

# The Effectiveness of Alternative Planned Durations of Residential Drug Abuse Treatment

## ABSTRACT

Randomized controlled trials were conducted at two residential drug abuse treatment facilities to compare programs that differed in planned duration. One trial compared a 6-month and a 12-month therapeutic community program ( $n = 184$ ), and the second compared a 3-month and a 6-month relapse prevention program ( $n = 444$ ). Retention rates over comparable time periods differed minimally by planned treatment duration, and the longer programs had lower completion rates. There was no effect in either trial of planned treatment duration on changes in psychosocial variables between admission and exit or on rates or patterns of drug use at follow-up between 2 and 6 months after exit. (*Am J Public Health*. 1995;85:1426-1429)

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### Introduction

Because of the importance of drug abuse in the transmission of the human immunodeficiency virus (HIV), attention has increasingly been focused on the effectiveness of drug abuse treatment, an area long neglected by public health.<sup>1-4</sup> The therapeutic community is a publicly funded, long-term residential drug-free treatment modality developed for severely dependent heroin addicts in the late 1950s. Although there is great variability in recommended length of stay, staff-to-client ratios, and training of staff, therapeutic communities are generally united by a philosophy in which drug abuse is seen to reflect impeded personality development or chronic social deficits.<sup>5</sup> Therapeutic communities aim to "rebuild" the person and develop responsible drug-free life-styles through a program of group living with firm behavioral norms and a hierarchical system of responsibilities and privileges.

The duration of treatment needed to achieve positive outcomes is controversial, but there is pressure to shorten treatment to increase access and accommodate managed care imperatives. However, longer programs appear to be associated with better outcomes, although no previous randomized trials have been conducted to address this question.<sup>4</sup>

This study assessed outcomes in two residential drug-free treatment facilities in New England: a traditional therapeutic community and a therapeutic community that was modified to incorporate relapse prevention and health education components.<sup>6,7</sup> At each facility, "short" and "long" treatment programs were developed, to which clients were randomly assigned; 6- and 12-month therapeutic community programs were included, along with 3- and 6-month relapse prevention programs. In this paper, we report on outcomes of these two experiments, specifically treatment retention and completion, changes in psychosocial measures

between admission and exit, and rates of drug use within 6 months from exit.

### Methods

#### Enrollment and Randomization

Among a total of 742 clients admitted to either of the two facilities between September 14, 1990, and September 5, 1992, 689 (93%) met eligibility criteria. Fifty-three clients were not eligible for one or more of the following reasons: 27 were court stipulated to treatment of a specified duration, 9 abused alcohol only, 3 did not understand English well enough to be interviewed, and 15 were not randomized for miscellaneous financial, medical, or clinical reasons.

Eligible clients were randomized to the short or long version of each program before they entered treatment and before they were invited to participate in the research study. Information on randomization methods is available from the authors.

Of the 689 eligible clients, 26 left their program too early to complete baseline assessment instruments, and 35 refused to participate. The final study sample of 628 represents 85% of all clients admitted, 91% of all eligible clients, and 95% of those asked to participate.

#### Data Collection

Baseline data included sociodemographic, drug abuse history, and psychosocial variables collected in interviews within

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the first 2 weeks after admission. The psychosocial instruments were readministered at an interview scheduled for the day of exit. Therapeutic community program interviewers were not always available on site to conduct exit interviews, particularly if clients left the program at short notice. Arrangements were made to carry out these interviews at the downtown offices of the treatment program, usually within 2 weeks of exit. The levels of the psychosocial variables at admission and exit interviews, stratified by program completion, were similar among those who completed the exit interview before vs after exit (data not shown); thus, the two groups were combined for analysis. Follow-up interviews were scheduled at approximately 3 months after exit, and all interviews conducted between 2 and 6 months after exit were included in this analysis.

The following instruments, administered at admission and exit, were used in measuring psychosocial variables: the Beck Depression Inventory<sup>8</sup>; the Rosenberg self-esteem scale<sup>9</sup>; a scale, developed for this study, assessing self-efficacy to avoid drug use; scales measuring precontemplation and action stages of behavior change<sup>10</sup>; and scales assessing perceived pros and cons of drug use derived from a decisional balance scale developed by Rosenbloom<sup>11</sup> (based on the work of Velicer et al.<sup>12</sup>).

Program completion was assessed by program staff. Completion usually took place within 10 days of planned duration, some completers leaving early because appropriate aftercare was available.

Drug use was assessed at the follow-up interview from self-reports of any drug use (excluding alcohol) since exit from the treatment program. Among those who reported drug use, we also examined the number of days that drugs were used as a percentage of the number of free-living (noninstitutional) days.

### Statistical Methods

Analyses comparing the outcomes of the programs included all randomized clients, regardless of program retention or completion.

Our analyses of retention used cut points that were applicable to all four programs and took into account the increased attrition that occurred near the predetermined end of each program. While prior research on program retention has often reported 30-day retention, consideration of power led us to compute retention rates to 40 days. We also assessed retention to 80 days in the subset

**TABLE 1—Retention and Treatment Completion among Drug Abuse Treatment Clients, by Planned Treatment Duration and Facility**

	Total (n = 628)	Relapse Prevention		Therapeutic Community		P <sup>a</sup>
		3 mo (n = 223)	6 mo (n = 221)	6 mo (n = 97)	12 mo (n = 87)	
Completion, <sup>b</sup> %	38	56	30	33	21	.81 <sup>c</sup>
Retention, d						
Total						
Median	84	79	90	94	129	...
Range	1–400	1–113	1–223	4–219	6–400	...
Completers						
No.	241	124	67	32	18	...
Median	110	89	178	184	366	...
Range	70–400	70–113	133–223	169–219	351–400	...
Noncompleters						
No.	387	99	154	65	69	...
Median	50	30	58	46	91	...
Range	1–360	1–78	1–168	4–170	6–360	...
Retention rate, %						
40 d	74	73	72	70	85	.06
80 d (if 40)	73	76 <sup>d</sup>	75	76	73	.95
160 d (if 80)	60	...	59 <sup>d</sup>	65 <sup>d</sup>	65	.67

<sup>a</sup>Computed from Fisher's exact test.

<sup>b</sup>Determined by clinical staff.

<sup>c</sup>For comparison of two 6-month programs only.

<sup>d</sup>Includes program completers.

of clients retained at least 40 days; in the three longer programs, we computed retention to 160 days in the subset of clients retained at least 80 days. In these analyses, the small numbers of completers who left the 3-month program before 80 days or who left either of the 6-month programs before 160 days were considered to have been retained to these cut points.

We used repeated measures analyses of variance to assess changes in psychosocial measures from admission to exit at each site. Logistic regression analysis was used to compare rates of drug use by randomization; baseline differences were controlled. All analyses were performed with SAS 6.04 statistical software.<sup>13</sup>

### Results

In the relapse prevention program, 294 clients (66%) completed both admission and exit interviews on schedule; 56 did not complete the admission instruments within the first 14 days after admission, and a further 104 failed to complete the exit interview before leaving the facility. In the therapeutic community program, 122 clients (66%) completed both admission and exit interviews; 19 did not complete the admission instrument within the first 14 days after admission,

and 43 failed to complete the exit interview. Rates of participation in the exit interview were higher among those with longer stays (particularly completers) but did not differ by randomization group.

Rates of completion of the follow-up interview within 6 months of exit were higher in the therapeutic community program than in the relapse prevention program (84% vs 74%) but did not differ by randomization at either site. In the therapeutic community program, follow-up rates were higher among those with greater self-efficacy at baseline and those who completed treatment. In the relapse prevention program, follow-up rates were higher among those who stayed longer in treatment, completed treatment, were older, or were admitted after April 1991. At the time of follow-up, 79% of therapeutic community clients were free living, 8% were in residential drug treatment or halfway houses, and 13% were in prison; the corresponding figures for relapse prevention clients were 80%, 13%, and 6%.

Retention rates over time (e.g., to 40 or 80 days) were similar in the four programs, and, as a result, completion rates were lower in the longer programs (Table 1).

The levels and the magnitudes of the changes in the psychosocial variables were

**TABLE 2—Means of Treatment Clients' Psychosocial Measures at Admission and Exit, by Facility**

	No.	Relapse Prevention		No.	Therapeutic Community	
		Mean	P		Mean	P
Depression <sup>a</sup>	249			111		
Admission		17.1	.0001		16.5	.0001
Exit		9.4			8.8	
Self-esteem <sup>b</sup>	271			114		
Admission		26.3	.0001		27.0	.0001
Exit		31.5			31.8	
Self-efficacy <sup>c</sup>	272			114		
Admission		2.79	.0001		3.00	.0001
Exit		3.44			3.46	
Pros of drug use <sup>d</sup>	259			112		
Admission		30.6	.0001		29.8	.0001
Exit		25.3			23.5	
Cons of drug use <sup>e</sup>	254			111		
Admission		50.8	.32		48.8	.16
Exit		50.3			50.0	
Precontemplation <sup>f</sup>	247			110		
Admission		14.39	.80		14.25	.004
Exit		14.49			15.86	
Action <sup>f</sup>	240			108		
Admission		34.18	.87		34.11	.39
Exit		34.10			33.71	

<sup>a</sup>Range 0–63.

<sup>b</sup>Range 4–40.

<sup>c</sup>Range 1–4.

<sup>d</sup>Range 11–55.

<sup>e</sup>Range 13–65.

<sup>f</sup>Range 8–40.

similar at the two sites (Table 2). There was no significant effect of randomization on these changes at either site.

Rates of drug use at follow-up were 44% among relapse prevention clients and 50% among therapeutic community clients, and there were no differences by randomization at either site. Among those who used drugs, there were no significant differences by randomization in the percentage of free-living days in which drugs were used (data not shown).

## Discussion

This study is the first, to our knowledge, to randomly assign residential drug abuse treatment clients to programs of different length. Indeed, the notable lack of randomized studies of therapeutic communities has been attributed to “the difficulties of applying standard clinical trial methodologies to a complex, dynamic treatment milieu and a population resistant to following instructions.”<sup>4</sup> We were able to randomize 85% of all clients admitted to the two treatment facilities and 91% of those clients who met the

eligibility criteria. Our success can be attributed in part to the fact that, in each trial, clients were randomized to programs differing only in planned duration; clients were not randomized to different treatment modalities. Also, we randomly assigned clients to treatment of a given length before they were admitted and invited to participate in the study.

Rates of self-reported drug use within 6 months after program exit suggest no effect of planned duration. These results are supported by our findings on retention in treatment and psychosocial changes during treatment.

Because high rates of attrition from treatment programs reported in the literature might be due to the unrealistic expectations of some clients, we expected that early dropout might be less frequent in those enrolled in shorter programs. However, we found that retention rates over comparable intervals were very similar in the four programs. These data suggest that the planned duration of treatment has little effect on rates of retention over time and that, as a result,

longer programs will have lower rates of completion.

We also failed to find any effect of planned treatment duration on psychosocial changes from admission to exit, although these changes were generally in a favorable direction.

The results thus far suggest minimal differences in effectiveness of programs varying in planned duration from 3 to 12 months. No conclusions on efficacy can be drawn given the lack of full program completion by all study participants.

The results reported in this paper must be regarded as preliminary, pending our findings from longer term follow-ups involving a wider range of posttreatment outcomes, including patterns of drug use, HIV-risky injection and sexual behavior, and legal and employment problems. Finally, the generalizability of the results will need to be determined in future studies involving a larger number of facilities. □

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## References

- Battjes RJ, Leukefeld CG, Pickens RW, Haverkos HW. The acquired immunodeficiency syndrome and intravenous drug abuse. *Bull Narc.* 1988;XL:21–34.
- Niven RG. The impact of AIDS on the chemical dependency field. *Adv Alcohol Subst Abuse.* 1987;7(2):3–14.
- Hubbard RL, Marsden ME, Cavanaugh E, Rachal JV, Ginzburg HM. Role of drug-abuse treatment in limiting the spread of AIDS. *Rev Infect Dis.* 1988;10:377–384.
- Gerstein DR, Harwood HJ, eds. *Treating Drug Problems. Volume 1. A Study of the Evolution, Effectiveness, and Financing of Public and Private Drug Treatment Systems.* Washington, DC: National Academy Press; 1990.
- DeLeon G. The therapeutic community for substance abuse: perspective and approach. In: DeLeon G, Ziegenfuss JT, eds. *Therapeutic Communities for Addictions: Readings in Theory, Research and Practice.* Springfield, Ill: Charles C Thomas Publisher; 1986:5–18.
- Marlatt GA, Gordon JR. *Relapse Prevention: Maintenance Strategies in the Treatment of Addictive Behaviors.* New York, NY: Guilford Press; 1985.
- Lewis B, McCusker J, Hindin R, Frost R, Garfield F. Four residential drug treatment programs: Project IMPACT. In: Inciardi J, Tims F, Fletcher B, eds. *Innovative Strategies in the Treatment of Drug Abuse.* Westport, Conn: Greenwood Publishing Group Inc; 1993:45–60.

8. Beck AT. *Depression: Causes and Treatment*. Philadelphia, Pa: University of Pennsylvania Press; 1967.
9. Rosenberg M. *Society and Adolescent Self-Image*. Princeton, NJ: Princeton University Press; 1965.
10. Prochaska JO, DiClemente CC. Toward a comprehensive model of change. In: Miller WR, Heather N, eds. *Treating Addictive Behaviours*. New York: Plenum Press; 1986:3-27.
11. Rosenbloom D. *A Transtheoretical Analysis of Change among Cocaine Users*. Kingston, RI: University of Rhode Island; 1991. Dissertation.
12. Velicer WF, DiClemente CC, Prochaska JO, Brandenburg N. Decisional balance measure for assessing and predicting smoking status. *J Pers Soc Psychol*. 1985;48:1279-1289.
13. *SAS/STAT Guide for Personal Computers, Version 6.04*. Cary, NC: SAS Institute Inc; 1990.

## The Quality of Psychiatric Emergency Evaluations and Patient Outcomes in County Hospitals

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### ABSTRACT

Quality of care is widely assumed to be related to patient outcomes, but little is known about care in relation to outcomes in county general hospital psychiatric emergency services. It was hypothesized that conformity to professional standards (technical quality) and engagement of the patient (artful care) in psychiatric emergency services evaluations would contribute to improved patient functioning (Global Assessment Scale score) and appropriate disposition. A total of 583 cases in seven facilities were analyzed. Conformity to technical standards of care was associated with retention even after constraints, biases, and admission criteria had been taken into account. Conversely, artful care was associated with lower probability of retention and improved functioning. (*Am J Public Health*. 1995;85:1429-1431)

### Introduction

The assumption that quality of care affects patient outcomes has stimulated little research to describe the relationship. A recent handbook of quality assurance in mental health cited only one study attempting to demonstrate the effects of a quality assurance program on mental health care.<sup>1</sup> No such work has been carried out in general hospital psychiatric emergency services, the major point of entry of severely mentally ill individuals into the mental health system.

The focal question in psychiatric emergency services evaluation is whether to admit the person for inpatient care. Interventions may be applied to prevent unnecessary admission and to enhance decision making. In this manner, quality of care may affect disposition. Furthermore, high-quality care focused on facilitating appropriate disposition may also change patient functioning. In this paper, disposition and functioning outcomes of the psychiatric emergency services evaluation are examined in relation to three dimensions of quality of care.

### Methods

Data on 583 cases in seven California county general hospital psychiatric emergency services were gathered from independent observation of each assessment, patient records, and the psychiatric emergency services staff clinician's responses to a brief questionnaire. Subjects were chosen consecutively on entry to the psychiatric emergency services, and observations were completed around the clock. Mental health professionals experienced in assess-

ing severely mentally ill patients used structured instruments for observation and chart review.

### Outcome Measures

The first outcome measure was the disposition decision after the initial evaluation, that is, the decision to either release or retain, whether in the psychiatric emergency services (for further observation) or in an inpatient unit. The second outcome measure was the clinician's rating of the client's psychosocial functioning at exit from the psychiatric emergency services using the Global Assessment Scale.<sup>2</sup> Change in Global Assessment Scale score is logically the difference between the scale score assigned by psychiatric emergency services staff on first seeing the patient and the score assigned by a psychiatric emergency services clinician as the patient is discharged up to 24 hours later. We estimated the change in this scale score as the amount of variance in the score at exit not explained by the score at entry. Thus, for control purposes, Global Assessment Scale scores were also obtained from clinician ratings

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