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## Improving Active Treatment through Performance Management

Carman E. Stark

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**IMPROVING ACTIVE TREATMENT THROUGH  
PERFORMANCE MANAGEMENT**

by

**Carman E. Stark**

**A Thesis  
Submitted to the  
Faculty of The Graduate College  
in partial fulfillment of the  
requirements for the  
Degree of Master of Arts  
Department of Psychology**

**Western Michigan University  
Kalamazoo, Michigan  
August 1990**

## IMPROVING ACTIVE TREATMENT THROUGH PERFORMANCE MANAGEMENT

Carman E. Stark, M.A.

Western Michigan University, 1990

The primary purpose of this project was to evaluate a performance management program using a goal setting and feedback system implemented by unit supervisors in a large psychiatric hospital. The focus of the research study was to improve active treatment for mental health patients by increasing levels of staff-patient interaction. Behaviors of self-recording by staff and instructions and goal setting by the unit supervisor were targeted. Feedback was provided by the unit supervisor in the form of publicly posted graphs indicating percent of completed assigned activities. The four phases used in the data summary include: (1) baseline, (2) goal setting, (3) intensified observation, and (4) change in shift supervisor. Levels of engagement assessed across all phases show a small absolute difference between the experimental and control units. However, this difference is probably not meaningful in a therapeutic sense.

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Carman E. Stark

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**Stark, Carman Eugene, M.A.**

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## CHAPTER I

### INTRODUCTION

#### Review of the Literature

##### Goal Setting

Goal setting has been found to be a promising strategy for improving performance in many organizational settings (Latham & Yukl, 1975). In general, goal setting involves specifying a level of performance toward which the individual or group should work (Fellner & Sulzer-Azaroff, 1984). More specifically, a goal is a stimulus that precedes behavior. When the antecedent goal is reliably paired with a reinforced response, it acquires "discriminative control," thereby increasing the probability of repetition of a behavior that follows it. Also, attainment of a goal can function as a reinforcing stimulus if it is paired frequently with a positive consequence or withdrawal of a negative consequence (Fellner & Sulzer-Azaroff, 1984).

Feedback, which has been defined as information provided to individuals about the quantity or quality of their past performance (Prue & Fairbank, 1981), should enhance the effectiveness of goal setting, provided that feedback itself is a conditioned reinforcer (Skinner, 1969). As in the case of meeting a goal, if providing individuals with feedback regarding their performance is paired with reinforcing consequences (e.g., praise or positive personnel action), a goal will set the occasion for similar behaviors under similar conditions in the future (Fellner & Sulzer-Azaroff, 1984).

In some cases, goals have been established and used to manage performance without the use of consequences. In such cases, success has been mixed. Ritschl and Hall (1980) indicated that while management by objectives (MBO) programs clearly specify goals which employees should attain, the lack of contingent consequences can impede its success. Thus, it is important that a consequence (e.g., feedback, praise) be delivered contingent on meeting a goal for improving performance (Fellner & Sulzer-Azaroff, 1984).

### Feedback

Another important method of influencing performance in organizational change is performance feedback. Balcazar, Hopkins and Suarez (1986) found the following results in their review of the literature on performance feedback:

1. Combinations of feedback, goal setting and behavioral consequences were much more consistently effective than other interventions.
2. Supervisors or managers were the most commonly used source of feedback and were linked with a relatively large proportion of consistent effects on performance.
3. Both publicly-posted and private feedback produced positive effects on performance.
4. Graphs were the most frequently used feedback instrument and also were associated with the highest proportion of consistent feedback effects. Daily feedback was used in more experiments but was not more consistently effective than weekly feedback. Monthly feedback was shown to produce less consistent effects across studies.

### Previous Investigations

Goal setting and feedback have been used extensively in the management of performance in mental hospitals and community agencies. A variety of behaviors of mental health workers have been targeted by these studies. In one study, simple feedback procedures were used to increase the frequency of submission of suggestions by mental health employees in a state-supported treatment facility (Quilitch, 1978). The purpose of the suggestion system was to promote staff morale and improve communications, human relations, and services. The suggestion system, along with a feedback intervention was responsible for bringing attention to and successfully solving numerous problems relating to personnel practices, environmental conditions, and the proper care of mentally retarded persons.

Feedback also has been shown to improve the performance of mental health technicians (MHT) in an adult psychiatric unit of a medium-sized mental hospital (Kreitner, Reif, & Morris, 1977). This study indicated that feedback improved the performance of MHTs in three important areas: (1) conducting and completing group therapy sessions, (2) conducting and completing individual therapy sessions, and (3) completing assigned daily routine duties. The results indicated that group therapy sessions increased more than 100%, individual therapy sessions increased more than 300%, and daily routine performance increased almost 100%. In addition, shift supervisors noted a marked decrease in staff conflict over job assignments and overall reduction in complaints from patients.

Feedback has been used to improve the extent to which staff carry out new procedures in a hospital ward for mentally handicapped persons (Coles & Blunden, 1981). In the first of two studies reported, the introduction of a structured activity period resulted in increased levels of engaged behaviors of the residents along with a decrease in the number of neutral or inappropriate behaviors. However, these

improvements were not maintained until a feedback system was introduced that resulted in even further improvements in client behaviors.

A study at a state-supported psychiatric hospital used three forms of feedback that were shown to be responsible for large increases in treatment activity (Prue, Krapfl, Noah, Cannon, & Maley, 1980). Performance feedback appeared to function as direct reinforcement for staff treatment behaviors. In addition, the authors suggested that other effects may have resulted from three forms of feedback including: (a) an increase in the number of treatment-related conversations among staff members, (b) better defined job responsibilities, (c) discriminative control leading to avoidance of punishment from public display of feedback reflecting a low rate of treatment activity, and (d) reactivity to self-monitoring.

A study to determine the effects of supervisor verbal feedback and verbal feedback with approval statements on the performance of staff was conducted in a residential facility for multi-handicapped retarded persons (Brown, Willis, & Reid, 1981). The use of verbal feedback alone was shown to reduce staff's off-task behaviors. When approval statements were paired with feedback, not only did levels of off-task behaviors remain low, but the program also led to an increase in staff-resident interaction. In a similar study, a self-recording and supervisor feedback program was introduced in a state residential facility for the developmentally disabled (Burg, Reid, & Lattimore, 1979). Results demonstrated that staff-patient interaction increased from 1 in every 14 observations during baseline to 1 in every 2 observations during the intervention phase.

More recent interventions have involved staff in monitoring their own performance and delivering self-reinforcing statements. Burgio, Whitman, and Reid (1983) conducted a study in the residential setting of a state developmental center. Staff members were introduced to a performance management system that



incorporated the following components: (a) goal setting, (b) self-monitoring and graphing behavior, and (c) administering self-praise following personal evaluation of performance. After the training period, increases in the frequency of staff-resident interaction occurred for all staff members who participated in the study.

Self-monitoring, supervisor feedback and staff self-management also have been used to increase staff on-task behavior and compliance with scheduled activities at an intermediate care facility for mentally retarded persons (Richman, Riordan, Reiss, Pyles, & Bailey, 1988). The results indicated elevations in both on-task and on-schedule behavior using a self-monitoring procedure. In addition, performance was maintained when supervisor feedback component was added to the program.

#### Focus of Study

Overall, research on performance management in mental health treatment indicates that feedback and goal setting lead to a substantial improvements in terms of both quality and quantity of treatment practices. However, many of the programs investigated were applied with a small number of clients and staff and, for the most part, by professional staff. Thus, more large scale, practical applications of this technology by nonprofessional staff are needed (Parsons, Schepis, Reid, McCarn, & Green, 1987). In addition, a majority of previous studies have focused on levels of staff performance as the dependent variable. Though a high level of staff performance has been recognized as a factor of importance, this study will measure the overall percent of patients who are engaged in treatment-related activities with staff. Hence, a primary thrust of this project will be to increase the time each day that each patient is involved in active treatment. Thus, the emphasis will be on the patient treatment process rather than staff behavior per se.

The primary purpose of this project is to evaluate a performance management program using a goal setting and feedback system implemented by unit supervisors in a large psychiatric hospital. Components found to be most effective by previous researchers will be included in the intervention (Balcazar et al., 1986). The focus of the research study will be to improve active treatment for mental health patients by increasing levels of staff-patient interaction

## CHAPTER II

### METHOD

#### Participants and Setting

Nursing Supervisors, Residential Care Aids (RCAs) and patients of two continuing care units of a large regional psychiatric hospital were involved in the study. The hospital served approximately 500 patients from a mixed urban/rural area. Most of the patients on the two units were diagnosed as "chronic schizophrenic," and each unit contained approximately 25 patients and 4 direct care staff members. Staff members were supervised directly by a shift nurse and indirectly by a section supervisor who had responsibility for several units.

Observations were conducted during the day shifts. Intervention was confined to a single unit, although data were collected from the other unit of the hospital for comparison purposes.

#### Dependent Variable

The percentage of staff-patient engagement on two units during the day shift served as the dependent variable. Engagement was defined as participation by patients in activities requiring direct interaction with a staff member or participation in an activity under staff supervision, but not in direct interaction with staff. An interaction was considered "direct" under the following conditions: a patient is looking at and/or speaking to, or being spoken to by, any hospital staff member. An interaction was considered "indirect" under the following conditions: a hospital staff

member is supervising client activities, and (a) materials are in use by the patient(s) and/or (b) the patient is looking at and/or speaking to, or being spoken to by, any other patient. Note that a "non-interaction" episode was any event that did not meet the above criteria.

A diagram that depicts the layout of the units was used as an observation form by the observers to record the physical location of each patient four times daily, twice on each unit (see Appendix A for a sample floor plan). The observers would follow an assigned route pattern while observing each unit. Two thirty-minute time blocks were chosen randomly each day for observation on both units. The order in which to observe each unit was determined randomly with both units being observed once during each thirty-minute time block. (See results for description of changes to more intensive observation format.) These time blocks were chosen between the hours of 9:00 a.m. and 11:30 a.m. and 12:30 p.m. and 2:00 p.m. because they did not interfere with meals, medication, personal care and other usual day-to-day activities. Thus, these were the time periods that would allow staff to perform active treatment assignments. Upon entering each unit, observers would begin charting by following the assigned route pattern. The observers determined whether each patient was interacting with a staff member directly or indirectly and plotted the physical location of each patient. Staff placement was noted only when a patient was interacting with a staff member at the time of observation. The names of staff or patients were not recorded on the observation forms. Three performance indices were calculated for each observation: (1) percent of patients on the unit who were interacting directly with staff, (2) percent of patients who were interacting indirectly with staff, and (3) percent of patients who were not engaged either directly or indirectly with staff.

### Observation

Observers completed brief training prior to the study. Observation training included: (a) presentation of an explanation and examples of behaviors to be coded, (b) instruction in the correct use of the observation form, (c) description of the assigned route pattern to be used while observing each unit, and (d) practice observing with feedback from the experimenter prior to participation in the study. The observers were not instructed regarding the experimental conditions, although a general explanation of the study's focus (i.e., improving staff-patient interaction) was given.

### Reliability

Patient location and engagement data were charted by a second independent observer during 12.6% of the observation periods. The observers followed the assigned route pattern together and recorded their observations simultaneously and independently during reliability checks. Interaction occurrence agreement was calculated using the following:

$$\frac{\text{Number of Agreements}}{\text{Number of Agreements} + \text{Disagreements}} \times 100$$

where an agreement was scored when the recorded response of the observers on the observation forms was consistent in regards to physical location and coded behaviors of patients, and a disagreement was defined as a discrepancy between observers in their recorded responses with regard to location or behavior.

### Independent Variable

A daily-adjusted goal setting and feedback procedure was implemented to improve staff-patient engagement levels and served as the intervention. A two-hour

training session was conducted to provide instruction to each supervisor in correctly implementing goal setting procedures. The intervention consisted of the following elements:

### Goal Setting

The supervisor provided each employee with a list of patients and assigned activities to be carried out with the patients each morning using an Active Treatment Card (see Appendix B for a sample card). The assigned activities were designated by a reference number which referred to a Treatment Method Sheet (see Appendix C for a sample method sheet) and indicated a time period within which the treatment activities were to be completed.

The Treatment Method Sheets were selected for each patient by professional staff. Each activity was referenced to the treatment plan objective and, was selected to be important to the overall treatment program for patients. Thus, anytime a Treatment Method Sheet was selected from the file of a patient, the staff member who carried out the activity could be sure that it was directly related to the treatment plan.

### Self Monitoring

Staff members were instructed to maintain a daily record of their treatment interactions with patients using the Active Treatment that detailed (a) their assigned treatment activities with specific patients to be completed that day, and (b) whether or not these activities were accomplished. RCAs were required to indicate each treatment activity listed on the card as "complete" or "incomplete" and to drop the card in a box in the supervisor's office at the end of each day.

The percentage of patients interacting at each observation time was determined and charted to track the overall effectiveness of the Active Treatment Program. Thus,

if 12 of 24 patients were observed to be interacting with staff members during an observation, then the total engaged would be one half of all patients or fifty percent. A percentage figure was calculated for each observation period. The percentages were plotted on a summary chart on a daily basis so that the effects of the program on overall interaction levels could be monitored. This chart was posted on the unit bulletin board in the nurses' station where all staff took breaks and completed paper work tasks.

### Procedures

1. Staff members were informed during a weekly meeting at the start of baseline that observations of staff-patient interactions would be made. Assurance was provided that staff members would not be directly observed or identified by name. Assurance was also given that the data collected would not be used for evaluation purposes.

2. Approximately one month after the beginning of the observations, staff members were told by the supervisor that a meeting would be held with them each morning to assign specific goals for the day as a means of improving staff-patient interaction. The shift supervisor assigned each patient to a staff member so that all patients on the ward were assigned in equal numbers to staff. Thus, if the census was 25 patients and 5 staff were on duty, each staff member would be assigned 5 patients.

3. The shift supervisor wrote the names of patients who were assigned and the time blocks within which an activity was to be completed on Active Treatment Cards for each staff member. At least one activity was assigned to be carried out for each patient each day between the hours of 9:00 a.m. and 11:30 a.m. and one between 12:30 p.m. and 2:00 p.m. These times were chosen because they represented periods during which staff members have maximum optional time.

4. In order to complete a treatment activity, staff were instructed to go to files for patient activities and pick the Treatment Method Sheet assigned for each patient on the Active Treatment Card for each patient for each time period, to carry out the activity by the time indicated and to record whether the activity was "complete" or, "not complete." RCAs were instructed to place their completed cards in a drop box at the end of each shift.

5. The shift supervisor collected the Active Treatment Cards from the drop box and summarized the percent of activities that were completed as scheduled for all staff and all patients. The resulting data were plotted on a graph that was clearly displayed on the unit.

#### Experimental Design

An experimental-control group comparison was used to determine the effects of the independent variable. The intervention was administered in one unit of the hospital and the staff-patient engagement patterns were monitored on a daily basis throughout the study. Staff-patient engagement patterns were also monitored on a second unit which underwent no intervention and which functioned as a control group for comparison purposes. The average weekly engagement levels for the two units were compared prior to and following the intervention using standard statistical treatments.



## CHAPTER III

### RESULTS

#### Observational Reliability

Interobserver agreement was assessed using the percentage agreement method. Sixty-two interobserver agreement checks were made during the study to assess overall agreement (interaction and non-interaction combined) and staff-patient interaction alone. Reliability checks were conducted during 12.6% of the observations. Overall interobserver agreement for the sixty-two checks was 95.06% (range, 72.2% to 100%). Overall agreement on staff-patient interaction alone was 90.19% (range, 0% to 100%). It should be noted that for some sessions only a small number of interactions occurred (1 or 2) and that the low reliability figures reflect disagreement on such occasions.

#### Implementation Outcomes

In order to clearly present the findings from this study, the data were summarized separately across several important phases for the experimental unit. Phase I refers to the baseline period in which interaction levels were assessed but no change in management was arranged. Phase II refers to when staff on the experimental unit were instructed to begin implementing the program; Active Treatment Cards were handed out by the shift supervisor and staff were provided with Treatment Method Sheets and instructions. Phase III indicates the start of intensified observation; at this time one hour was randomly selected from morning and one from afternoon on each

of four days per week and six time sample observations were conducted on each unit. Phase IV represents the time period when a new shift supervisor was placed on the experimental unit.

Table 1 shows the extent to which staff implemented assigned goals. The data begin in the the last week of February 1989 (Phase II) and continue through July 12, 1989 (Phase IV). The percentage of assigned tasks that were implemented varied from 0 to 100 during this period. Early in the project, goals were not attempted or completed on many days. However, during Phase III, implementation exceeded 80% on most occasions, meaning that 80% or more of assigned activities were attempted. This level of implementation continued until data collection stopped in July 1989 (Phase IV).

Table 1

Summary of Percentage of Activities Completed by Staff and Days  
Activities Assigned by Supervisor for Experimental Unit

Phase	Percent of Activities Completed by Staff	Percent of Days Activities Assigned by Supervisor
I	N/A	N/A
II	53.85	60.00
III	91.36	31.43
IV	90.23	45.45

Figures 1 and 2 present the engagement data from the experimental unit. Figure 3 presents the same type of data for the control unit. Phase I panels of Figures 1 and 2 show data from the baseline period when no management program was used; generally, engagement levels varied between 0% and 15%. The supervisors were

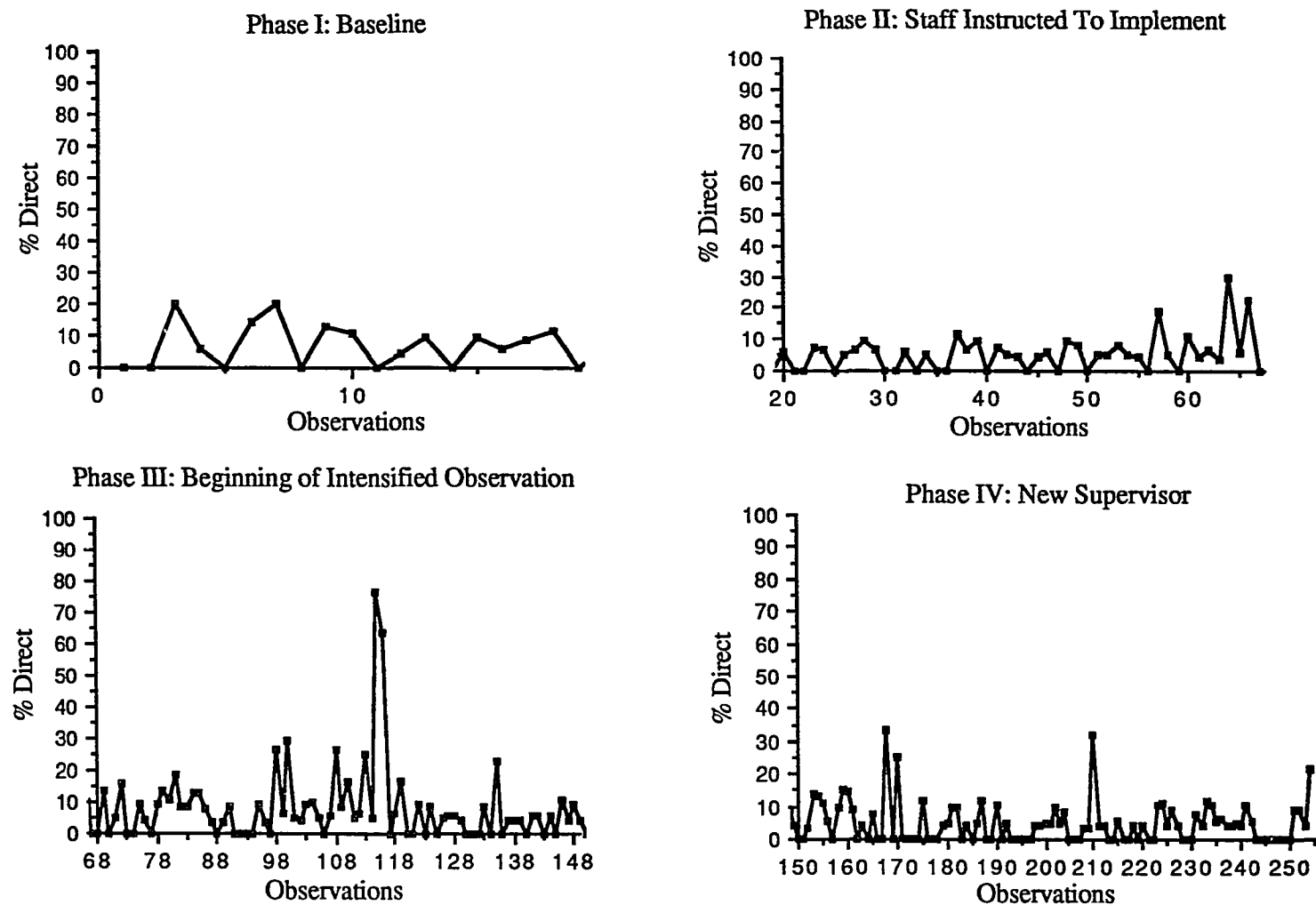


Figure 1. Staff-Patient "Direct" Engagement Data for Experimental Unit.

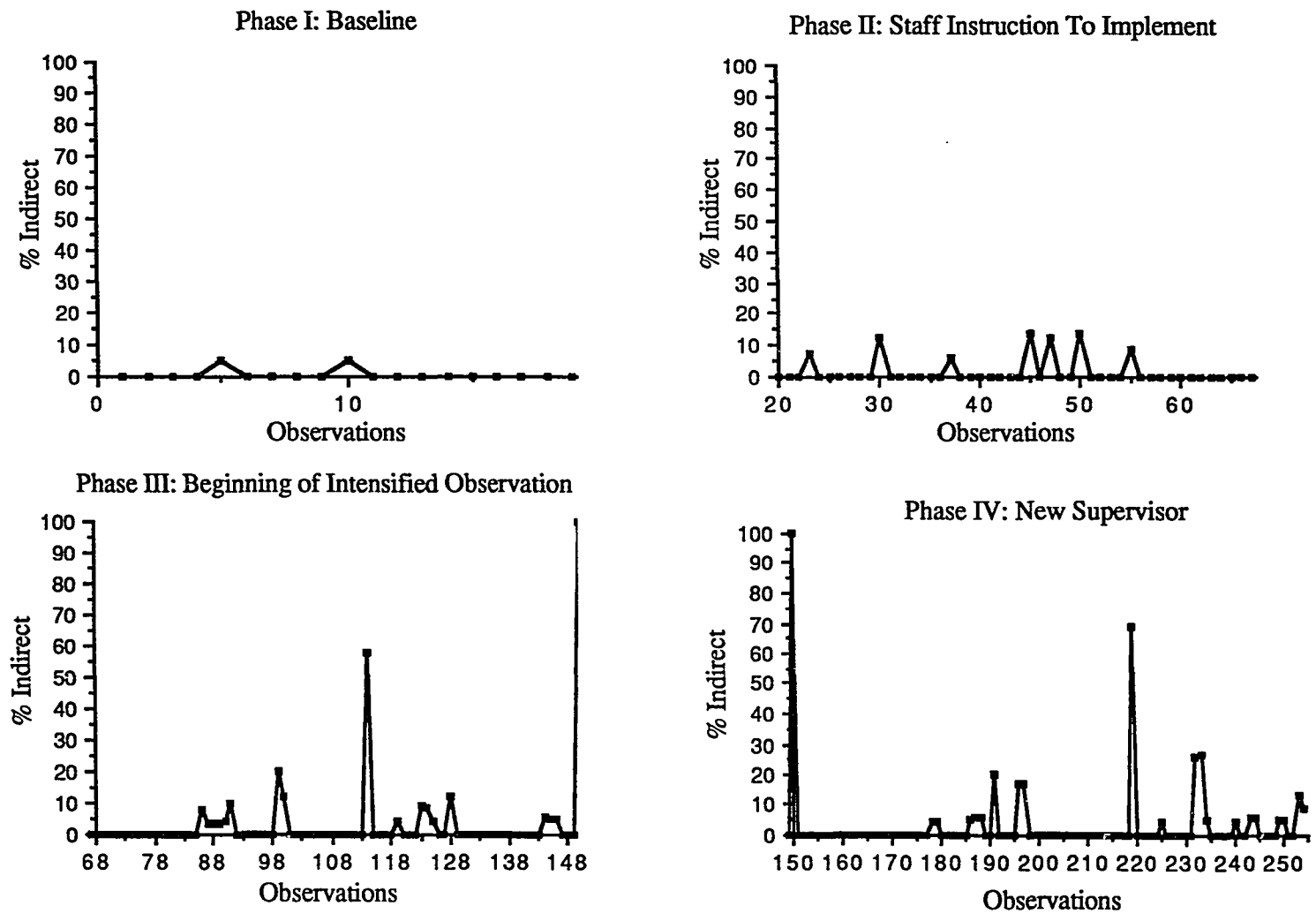
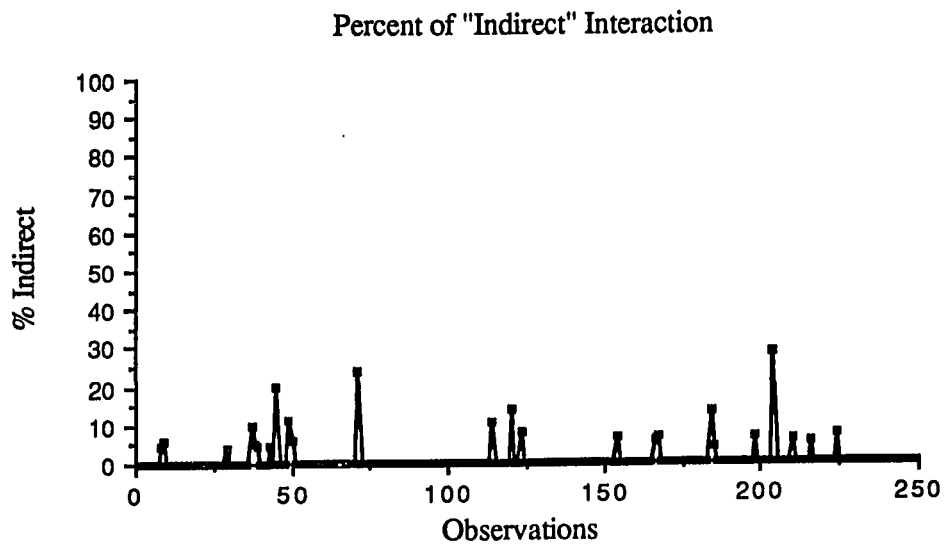
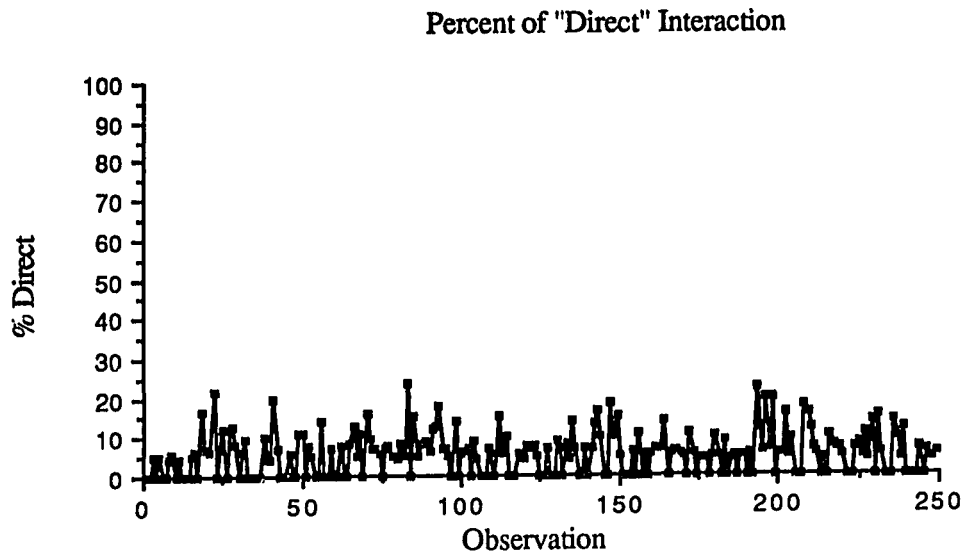


Figure 2. Staff-Patient "Indirect" Engagement Data for Experimental Unit.



**Figure 3. Staff-Patient "Direct" and "Indirect" Engagement Data for Control Unit.**

trained and instructed to implement the program (Phase II) after the end of baseline. No noticeable change in engagement patterns was observed during this period. However, it should be noted that implementation was sporadic at this point..

The first bottom panel of Figures 1 and 2 present engagement data from Phase III. During this period, the observation system was changed to be more sensitive in detecting interactions. Prior to this time, two observations were made on each unit at randomly selected times each day. Beginning with Phase III, however, one hour was randomly selected from morning and one from afternoon on each of four days per week and six time sample observations on each unit were conducted during each observation hour (one every 10 minutes). During each observation, the percentage of patients directly engaged, percent indirectly engaged and those not engaged but present on the unit were recorded. During the intensified observation period, the trends were very similar to those in the early portion of the project (depicted in Phase I and Phase II, Figures 1 and 2). The second bottom panel of Figures 1 and 2 (Phase IV) presents data collected when the shift supervisor left the experimental unit and was replaced with a new supervisor. Again, trends in the engagement levels were similar (i.e., between 0% and 15%) on most occasions. The data for the control unit are presented in Figure 3.

Table 2 shows the extent to which patients for the experimental and control units were "directly" as well as "indirectly" interacting with staff across observational phases. No statistical comparison between units was conducted due to the low percentage of staff-patient engagement levels. Throughout all four phases for both units, mean percent of direct engagement levels was less than ten and mean percent of indirect engagement levels was less than five. The data do indicate an upward trend for the experimental unit patients in indirect (i.e., small groups, social events, etc.) interaction with staff members as well as in larger proportions than patients on the

control unit. However, the absolute difference is small and probably not meaningful in a therapeutic sense.

**Table 2**  
**Mean Percent of Patients Interacting Across Observations for "Direct" and "Indirect" Engagement for Experimental and Control Units**

Phase	Direct/Indirect Engagement	<u>Experimental Unit</u>		<u>Control Unit</u>	
		Mean	<u>SD</u>	Mean	<u>SD</u>
I	Direct	6.95	6.73	1.74	2.44
II	Direct	5.51	5.88	5.25	5.76
III	Direct	7.99	12.10	6.19	5.14
IV	Direct	4.84	6.36	5.63	5.42
I	Indirect	0.54	1.62	0.71	1.82
II	Indirect	1.54	3.94	1.27	3.70
III	Indirect	2.18	7.33	0.68	3.30
IV	Indirect	3.42	12.61	0.84	3.39

## CHAPTER IV

### DISCUSSION

The results reported above indicated that: (a) the management program could be implemented on a low-intensity scale (one activity per patient per day) using typical staffing levels in a psychiatric treatment setting, (b) the effects of this level of intervention were small relative to those observed in a no-program control unit, and (c) changes appeared most promising in the area of "indirect" rather than "direct" engagement. Furthermore, these results were observed under conditions where goals were set and feedback was provided in relatively weak form (i.e., self recording and public posting of group data with little supervisor backup).

Several problems with the current program may have led to the lack of meaningful effects. First, the program required only minimal staff-patient interaction (i.e., 1 to 2 activities per day). This was done to promote support of the program by staff and because more demanding requirements may have interfered significantly with existing patterns of work leading to countercontrol. It is reasonable to assume that greater effects would be observed with increased intensity and that future programs should require more intense levels of interaction.

A second critical factor in this study may have been the weak and sporadic feedback provided by the supervisor. It has been shown that feedback delivered by supervisors leads to consistent performance effects more frequently than feedback from any other source (Balcazar et al., 1986). Greater effects would be observed with the use of a more powerful feedback system. This would entail feedback characteristics that include stronger supervisor support as well as a focus on



individual performance rather than group output. A more effective approach might require unit Psychologists to pick the Active Treatment Cards each day on each unit, summarize the data, post a graph of the results and provide feedback to the RCAs directly and personally regarding their level of success in achieving the goals. This would provide more personalized feedback from professional staff in addition to feedback from immediate supervisors and arrange a stronger link between treatment teams and the RCAs.

A third problem with the present study may have been failure to employ feedback data that define specific behaviors required by staff to increase interaction levels. A lack of specificity has been cited as a characteristic of feedback with less than optimal effectiveness (Balcazar et al., 1986). It is logical to infer that greater effects may have been noted had the supervisor specifically defined the desirable behaviors required by staff to increase engagement levels. It is likely that more powerful effects would be realized if the unit Psychologist monitored the notes/results of activities on the Active Treatment Cards turned in by the RCAs, investigated requests for assistance by RCAs, and incorporated information from the Active Treatment Cards into the treatment planning process. These steps would lead to more specific instruction concerning what staff should accomplish with patients and how to address problems in implementation.

A final factor that may have contributed to the program's weak effects is that the feedback stimuli may not have functioned as effective conditioned reinforcers. Balcazar et al. (1986) stated that "Feedback will function to prompt or reinforce improved performance if and only if it is related to some primary consequence" (p. 76). The present study employed feedback which was private, verbal and frequent. However, it did not include tangible incentives as backups and relied solely on social control by supervisors. Such consequences were probably weak because supervisors

evidenced little rapport with staff and little, if any, control of important financial and social consequences. It is reasonable to assume that greater effects would be observed if the supervisor had more control over important backup consequences for staff performance.

In addition to the delivery of performance feedback, the present study utilized daily goals which were set by listing treatment activities to be done on the Active Treatment Cards. However, the data indicated that the goal statements did not consistently increase the probability of engaging in treatment activities. In this regard, it has been shown that in order for goals to acquire control over performance, meeting a goal must be paired frequently with a positive consequence or removal of negative consequence so that the goal can then function as a conditioned reinforcing stimulus (Fellner & Sulzer-Azaroff, 1984). It is therefore reasonable to assume that behaviors exhibited in response to goal statements probably were not followed by effective consequences. Furthermore, it seems clear that goal attainment (indicated by marking an activity complete) did not serve a reinforcing function. Subsequent applications of this strategy should include a thorough analysis of the factors which lead goals to function effectively as antecedent controlling stimuli. Fellner and Sulzer-Azaroff (1984) have suggested that several factors be examined including "individual history and current contingencies in relation to goals, how specific and reasonable the goals, and whether the individuals involved have participated in the setting of the goals or reinforcement has been paired with it" (p. 35).

An additional factor that may have led to weak results in the program is staff resistance to change. Baron and Greenberg (1990) have noted both individual and organizational variables that are barriers to change in an organizational setting. These authors point out that staff may not cooperate with new requirements because of threatened disruption of familiar patterns or the threat of increased effort needed to

support new programs. The unfamiliar conditions of the performance management program may have caused uneasiness on the part of staff for these reasons; more extensive job requirements were introduced along with performance review and evaluation procedures. The program may also have threatened disruption of social relationships among staff members. Although no explicit changes in job assignments were included as part of the program, certainly the new management system could have led to reassignment of job responsibilities and, as such, may have caused concern among staff that an important source of social rewards would be taken away. In addition, as in many organizations, daily work performed by staff was probably well learned and habitual in nature. Thus, any required change in staff work habits as well as the challenge to develop new skills may have threatened a loss of comfort produced by routine practices.

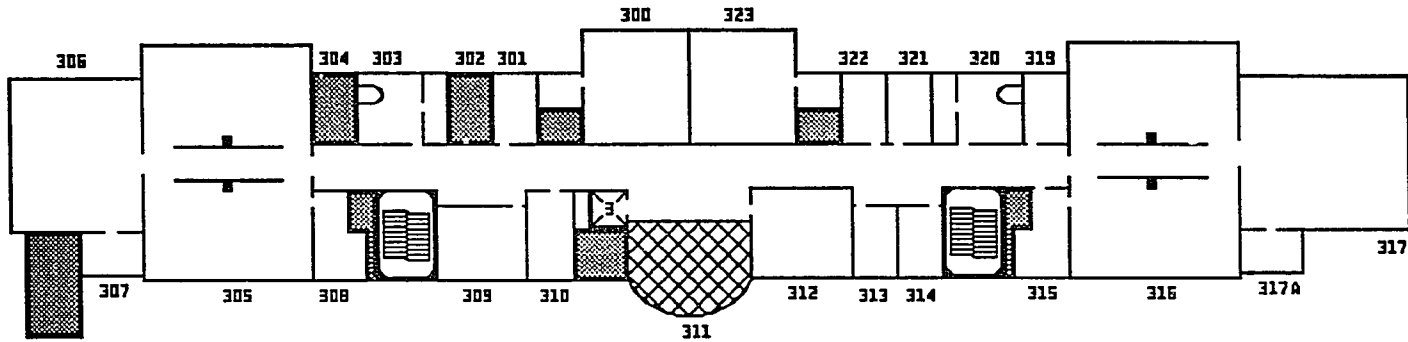
Finally, a history of unsuccessful change efforts may have led staff to be reluctant to accept any further attempts to introduce change. Anecdotally, staff were heard to comment that new programs had been introduced in the past without success and that this program was also certain to fail.

The results of the present study do not support other findings reported in the literature. Richman et al. (1988) found that staff-patient interaction levels increased when self recorded feedback was provided. However, their study was done in a training center for persons with developmental disabilities where the clients might have placed fewer demands on the management system and staff time. Few studies of such systems have been done in psychiatric hospital settings. One that was successful, Prue et al. (1980) differed from the present study in that the feedback was more specific (i.e., feedback interventions included the highest levels of the hospital's administration); these results suggest that performance feedback functioned as a reinforcer for the staff treatment behaviors. However, it must be noted that the

authors admit their reinforcement interpretations may have ignored other changes in the environment related to feedback manipulations.

Overall, the present study demonstrated that performance management programs in psychiatric hospital settings may not produce performance changes often observed in other settings. Whether this is the result of problems with the present study or with the reaction of persons in this type of environment to typical performance management procedures is unclear. Certainly, additional data are needed to address this question.

**Appendix A**  
**Sample Floor Plan**



**Room Key**

- 300, 306, 323: Dorm
- 301, 309: Private Bedroom
- 302: No Access
- 303, 320: Tub Room
- 304: Medication Station
- 305, 316: Ward
- 307, 308, 315, 317A: Toilet
- 310, 321: Visiting Room
- 311: Office
- 312: Kitchen
- 313, 314: Seclusion Room
- 317: Day Room
- 319: Laundry Room
- 322: Treatment/Examination Room

Off Unit Activities	On Unit Activity	Summary Data																																																																						
<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 80%;"></td> <td style="text-align: right; vertical-align: bottom;"><b>No.</b></td> </tr> <tr> <td>1. Activities</td> <td>_____</td> </tr> <tr> <td>    a) _____</td> <td>_____</td> </tr> <tr> <td>    b) _____</td> <td>_____</td> </tr> <tr> <td>    c) _____</td> <td>_____</td> </tr> <tr> <td style="text-align: right;">    subtotal</td> <td>_____</td> </tr> <tr> <td>2. Central Occupational Therapy (COT)</td> <td>_____</td> </tr> <tr> <td>3. MD appmt./clinic</td> <td>_____</td> </tr> <tr> <td>5. Ground Permit</td> <td>_____</td> </tr> <tr> <td>6. Group Therapy</td> <td>_____</td> </tr> <tr> <td>7. Leave of Absence (LOA)</td> <td>_____</td> </tr> <tr> <td>8. Off Grounds (OG)</td> <td>_____</td> </tr> <tr> <td>9. School</td> <td>_____</td> </tr> <tr> <td>10. Therapy Work Station (TWS)</td> <td>_____</td> </tr> <tr> <td>11. Town Pass (TP)</td> <td>_____</td> </tr> <tr> <td>12. Unauthorized Leave (UL)</td> <td>_____</td> </tr> <tr> <td>13. Work Group</td> <td>_____</td> </tr> <tr> <td style="text-align: right;">Total</td> <td><input style="width: 40px;" type="text"/></td> </tr> </table>		<b>No.</b>	1. Activities	_____	a) _____	_____	b) _____	_____	c) _____	_____	subtotal	_____	2. Central Occupational Therapy (COT)	_____	3. MD appmt./clinic	_____	5. Ground Permit	_____	6. Group Therapy	_____	7. Leave of Absence (LOA)	_____	8. Off Grounds (OG)	_____	9. School	_____	10. Therapy Work Station (TWS)	_____	11. Town Pass (TP)	_____	12. Unauthorized Leave (UL)	_____	13. Work Group	_____	Total	<input style="width: 40px;" type="text"/>	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 80%;"></td> <td style="text-align: right; vertical-align: bottom;"><b>No.</b></td> </tr> <tr> <td>1. Conversation</td> <td>_____</td> </tr> <tr> <td>2. Game Playing</td> <td>_____</td> </tr> <tr> <td>3. Grooming</td> <td>_____</td> </tr> <tr> <td>4. Arts/Crafts</td> <td>_____</td> </tr> <tr> <td>5. Medical Exam</td> <td>_____</td> </tr> <tr> <td>6. Conversation/meeting with professional staff</td> <td>_____</td> </tr> <tr> <td>7. Community Meeting</td> <td>_____</td> </tr> <tr> <td>8. _____</td> <td>_____</td> </tr> <tr> <td>9. _____</td> <td>_____</td> </tr> <tr> <td>10. _____</td> <td>_____</td> </tr> <tr> <td style="text-align: right;">Total</td> <td><input style="width: 40px;" type="text"/></td> </tr> </table>		<b>No.</b>	1. Conversation	_____	2. Game Playing	_____	3. Grooming	_____	4. Arts/Crafts	_____	5. Medical Exam	_____	6. Conversation/meeting with professional staff	_____	7. Community Meeting	_____	8. _____	_____	9. _____	_____	10. _____	_____	Total	<input style="width: 40px;" type="text"/>	<p>Date _____ Time _____ Observer _____</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; text-align: center;">Census</td> <td style="width: 50%; text-align: center;">Interaction (On Unit)</td> </tr> <tr> <td>Off Unit <input style="width: 40px;" type="text"/></td> <td>X (None) <input style="width: 40px;" type="text"/></td> </tr> <tr> <td>On Unit <input style="width: 40px;" type="text"/></td> <td>(Direct) <input style="width: 40px;" type="text"/></td> </tr> <tr> <td>Total (N) <input style="width: 40px;" type="text"/></td> <td>(Indirect) <input style="width: 40px;" type="text"/></td> </tr> <tr> <td>Deviation <input style="width: 40px;" type="text"/></td> <td></td> </tr> </table>	Census	Interaction (On Unit)	Off Unit <input style="width: 40px;" type="text"/>	X (None) <input style="width: 40px;" type="text"/>	On Unit <input style="width: 40px;" type="text"/>	(Direct) <input style="width: 40px;" type="text"/>	Total (N) <input style="width: 40px;" type="text"/>	(Indirect) <input style="width: 40px;" type="text"/>	Deviation <input style="width: 40px;" type="text"/>	
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**Appendix B**  
**Sample Active Treatment Card**

**ACTIVE TREATMENT CARD**

<b>ACTIVE TREATMENT CARD</b>				
DATE _____		SHIFT _____		
NAME OF STAFF MEMBER _____				
CLIENT	TIME	ACTIVITY #	RESULTS	CHECK
MAKE COMMENTS ON BACK OF CARD				



**Appendix C**  
**Sample Treatment Method Sheet**

## **METHOD SHEET #1**

### **IDENTIFYING WARNING SIGNS OF A PSYCHOTIC EPISODE**

THE FOLLOWING EXERCISE IS TO BE USED BY STAFF IN INTERACTIONS WITH PATIENTS. THE DIRECTIONS LISTED SHOULD BE FOLLOWED AS CLOSELY AS POSSIBLE. THE EXERCISE CAN BE USED WITH INDIVIDUALS; HOWEVER, IS PROBABLY BEST USED WITH A SMALL GROUP OF PATIENTS (3-5 PATIENTS) SITTING AT A TABLE TOGETHER OR FAIRLY CLOSE TOGETHER IN A ROOM. THE ACTIVITY SHOULD REQUIRE NO MORE THAN 20 MINUTES AND SHOULD BE DONE FOR NOT LESS THAN 10 MINUTES.

#### **OVERVIEW**

This exercise is designed to help patients identify the early warning signs of a psychotic relapse and respond to prevent it from occurring or to reduce unwanted effects.

#### **PROCEDURE**

**STAFF SHOULD DO THE FOLLOWING:**

**1. READ (OR SAY IN YOUR OWN WORDS) TO PATIENTS THE FOLLOWING:**

**YOU ARE HERE BECAUSE SOMETHING WENT WRONG IN YOUR LIFE AND YOU NEEDED HELP. IF WE LOOK VERY CLOSELY AT WHAT HAPPENED TO YOU A FEW DAYS OR WEEKS BEFORE YOU CAME TO THE HOSPITAL, WE WOULD PROBABLY SEE SOME SIGNALS THAT YOU WERE ABOUT TO HAVE PROBLEMS --- TO GET SICK.**

**IT IS SORT OF LIKE A COLD. HAVE YOU EVER NOTICED THAT A FEW DAYS BEFORE YOU GET A COLD YOU DON'T FEEL GOOD? YOU MIGHT HAVE A HEADACHE OR RUNNY NOSE AND NOTICE THAT YOUR THROAT IS TENDER AND SCRATCHY**

\*\*\*\*\*

**2. ASK PATIENTS IF THEY UNDERSTAND AND HAVE FELT THIS WAY (IF NOT, TRY TO USE OTHER EXAMPLES THAT HELP THEM TO UNDERSTAND). ONCE IT SEEMS THAT MOST UNDERSTAND, GO CONTINUE WITH THE INFORMATION BELOW. A GOOD WAY TO SEE IF THEY UNDERSTAND IS TO ASK SPECIFIC INDIVIDUALS TO DESCRIBE HOW THEY FEEL WHEN THEY ARE GETTING A COLD.**

\*\*\*\*\*

**CONTINUED NEXT PAGE**

**SAMPLE METHOD SHEET FOR ACTIVE TREATMENT PROGRAM CONTINUED**

**3. SUMMARIZE OR READ THE FOLLOWING TO CONTINUE THE EXERCISE. THESE FEELINGS THAT WE ARE TALKING ABOUT ARE CALLED "WARNING SIGNS" AND THEY LET YOU KNOW BEFORE YOU GET SICK THAT YOU ARE CLOSE TO GETTING SICK. THE SAME THING MAY HAPPEN WHEN YOU HAVE A PSYCHOTIC EPISODE. YOU MAY BEGIN TO FEEL THAT THINGS AREN'T QUITE RIGHT BEFORE YOU GET VERY UPSET AND OUT OF CONTROL AND HAVE TO COME TO THE HOSPITAL TO GET HELP. IF YOU CAN FIGURE OUT WHEN THESE WARNING SIGNALS OCCUR, THEN IT IS POSSIBLE THAT YOU CAN DO SOMETHING TO KEEP FROM GETTING VERY SICK.**

\*\*\*\*\*

**4. PAUSE AND ASK PATIENTS IF THEY HAVE EVER FELT THESE WARNING SIGNS AND IF SO, ASK THEM TO DESCRIBE THEM TO THE GROUP. IF ONE PERSON REPORTS THAT THEY THEY HAVE FELT THESE THINGS, TRY TO GET THEM TO TALK ABOUT THEM MORE. ASK QUESTIONS TO KEEP THEM TALKING ABOUT HOW THEY FEEL WHEN THEY ARE ABOUT TO GET SICK OR GET OUT OF CONTROL. ENCOURAGE ALL PATIENTS WHO WILL DO SO TO TALK ABOUT THEIR WARNING SIGNS. IF POSSIBLE, WRITE THE SIGNS ON A CHALK BOARD OR A SHEET OF PAPER AND GO OVER THEM WITH THE PATIENTS.**

\*\*\*\*\*

**5. CONTINUE THE EXERCISE BY READING OR PARAPHRASING THE FOLLOWING:**

**THE IMPORTANT THING IS THAT WHEN THESE WARNING SIGNS OCCUR, YOU SHOULD CONTACT YOUR DOCTOR OR THERAPIST OR SOCIAL WORKER OR SOMEONE WHO CAN HELP YOU TO KEEP FROM GETTING SICKER. WHEN YOU FEEL THESE WARNING SIGNS COMING ON, ASK FOR HELP FROM A PERSON WHO KNOWS WHAT TO DO. YOU CAN DO THIS WHEN YOU ARE HERE IN THE HOSPITAL TOO. YOU CAN ASK STAFF TO HELP IF YOU FEEL THE WARNING SIGNS.**

\*\*\*\*\*

**6. END THE ACTIVITY BY ASKING PATIENTS TO REPEAT WHAT THEY SHOULD DO WHEN THEY FEEL THE WARNING SIGNS. MAKE SURE THAT AT LEAST ONE OR TWO OF THEM ACTUALLY SAY THAT THEY SHOULD SEEK HELP FROM A DOCTOR OR THERAPIST IF THEY FEEL THESE WARNING SIGNALS. AND THAT THEY UNDERSTAND THAT THEY CAN TELL STAFF ABOUT THEM WHEN THEY ARE IN THE HOSPITAL.**

**Appendix D**

**Approval Letter From the Human Subjects  
Institutional Review Board**



*Human Subjects  
Institutional Review Board*

TO: Carman Stark  
RE: Research Protocol  
FROM: Ellen Page-Robin, Chair *ERP*  
DATE: January 9, 1989

This letter will serve as confirmation that your research protocol, "Improving Active Treatment Through Performance Management" is now complete and has been signed off by the HSIRB.

If you have any additional questions, please contact me at 387-2647.

## BIBLIOGRAPHY

- Balcazar, F., Hopkins, B. L., & Suarez, V. (1986). A critical, objective review of performance feedback. Journal of Organizational Behavior Management, 7, 65-89.
- Baron, R. A. & Greenberg, J. (1990). Behavior in organizations: Understanding and managing the human side of work. Needham Heights, MA: Allyn & Bacon.
- Brown, K. M., Willis, B. S., & Reid, D. H. (1981). Differential effects of supervisor verbal feedback and feedback plus approval on institutional staff performance. Journal of Organizational Behavior Management, 3, 57-68.
- Burg, M. M., Reid, D. H., & Lattimore, J. (1979). Use of self-recording and supervisor program to change institutional staff behavior. Journal of Applied Behavior Analysis, 12, 363-375.
- Burgio, L. D., Whitman, T. L., & Reid, D. H. (1983). A participative management approach for improving direct care staff performance in an institutional setting. Journal of Applied Behavior Analysis, 16, 37-53.
- Coles, E., & Blunden, R. (1981). Maintaining new procedures using feedback to staff, a hierarchical reporting system, and a multidisciplinary management group. Journal of Organizational Behavior Management, 3, 19-35.
- Fellner, D. J., & Sulzer-Azaroff, B. (1984). A behavioral analysis of goal setting. Journal of Organizational Behavior Management, 6, 33-35.
- Kreitner, R., Reif, W. E., & Morris, M. (1977). Measuring the impact of feedback on the performance of mental health technicians. Journal of Organizational Behavior Management, 1, 105-109.
- Latham, G. P., & Yukl, G. A. (1975). A review of research on the application of goal setting in organizations. Academy of Management Journal, 18, 824-845.
- Parsons, M. B., Schepis, M. M., Reid, D. H., McCarn, J. E., & Green, C. W. (1987). Expanding the impact of behavioral staff management: A large scale, long-term application in schools serving severely handicapped students. Journal of Applied Behavior Analysis, 20, 139-150.
- Prue, D. M., & Fairbank, J. A. (1981). Performance feedback in organizational behavior management. Journal of Organizational Behavior Management, 3, 1-16.
- Prue, D. M., Krapfl, J. E., Noah, J. C., Cannon, S., & Maley, R. F. (1980). Managing the treatment activities of state hospital staff. Journal of Organizational Behavior Management, 2, 165-183.

- Quilitch, H. R. (1978). Using a simple feedback procedure to reinforce the submission of written suggestions by mental health employees. Journal of Organizational Behavior Management, 1, 155-163.
- Richman, G. A., Riordan, M. R., Reiss, M. L., Pyles, D. A. M., & Bailey, J. S. (1988). The effects of self-monitoring and supervisor feedback on staff performance in a residential setting. Journal of Applied Behavior Analysis, 21, 401-409.
- Ritschl, E. R., & Hall, R. V. (1980). Improving MBO: An applied behavior analyst's point of view. Journal of Organizational Behavior Management, 4, 269-278.
- Skinner, B. F. (1969). Contingencies of reinforcement: A theoretical analysis. New York: Appleton-Century-Crofts.