therapists' behavior, only a limited number of studies have examined the relevance of behavioral change theories for understanding staff behaviors within the medical and behavioral health care fields. Contributing significantly to this gap in the existing literature, this study also examined the extent to which therapists' intentions to achieve two quality targets could be explained by TPB-related measures. Overall, partial support of the TPB was found, with therapists' attitudes being significantly associated with the two different quality targets, therapists' subjective norms only being significantly associated with achievement of one of the two quality targets (i.e., target threshold), and therapists' perceived level of control not being significantly associated with either of the two quality targets. These findings are similar to those by Rieckmann and colleagues (2007), who found that substance use therapists' attitudes and subjective norms were significantly associated with their intentions to recommend several treatment medications for opioid dependence. In contrast, whereas subjective norms were found to have the greater associations in the Rieckmann et al. study, our analyses revealed greater associations for the attitude measure. Although it is not possible to determine the specific reasons for these differences, we believe possible explanations may be related to either the different behaviors in question and/or differences related to the measurement instruments. Additionally, whereas Rieckmann et al. used single items to measure subjective norms and intentions, which are more prone to issues of random measurement error (Nunnally & Bernstein, 1994), each of the measures used in this study were composed of multiple items.

### 4.2. Limitations

In addition to its strengths (e.g., 95% response rate), this study had important limitations that should be acknowledged. First, the sample size is relatively small. Second, data are based upon self-report and thus are subject to response bias. Examination of the measures' descriptive statistics and psychometric properties, however, did not indicate any issues of concern. Third, while it is possible to suggest that assignment to the P4P condition impacted therapists' intentions because this assignment was random and preceded the measurement of intentions by three months, we can only say that the relationship of intentions to the other

constructs (i.e., attitude towards the targets, subjective norms, and perceived level of control) was correlation. Finally, as the findings are based upon data from therapists participating in a well-resourced implementation project, it is unknown to what extent these findings would generalize to other settings.

### 4.3. Next steps

Data collection related to the achievement of the two targeted behaviors (i.e., monthly competence and targeted threshold) and client post-treatment outcomes are still ongoing. However, upon completion, we will examine and report upon the impact of P4P on these main outcomes. Results of these analyses will be important as they will represent one of the first experimental tests of using P4P methods to improve the quality of treatment delivery and subsequent treatment outcomes within the field of substance use treatment. If support for the effectiveness of P4P methods is found, we also plan to examine the cost-effectiveness of these P4P methods. Arguably, the cost-effectiveness of such programs is ultimately of even greater importance than its effectiveness, given such programs will likely not receive financial support without some evidence that the P4P program will provide some minimally acceptable level of return on investment (Greene & Nash, 2009).

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**Table 1**

Therapist intention to achieve monthly competence

	Bivariate Models				Multivariate Model							
	B	SE	t-ratio	df	p-value	Percent Variance Explained	B	SE	t-ratio	df	p-value	
<b>Condition Assignment</b>												
Assigned to P4P condition	1.41	.30	4.66	27	<.001	20%	1.19	.32	3.73	27	.001	
<b>Theory of Planned Behavior</b>												
Attitude	.42	.17	2.46	88	.016	9%	.27	.14	1.94	87	.055	
Subjective Norms	.17	.10	1.62	88	.109	3%	-	-	-	-	-	
Control	.01	.11	0.06	88	.957	0%	-	-	-	-	-	
	Percent Variance Explained = 22%											

Note: All analyses were conducted using HLM software. Assigned to P4P condition was modeled at the site-level (level 2) while the theory of planned behavior measures were modeled at the therapist-level (level 1).

**Table 2**

Therapist intention to achieve target threshold

	Bivariate Models				Multivariate Model							
	B	SE	t-ratio	df	p-value	Percent Variance Explained	B	SE	t-ratio	df	p-value	
<b>Condition Assignment</b>												
Assigned to P4P condition	1.31	.30	4.35	27	<.001	18%	1.11	.31	3.59	27	.002	
<b>Theory of Planned Behavior</b>												
Attitude	.40	.13	2.97	88	.004	9%	.22	.14	1.59	86	.115	
Subjective Norms	.23	.10	2.26	88	.026	5%	.17	.10	1.66	86	.100	
Control	.01	.11	0.08	88	.939	0%	—	—	—	—	—	
							Percent Variance Explained = 22%					

Note: All analyses were conducted using HLM software. Assigned to P4P condition was modeled at the site-level (level 2) while the theory of planned behavior measures were modeled at the therapist-level (level 1).