

## Behavioral Rehabilitation of the “Treatment-Refractory” Schizophrenia Patient: Conceptual Foundations, Interventions, and Outcome Data

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This article describes an intensive, inpatient behavioral rehabilitation program for patients with schizophrenia who have been considered “treatment-refractory” at state hospitals. The program is a public–private partnership involving state and private hospitals and community residence providers. The essential elements of this program are described, along with the conceptual and philosophical bases of its treatment and examples of staff behaviors critical to treatment success. Outcome data are then discussed to emphasize the point that when evidence-based psychological treatment is implemented with this population, outcomes can be positive in most cases, and therefore, the number of treatment-refractory patients is actually far less than is estimated on the basis of response to medication alone.

Schizophrenia is a serious mental disorder that affects approximately 1% of the population worldwide, with a current global incidence calculated at over 20 million people (Jablensky, 2000). The consequences of schizophrenia, in terms of both public health costs and effects on lives are enormous. For example, it has been estimated that as many as 10% of all disabled persons in the United States have schizophrenia (Rupp & Keith, 1993), and the disorder accounts for 75% of all mental health expenditures and approximately 40% of all Medicaid reimbursements (Martin & Miller, 1998). Among people with the disorder, only between 10%–30% are employed at any one time (Attikisson et al., 1992), and few of these people are able to maintain consistent employment (Policy Study Associates, 1989). Studies have consistently found that quality of life among people with schizophrenia is significantly poorer than

among the rest of the population (Lehman, Ward, & Linn, 1982). Schizophrenia typically is diagnosed in late adolescence or early adulthood, and traditionally, approximately 50–70% of cases are characterized by a chronic, relapsing course with high morbidity and permanent disability. In addition, rates of mortality and somatic morbidity are higher in schizophrenia than in the general population (Lieberman & Coburn, 1986), and the rate of attempted suicide equals that of major depression (Simpson & Tsuang, 1996). The economic costs of treating schizophrenia have been estimated to be \$62.7 billion (e.g., including direct treatment costs and lost business productivity due to patient and family caretaker work absence; Wu et al., 2005).

Several trends have steadily reduced the number of schizophrenia patients residing in state psychiatric hospitals since the mid-1950s. These include pharmacologic and rehabilitative treatment advances, expanded community housing alternatives, and the development of active family and consumer movements but also state hospital closures, forced census reductions, and moving patients to nursing homes and prison mental health wards (Talbot, 2004). It is important to note that many patients with schizophrenia continue to have poor outcomes. For example, at least 30% of patients exhibit an inadequate or poor response to conventional

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antipsychotic medication (Kane, 1989). A recent estimate placed the number of patients in the United States who were unresponsive to or intolerant of these drugs at 800,000 (Wirshing et al., 1999). Although clozapine, which is generally considered to be the most effective second-generation antipsychotic agent for "treatment-refractory" patients, has produced improvement among many patients, the rate of clozapine response among conventional medication nonresponders ranges only from 10%–60% (Kane, 1992; Kane et al., 1988; Simpson et al., 1999). Therefore, it can be estimated that 380,000–720,000 patients are nonresponsive to current medications, including clozapine. In addition, clozapine is underutilized because of its cost, side effects, and potential medical complications. Furthermore, even when clozapine reduces symptoms, there is little evidence of clozapine-related improvement in work, social, or overall level of functioning among "treatment-refractory" patients (Wahlbeck et al., 1999). For other second-generation antipsychotic medications, recent evidence indicates that they are no more effective than first-generation medications (Lieberman et al., 2005). Compounding this problem is that funding for state hospitals (adjusted for inflation) has decreased since the 1980s, and the proportion of professional staff to nonprofessional staff hired is also decreasing, leading to reduced provision of "best-practice" services (Witkin, Atay, & Manderscheid, 1996).

In response to these issues, the Weill Medical College of Cornell University and the New York State Office of Mental Health developed a plan to treat "untreatable" patients remaining in state hospitals. The plan involved the establishment of a specialized unit at a private hospital to treat so-called treatment-refractory state hospital patients. In addition, beds were made available at residential facilities in the New York City area, so that if/when patients could be discharged, they could be placed quickly without the delay of a long waiting list. This partnership between a state mental health system, residential facilities, and an academic medical center was seen as a win-win situation. It would help reduce the numbers of long-stay patients in state psychiatric hospitals that were under pressure to reduce their overall censuses, would help fill beds at a private hospital, and would facilitate community reintegration for patients. Adding to the incentive for the private hospital

was that the care of the patients transferred there would be billed at the daily (acute care) rate, which was a higher rate than was the practice at state hospitals, where an extended care rate was used for long-stay, chronically mentally ill persons. No special appropriations of state funds were given for this program, however, and it was staffed similarly to other hospital units. Therefore, the program did not require additional funding from either the state or the hospital.

The result of the partnership, called the Second Chance Program, opened at the Westchester Division of the Weill Medical College of Cornell University—New York Presbyterian Hospital (NYPH–WD) in January of 1998. The program evolved in several stages. The first admissions were in the winter of 1998. The program was running at a full census of 30 patients by the summer of 1998. At this time, a number of problems arose. The program, which was the only non-acute unit in the hospital, had the highest rate of assaults (on patients and staff), and relatedly, the highest rates of seclusion and restraint in the hospital. There were also a myriad of other behavior problems, including poor patient treatment compliance (e.g., not taking medication, poor adherence to unit routines and attendance at groups) and poor grooming and hygiene (e.g., urinating in program areas, thus requiring all carpeting to be removed). These problems led to the recognition that additional interventions were necessary. As a result, over the next 1.5 years, a series of behavioral interventions were initiated (described later in Method). These initially focused on treatment compliance and were then extended to encompass a full range of program behaviors and community living skills.

Recognition that behavioral interventions were likely to improve program effectiveness was based on (a) the results of numerous studies of psychiatric rehabilitation among medicated schizophrenia patients (see Liberman et al., 2005; Silverstein, 2000, for reviews); (b) dramatic improvement among long-stay, severely ill schizophrenia inpatients treated in intensive, social-learning-based inpatient programs (Glynn et al., 1994; Menditto et al., 1994; Paul & Lentz, 1977; e.g., in the Paul and Lentz study, long-stay hospital patients who were treated in the social learning program achieved a 97% discharge rate, compared with a 50% rate in tradi-

tional custodial care, and 1200% improvement in adaptive, social, cognitive, and instrumental outcomes, compared with negligible improvements with other treatment models); (c) a meta-analysis of 106 studies indicating that combined psychosocial and pharmacologic treatment demonstrated outcomes that were 0.39 standard deviations better than with medication alone, in addition to relapse rates that were 20% lower over a 12-month period (Mojtabai, Nicholson, & Carpenter, 1998); and (d) evidence that clozapine can enhance responsiveness to intensive inpatient behavioral rehabilitation (Menditto et al., 1996), but also that medication doses (and side effects) can often be dramatically reduced when patients are treated in such programs (Paul & Lentz, 1977).

The purpose of this article is threefold. First, we review conceptual and philosophical issues involved in establishing and maintaining the ward. Second, we describe program components at program, group, and individual intervention levels. Finally, we review outcome data.

## Method

### *Conceptual Foundations of the Second Chance Program*

#### *Ethical Issues in Recruitment, Retention, Clinical Practice, and Ensuring Patient Rights*

From the earliest phase of program development, we decided to recruit "typical" treatment-refractory patients and not the type of patients that are typically enrolled in treatment outcome studies (e.g., no comorbidity, history of treatment compliance). Therefore, the admission criterion for the program was the presence of a serious mental illness that was severe enough to preclude discharge from a state hospital even after 3 years of consecutive admission. In most, but not all, cases, patients had diagnosis of a psychotic disorder. After the second year of the program, as referrals increased and as the behavioral milieu was increasingly tailored for patients with schizophrenia and related disorders, the inclusion criteria required that all patients have a primary diagnosis of a psychotic disorder. The only exclusion criterion was that patients not be actively assaultive or predatory

toward other patients. This was necessary because the program was not staffed sufficiently to cope with openly aggressive patients. Nevertheless, the program accepted many patients with histories of violence and who demonstrated periodic violent acts. The majority of patients admitted to the program had comorbid substance abuse histories, and many had histories of arrests and of serving time in jail or prison.

Admission to the Second Chance Program is completely voluntary. Patients learn about the program either through periodic informational group meetings, led by Second Chance staff, on their state hospital inpatient units, or through treatment team members in individual meetings. In the latter cases, if interest in being transferred is expressed, these meetings are followed up by a discussion with a Second Chance Program social worker to receive further information. Only patients who express interest in going to the program are transferred. Once admitted to the program, patients could be transferred back to the referring state hospital at their request. During the first 5 years of the program, this occurred only once.

Critics of behavioral programs often argue that such programs can be punitive and abusive. In fact, this is true of any treatment program. The Second Chance Program ensured that humane treatment was actually being delivered by using several approaches. These included (a) making explicit the consequences of positive and negative behaviors, (b) linking these behaviors to specific rewards and privileges, (c) ensuring that more rewards than fines are given out, and (d) holding staff accountable for the type and frequency of feedback they give to patients. Paul (2000) argued that, because programs that use these approaches are also associated with shorter length of stays, greater patient improvement, and higher discharge rates than typical long-term inpatient programs, they are in fact the most humane form of long-term treatment for people with serious mental illness (Paul, 2000).

Several processes were used to ensure that high-quality care was delivered to patients on the Second Chance Program. First, the program director would routinely review the data sheets (see below), which staff were required to initial when observing/recording a positive or inappropriate patient behavior. Through this process, it could be determined whether all staff were ac-

tively reinforcing positive behavior and doing this more than prompting in response to inappropriate behaviors (although the latter was still expected to occur). If it was determined that staff were not having enough contact with patients and/or that not enough of this contact was focused on positive behaviors, this was reported to the staff member's discipline supervisor, and it became an issue for supervision. Second, yearly, full-day staff training workshops and weekly staff meetings were held to review expectations for staff behavior and to model appropriate staff behavior. Third, yearly performance improvement projects were implemented where data were collected on aspects of the program. These projects included examining patient improvement and examining staff behavior (rated through an observer) at various times throughout the day, using a coding system similar to Paul and Lentz's (1977) Staff-Resident Interaction Chronograph. Data from such projects are routinely reported back to staff. In rare cases when a new staff member was unwilling or unable to comply with program expectations, they received counseling from their supervisor.

Finally, we note that, wherever possible, patients chose which rewards would be available. For example, patient responses to a survey completed during a community meeting guided initial and subsequent purchases for the token store. This ensured that items in the store would indeed be reinforcing, by virtue of having personal meaning to the patients. Similarly, it was clear that patients valued having time off the unit and having cigarettes to smoke. Therefore, the token store included cigarettes in its inventory, and the program used time off the unit as the major reward. The latter was determined by patient levels, which could change every 7 days on the basis of the prior week's frequency of various behaviors (see below). All patients learned (through staff and a patient handbook, but mainly from other patients) that different point totals, reflecting various levels of performance of specific behaviors (see below), led to different amounts of time allowed off the unit, with increasing levels of independence from staff built into this system as well (e.g., at higher levels, patients could be outside without staff supervision). Because only patients on the highest levels could engage in certain behaviors, such as smoking and shopping at local

stores, patients were highly motivated to perform the behaviors necessary to earn these levels.

It should also be noted that the highest privilege levels approximated community living. For example, patients on the highest level were required to eat all of their meals off the unit, either in the hospital cafeteria (paid for by the hospital) or in a local restaurant. This combination of linking personally meaningful rewards to appropriate behaviors, and then fostering a reduction in dependency on the treatment unit upon achievement of high privilege levels, combined to both motivate patients to behave in community-appropriate ways and give them practice in functioning in the community.

### *Philosophy Toward Program Staff*

It is rare to find a treatment program where the moment-to-moment interactions that occur throughout the day between patients and staff are viewed as the most critical aspects of treatment. However, programs based on this idea have been highly successful. For example, Paul and Lentz (1977) demonstrated that a program based on operant and social-learning principles, applied during all waking hours by all staff, produced significantly better outcomes among long-term patients than other programs. In Paul and Lentz's demonstration, every staff member was seen as an important facilitator of the process of change and was trained in the philosophy and treatment techniques of behavioral treatment in general and of schizophrenia in particular.

### *The Process Model of Psychiatric Rehabilitation*

Effective psychiatric rehabilitation involves directing treatment toward four processes: skill acquisition, skill performance, generalization, and cognition (Corrigan & McCracken, 1997). Stated differently, an effective treatment program must include techniques to facilitate the learning of new or lost skills, to motivate patients to perform those behaviors throughout the treatment environment, to promote skill performance in the real world, and to address the cognitive deficits that interfere with skill acquisition and performance. Consistent with this

model, the Second Chance Program incorporated interventions targeting each process.

Manualized skill training interventions are an effective method for teaching specific community living skills. A number of effective skills training interventions have been developed and standardized through the University of California, Los Angeles (UCLA) Center for Psychiatric Rehabilitation (Lieberman et al., 2005; Wallace et al., 2001). These therapies target specific skill areas, including grooming and hygiene, basic conversation skills, social problem solving, friendship and dating, recreation and leisure activities, substance abuse prevention, medication and symptom management, and community reentry.

Promoting performance of skills involves motivating patients to perform, outside of the group setting (i.e., in the program environment), what they are learning in the skills training groups. Incentive systems, such as token economies and privileging systems, are designed to reward individuals for performing adaptive skills both while in groups and while in the treatment environment. An important component to promoting skills performance is to have staff utilize appropriate prompting and feedback techniques (see below for specific techniques) throughout the day. This helps to reinforce adaptive behavior and thereby increase overall coping skills.

Generalization often involves working with family members who will have contact with the patient after discharge. Accordingly, whenever the patient is spending time off the unit (e.g., on pass with family, at local stores, at the hospital cafeteria, or on an interview), he or she and accompanying people should be encouraged to practice the socially appropriate and adaptive behaviors that are taught, modeled, and practiced in the treatment program.

Whereas skills deficits are associated with poorer community functioning, cognitive deficits have been shown to limit the acquisition of new skills (Green, 1996). The cognitive deficits commonly associated with schizophrenia include impairment in attention, vigilance, verbal memory, and executive functions such as the ability to plan, sequence, initiate, and engage in problem solving. These problems have only recently become the foci of treatment. Some treatments attempt to improve the cognitive deficits (Brenner et al., 1992, 1994; Spaulding, Flem-

ing, et al., 1999; Spaulding, Reed, et al., 1999), whereas others aim to provide patients with compensatory strategies (Velligan & Bow-Thomas, 2000).

### *The Need to Focus on Multiple Levels of Treatment*

An effective psychiatric rehabilitation program can be conceptualized as simultaneously providing treatment to the patient on three levels: (a) the program environment, or ward, level; (b) the group therapy level; and (c) the individual interaction level. The ward level may be of primary importance within a behavioral program because structures such as the token economy and the programwide emphasis on the promotion of adaptive behavior work synergistically to create a prosthetic environment wherein the consequences of behavior are immediate and very clear to all patients. Because patients with schizophrenia are known to suffer from major cognitive deficits, this prosthetic environment serves a necessary compensatory mechanism. For example, patients with impairment in executive functioning show a poor ability to plan and organize behavior and have difficulty anticipating the consequences of their behavior. However, while participating in the program, feedback about inappropriate or bizarre behaviors is given directly and consistently by trained staff along with helpful prompts about how to behave in a more appropriate or adaptive manner.

As mentioned earlier, group level interventions target skills acquisition and performance in various areas of independent living skills. Other group level interventions focus on relaxation and stress reduction; anger management; healthy living skills, such as diet and exercise; and spirituality as a coping strategy. Ideally, skills training groups should be held at least three times per week, with no more than 8 patients per group.

Intervention at the individual level is conducted through moment-to-moment interactions with staff, individualized cognitive interventions, behavior contracts, and psychotherapy. Individually administered cognitive interventions can be effective in situations in which patient attention span precludes active engagement in, and benefit from, group-based methods of cognitive treatment. Interventions have been



developed that target attention span (Massel, Corrigan, Liberman, & Milan, 1991; Silverstein et al., 2001) and overall cognitive functioning (Van der Gaag, 1992), in addition to those that help patients cope with delusions and hallucinations (Hatashita-Wong & Silverstein, 2003; Spaulding et al., 1986). Behavior contracts are often necessary when patients demonstrate behaviors that are not changed sufficiently by other interventions. Behavior contracts can be viewed as individualized token economies. For a behavior contract to be effective, it must be clearly understood by both the patient and staff, include incentives for the patient to behave differently, and follow behavioral guidelines. Guidelines for effective contracts are available (Heinssen, Levendusky, & Hunter, 1995), as are methods for training staff in their development (Silverstein & Jewell, 2002).

### *Functional Analysis*

Functional analysis involves determining which antecedents and consequences are controlling behavior. Once this is known, a behavior plan can be developed to change these conditions in order to modify the target behavior. This general strategy is sometimes referred to as "the A-B-C model" with A, B, and C referring to antecedents, behaviors, and consequences. Each component of the A-B-C model is equally important. For example, it is important to specifically define the behavior being measured so that all staff working with an individual can agree when it is or is not occurring. It is important to look at the consequences of the behavior because this can reveal why it is performed. For example, on some inpatient units, patients do not get much attention from staff unless they begin yelling or acting aggressively. Staff are often surprised that, although there are rapid and severe consequences for aggressive behavior, a patient's rate of aggression may still go up because the attention and contact from staff may be experienced as pleasurable. In such cases, understanding that the attention is rewarding allows staff to set up plans to systematically reinforce appropriate behaviors and to avoid reinforcing inappropriate ones. It is equally important to understand the circumstances in which a behavior is most likely to occur or what antecedent events are associated with the onset of the behavior. Understanding antecedents can

allow staff to teach patients new and more appropriate responses or ways to avoid situations that lead to inappropriate behavior.

### *Program Components*

Patient barriers to discharge often involve inadequate living skills more than symptom levels. Therefore, a combination of milieu management, group skills training, and individualized interventions were implemented in the Second Chance Program to address patients' behavioral excesses and deficits. For a summary of program components, see Table 1.

The milieu management system involves a point-based system for on- and off-ward privilege determination (described later). In addition, the program uses a token economy, which can be thought of as a prosthetic environment for people with severe cognitive deficits. Within the token economy, feedback for appropriate and inappropriate behaviors is given more clearly and frequently than in more typical environments, and consequences, in terms of rewards and penalties, are immediately linked to behaviors. All of these specific interventions promote learning. Patients earn tokens for meeting specific, individualized (based on their prior performance) behavioral targets, which can be either targets for the behaviors noted below, or several aspects of group behavior, including

Table 1  
*Components of the Second Chance Program*

Program components
Token economy (with token store)
Point/level system (including programmed reduction in reliance on program reinforcers)
Weekly review of data on prior week's behavior frequencies
Observational ratings of multiple classes of behavior
Functional assessment
Multimodal Functional Model assessments and treatment planning
Medication education group
Skills training groups (with and without attention shaping)
Cognitive rehabilitation (group and individual)
Recreational activities
Behavior contracts
Staff behaviors: Positive reinforcement, extinction, three-step procedure, differential reinforcement
Time-out

arriving on time, participating, and staying for the entire group. The Second Chance Program has a token store, open 6 days/week, at which patients can either deposit coupons for later use (using a computerized token store banking system) or spend them on items including food, personal grooming products, clothes, magazines, and games. Adding the token system onto the point system ensured that even lower functioning patients, who were too impaired to be able to achieve the highest privilege levels, would be motivated to meet their behavioral targets. An important feature of the token economy system is that, as patients progress through the system and their behavior begins to approach community standards, external reinforcers are used less and social and internal controls are relied upon more. At first, patients receive tokens and praise as they meet each target behavior. Later, reward is in the form of praise and social reinforcement from staff and self-satisfaction with meeting targets. Reinforcement of desirable behavior also moves over time from immediate to delayed reinforcement. As patients achieve higher levels in the system, they no longer receive tokens immediately on completion of a target behavior. Rather, at the end of the week, they receive credits at the token store, with the number of credits being equivalent to the number of tokens they would have earned on a daily basis during the past week (like a paycheck). Thus, later stages of the system approximate experiences that they will encounter in the community (i.e., delayed reinforcement). An additional feature is that the system is weighted heavily toward reinforcing positive behaviors as opposed to penalizing inappropriate behaviors, an approach that has been shown to be more successful than systems based primarily on penalties.

The point and token systems are based on a comprehensive assessment system that includes the following: (a) daily ratings on 10 aspects of appearance and grooming (e.g., hair clean, hair combed, wearing different clothes than yesterday); (b) daily ratings on 10 aspects of room cleanliness (e.g., no clothes on floor, bed made); (c) daily ratings on 10 meal behavior criteria (e.g., eating with utensils, not taking other people's food), rated at every meal; and (d) daily ratings on 10 aspects of preparation for sleep (e.g., not sleeping in clothes worn during the day, pillowcase on pillow). Patients receive

points for successful completion of each criterion and extra points and a token if they reach the target that staff set for them on the basis of their performance during the prior 2 weeks (note that if a target is met consistently for 2 weeks, it is raised by 1 point for the following week; if it is missed for 2 weeks, it is lowered by 1 point). Performance relative to these criteria is recorded on specialized behavior checklists (see below).

In addition, patients are rated on the presence/absence of approximately 30 different inappropriate and appropriate behaviors as they occur throughout each day. At the end of each week, the total number of points earned and lost is totaled, and the resulting number determines their level of on-ward and off-ward privileges for the next 7 days. All of these data are entered into a software application developed by Steven M. Silverstein. The output, given to each patient and all staff each week, includes frequency counts of each behavior during the week that just ended. Customized reports and graphs, depicting data over user-specified time intervals, can also be easily created from within this program using preexisting macros. These data are useful for treatment planning and for informing patients about progress in the program and behaviors that need further change.

In addition to the milieu management systems, the Second Chance Program offers a full range of skills training and recreational groups, including all of the groups in the UCLA Social and Independent Living Skills series. All of these groups operate to reinforce attentiveness and participation during group sessions (see description of attention-shaping procedures later in this article), in addition to promoting learning of the specific group content area. Because some patients have specific problem areas that are not addressed sufficiently by milieu or group interventions, individualized behavior contracts and cognitive rehabilitation strategies are used when necessary (see below for examples).

### *Specific Procedures to Promote Behavior Change*

This section covers a number of procedures, including the following: observational rating of critical behaviors; linkage of privilege level with performance level of behaviors; the token economy; staff-patient interaction; techniques

to promote therapy engagement, behavior contracting; and designing individualized cognition enhancing interventions. These procedures borrow heavily from the pioneering work of Paul and Lentz (1977), Menditto et al. (1994), Spaulding et al. (1986; Spaulding & Sullivan, 1992), and Liberman (Corrigan & Liberman, 1994; Liberman, 1992).

*Observational rating of critical behavior.* Every successful rehabilitation program for schizophrenia patients provides frequent feedback to patients and staff regarding behavior. For this to occur, formal procedures for data collection and reporting need to be instituted. On the basis of the work of Paul and Lentz (1977) and of Menditto, Valdes, and Beck (1994), we developed behavior checklists for staff to use when observing and rating behaviors that are critical for community success. The number and specific type of daily behavioral checklists to be completed by staff can be customized to the needs of any program. However, it is important that the behaviors chosen for observation and rehabilitation correspond to what is known about the needs of chronic schizophrenia patients and not simply to those behaviors that staff may find aversive (Paul et al., 1997). Ideally, behaviors are chosen as a result of a combination of existing data on patient disabilities, as well as staff observations about behaviors that represent barriers to more effective functioning in the program. It is then important that staff work together with the program leader to develop user-friendly instruments for recording data and systems for data management and reporting (Corrigan & McCracken, 1997; Silverstein, Bowman, & McHugh, 1997). Behavioral checklists should clearly list the behavioral criteria, individual client names, and their identified behavioral targets.

### *Observational Assessment Using Behavior Checklists*

*Appearance.* Each morning at 8:30, each treatment team coordinator meets with his/her 10 patients in a group setting. One of the critical functions of this group is to review patient grooming and hygiene. Using the Appearance checklist, each patient's performance is reviewed one at a time. Each patient is asked to stand and is then asked about each of the 10

criteria. The group leader and other staff present praise the patient for each criterion that is met and remind the patient that for each criterion that is not met, they will lose a point toward the possible 10 points they could earn for the morning appearance check. Once this procedure has been established with a group, it can be useful for patients to rate other patients. This promotes attention skills in the patient doing the rating and a greater sense of group cohesion among the group as a whole. The final score for each day of the week is listed on a chart on an easel. On this chart, patient names are in the leftmost column, followed by their target, and followed further by spaces for each day of the week. These spaces are filled in each morning. In addition, a staff member at the meeting completes the Appearance checklist, and the data from this form are entered into the patient data tracking program. Patients receive tokens for meeting their appearance targets, as well as for group behaviors (e.g., participation for the duration of the group).

*Room and area.* While patients are in the 8:30 a.m. meeting, a designated nursing staff member goes to each patient's room and completes the Room and Area checklist. Near the end of the 8:30 meeting, this staff member attends each of the three groups to review patient completion of the room and area criteria. Patients are informed which criteria they met, and which they did not, and reminded that if they complete the latter tomorrow, they can get more points towards their privilege level for the following week. Data recording procedures are the same as for the appearance check. Again, patients receive tokens in addition to extra points for meeting their target level.

*Meals.* Patients who earn the highest privilege level are required to eat each of their meals off the unit in the hospital cafeteria, as part of the movement toward increased approximation of community demands as patients progress through the program. For the patients eating on the unit, however, behaviors during mealtimes are recorded on the Meal Behaviors checklist. Patients receive feedback during meals regarding which criteria are being met and which are not. For those patients who demonstrate unacceptable meal behaviors, coaching and modeling of appropriate meal behaviors are provided by staff assigned to eat their meals with the unit clients.



*Evening appearance check.* The Evening Appearance checklist allows staff to rate a number of behaviors associated with personal appearance and room cleanliness at the end of the day. This helps ensure that patients remain well groomed throughout the day and that their rooms remain clean. Specific problems that this checklist was designed to reduce include changing into inappropriate types or amounts of clothing after the morning appearance check, sleeping at night in clothes worn during the day, and sleeping without pillowcases or sheets. Patients are given feedback individually as their room is checked before bedtime.

*Socially inappropriate behaviors.* In addition to checklists that are completed at specific times of the day, occurrences of inappropriate behaviors are recorded throughout the day as they occur, using event sampling procedures, on the Socially Inappropriate Behaviors checklist. Behaviors recorded on this checklist include failure to wake up on time, verbal and physical abuse, sexually inappropriate behavior, bizarre behavior, and treatment noncompliance. All staff are responsible for recording inappropriate behaviors. Patients lose points for acting in socially inappropriate ways, with the amount of penalty points for the different behaviors weighted according to dangerousness or severity. Staff are required to place their initials next to their mark on the checklist in case further clarification is needed at a later date. However, before recording an incident on this checklist, staff are required to identify the behavior to the patient, tell them the consequence in terms of points lost, and suggest a more appropriate means of getting their needs met.

*Socially appropriate behaviors.* It is critical both that patients receive feedback about appropriate behavior on a frequent basis and that staff are trained to consistently do this. To accomplish these goals, the program also uses a checklist for socially appropriate behaviors. Behaviors coded on this sheet include the following: starting a conversation appropriately; keeping a conversation going by asking questions or generating new topics; ending a conversation appropriately; responding appropriately to a statement that another person has to end the conversation now; tolerating a stressful situation without engaging in inappropriate behaviors; providing assistance to another person, etc. It is part of the program philosophy that more feed-

back should be given to patients about appropriate behaviors than about inappropriate behaviors. Therefore, program leaders routinely note the number of behaviors coded on each sheet and work with staff continually to ensure that staff are "catching" patients engaging in positive behavior. As with the Socially Inappropriate Behaviors checklist, staff are required to give feedback to a patient if they record a behavior on the sheet.

*Group worksheets.* Behavioral observation occurs in treatment groups as well, alongside presentation of the material being taught to patients. Patients receive points for arriving on time, for participating, and for staying for the entire group. Patients also receive tokens for meeting each of these goals. Participation is defined for each group member in each group by the group leader. This is because obstacles to meaningful participation vary across patients. For example, one patient might need to interrupt less, whereas another patient might need to demonstrate more spontaneous speech. These data are recorded on group worksheets designed just for observation in group therapies.

*Feedback to patients.* Data from the behavior checklists are entered into the data tracking program by a secretary. Each Tuesday, the program produces reports of the frequencies of each behavior over the prior 7 days. All reports are given to all staff, and each patient is given his/her individual report the next day at the 8:30 meeting. These reports serve a number of purposes in addition to informing staff of patient functioning in important areas. For example, they convey the message to patients that they are responsible for the privileges that they earn. In this way, patients are discouraged from approaching staff to beg or negotiate for a higher privilege level, which is a form of dependent and institutionalized behavior, in part fostered by programs in which staff/program consequences for patient behaviors are unpredictable and vary between one staff member and another. When questions come up about levels, staff can review the report with the patient and stress the point that control of privilege level is in the hands of the patient. Having the report allows staff to highlight to patients how they have improved week to week and/or to point out why a level was dropped and what needs to be done in the next 7 days to regain lost privileges.

### *Interpersonal Techniques for Optimizing Positive Outcomes*

Perhaps the most critical aspect of treatment in a rehabilitation program is the moment-to-moment interactions between staff and patients throughout the day. Indeed, recent data suggest that the number of positive staff statements to patients is a strong predictor of community tenure after hospital discharge among people with serious mental illness (Coleman & Paul, 2001). The number of such interactions that occur, or the potential number that could occur (since the number is typically less than optimal; Paul & Lentz, 1977), can be used to provide much more feedback and support than any combination of groups or other experiences patients typically receive while inpatients. Unfortunately, however, it is rare to see a discussion of how staff-patient interactions can be optimized to promote successful treatment outcome. Therefore, below, we provide information about interactive techniques that we have found to be particularly useful in facilitating positive rehabilitation outcomes. We begin the discussion by focusing on general guidelines for staff behavior. This is followed by a discussion of specific prompting and intervention techniques.

#### *Guidelines for Staff Behavior in the Program Environment*

*Reinforce only appropriate behavior.* Staff need to always reinforce desirable and appropriate behaviors immediately. Participants should receive verbal praise and tokens/points whenever they have demonstrated full participation or have met a behavioral target during activities, groups, tasks, or other informal interactions with staff. If unsuccessful or inappropriate behaviors occur, staff should specify to the client the reason why a point or token was not earned, and they should be sure to follow this explanation with a prompt for the client's next opportunity to earn his or her token.

*Use the method of shaping.* When patients are not yet functioning at a level of performance that meets their target criterion, staff should reinforce approximations of the desired behavior. The approximations should be specifically defined in treatment planning meetings so that staff from all disciplines are able to consistently focus on the appropriate performance criteria.

Similar to the targets for behavior checklists, these performance criteria are systematically increased as clients successfully meet or exceed the targets assigned to them.

*Feedback should be specific.* Whenever points and tokens are given, staff should always specify for which behavior or criterion the individual has earned the praise, points, and/or token. An example is "You did a really good job of setting your sheets and straightening your pillow on the bed. You earned 10 points and met your Room Check target this morning. Keep up the good work." Whenever possible, point awards, praise, and tokens should be given in the presence of other patients. This increases the effects of the social reinforcement and provides examples of appropriate behaviors by peer models for the others.

*Do not reinforce failures.* It can be difficult for staff not to give attention to a patient when he/she is failing something. However, this only reinforces the behavior of failing. Occasionally, it is appropriate to make conversation with a resident who is failing something, but this is typically in structured groups/activities and takes the form of a prompt sequence (see *The three-step technique* below).

*Reinforce exemplar behaviors.* Any exemplar, helping, and model behaviors should be praised and acknowledged with positive verbal and nonverbal reinforcement. Extra tokens can be given for behaviors that are not already reinforced by other means (e.g., not on the behavioral checklists or not an aspect of group participation target). Examples of socially appropriate behaviors include cooperative behaviors with other patients and a variety of chores and small jobs that staff can think of or that the patient volunteers to do.

#### *Interactive Techniques for Managing Inappropriate Patient Requests and Behaviors*

This section describes several techniques for dealing with inappropriate behavior during one-on-one interactions with patients.

*Extinction.* Staff should ignore a patient when he/she is talking in ways that do not make sense, demanding something that staff cannot deliver, asking questions that have been asked several times already, and so forth. If a patient is mixing appropriate talk or appropriate behav-

ior with inappropriate talk/behavior, staff should respond only to the reality-based speech (i.e., the technique of differential reinforcement). Undesirable behavior should be ignored unless it would result in an infraction on the Inappropriate Behaviors checklist. In this case, staff should prompt the patient using the three-step technique described below. When extinction is to be used as a staff response to specific behaviors, it is important that all staff are informed and follow through with the procedure. The effect of having even one staff member respond to the behavior creates an intermittent reinforcement schedule, which will make the behavior even more difficult to reduce in frequency.

*The three-step technique.* The three-step technique is a sequence of prompts that should be used when the target behavior requires more than the use of extinction to reduce. This technique also assists the patient in identifying alternatives to the inappropriate behavior. It consists of the following sequence of steps.

1. *Reflect feelings/intentions.* After the patient's request, start out with a statement, in matter-of-fact terms, regarding what the patient is feeling (e.g., "I can see you want me to help you right now"; or "I can see you feel angry right now"). Doing this can help make people feel "listened to" and can counteract preexisting negative feelings.

2. *State the limits of the situation.* The form of this statement should be as follows: "[The behavior you're engaging in] is inappropriate, and when people here do that, [this] happens." Staff are instructed not to use the words *you* or *I* in these cases (e.g., "I'm going to drop you a level," or "When you do that points are taken away from you."). More appropriate staff comments would be "When a person does that on this unit, they are not able to earn certain privileges." By depersonalizing the interaction, staff reduce the chance of aggressive behavior being directed at them and promote generalization of appropriate behavior beyond the current context.

3. *Prompt the patient to use alternative behaviors.* Typically, when a patient is acting inappropriately, he/she is trying to get something but is doing the wrong thing to get it. Therefore, for the third part of the three-step technique, point out what the patient could do to get what he/she wants. Patients with chronic psychotic disorders may have difficulty generating alternatives or thinking into the future. As

a result, staff should help patients generate and name alternatives to their inappropriate behavior when patients cannot do this on their own.

It is important that staff practice the three-step technique often. Staff typically report that it feels unnatural, awkward, and difficult at first. The program director must remind staff that these feelings are typical when learning new skills. Another common difficulty comes with delivery of the three-step sequence in an unemotional tone of voice. When the patient's feelings are acknowledged and reality is stated in a matter-of-fact way, the patient then experiences the situation as a struggle with reality, instead of as a struggle with staff. This promotes directing problem-solving activities toward their own behavior and environment, as opposed to simply trying to get staff to change things.

*Time-out.* Time-out involves removing the patient from all sources of reinforcement. During the time-out, the patient cannot receive social attention from staff or peers and does not have access to other items that are reinforcing, such as food, TV, radio, and magazines. This procedure has been researched extensively, and results demonstrate its effectiveness in eliminating many inappropriate behaviors such as aggression, stealing, self-injury, and so forth.

Time-out can be used to de-escalate and manage agitation. However, staff should always make efforts to avoid the need for time-out. This means that staffers need to be alert to any patient escalation and, whenever possible, use other interventions (e.g., encouragement, prompting, redirection) to guide the patient's behavior in a more appropriate direction prior to the occurrence of any more serious infractions.

When other interventions fail and time-out is needed, the following steps should be taken:

1. Identify for the patient, the behavior they have engaged in that is resulting in a time-out.

2. Tell them what the consequences are for that behavior (i.e., time-out and a mark off for the behavior on the Socially Inappropriate Behavior checklist, with an associated point loss toward next week's level).

3. Tell them how and when they will complete the time-out.

Staff should be straightforward and matter-of-fact but not cold or harsh. In addition, staff should not discuss or debate anything with the patient. Patients should be instructed to go to

the designated time-out area, and staff should ignore all attempts to engage them in a discussion about the incident leading to the time-out. About 5–10 min is generally an adequate amount of time for a time-out. Patient rooms are undesirable as time-out areas because there are too many personal items that may serve as a source of reinforcement.

It is helpful if patients for whom time-outs might be necessary are identified early in treatment, before an actual time-out is required. If this is done, then the details of the time-out for the patient can be worked out in advance, including having certain details contributed by the patient in the form of an advance directive. These details include the behaviors that will lead to staff indicating that a time-out is necessary, the place where the time-out will take place, and the duration of the time-out.

Occasionally, a patient will refuse to begin a time-out. In such cases, staff should avoid arguing with the patient. At first, the patient should be reminded that all privileges will be withheld until the time-out is completed. After that, if the patient continues to argue, he/she should simply be told “The time out will begin when you are in your time-out place.” If a patient leaves a time-out before the allotted time, he/she should begin the period over.

It is important that all staff stick to these guidelines and use the techniques described above. If, for example, most staff are using the extinction, three-step prompt, and time-out procedures correctly, but 1–2 staff members decide that they “don’t have the energy” and give in to inappropriate requests, then intermittent reinforcement has occurred, making the behavior even more difficult to reduce in the future.

### *Behavior Contracting*

Behavior contracts are an effective and collaborative approach to treating people with schizophrenia (Heinssen, Levendusky, & Hunter, 1995; Levendusky et al., 1983, 1994), and techniques are available to train staff in their development (Jewell, Silverstein, & Stewart, 2001). Behavior contracts can be critical because it is often the case that a patient has a specific troubling behavior that is not addressed adequately (if at all) by manualized treatments such as skills training groups. Procedures for developing behavior contracts include a number of tech-

niques, such as functional analysis, incentive systems, and appropriate use of prompting and shaping. It is important that patients be involved in the development of their contract and that they understand it. Several key principles are involved in developing and using behavior contracts. One is that a series of contracts is typically required. As a result, it is important that the initial contract be focused on a behavior for which there is a high likelihood of success in achieving change. This behavior may not be the behavior that staff believes is most troublesome for them. However, the positive behavioral momentum created by initial success will facilitate later efforts to modify more challenging behaviors. A second principle is that a system to collect reliable and valid data should be put in place as part of the contract, if it does not already exist as part of the general treatment program structure. Having these data will allow for rational discussions between the patient and staff members about progress toward contract goals and what changes are required, both in the contract and in the patient’s behavior. Third, a contract should typically not be in place for more than 2 weeks. Patients and staff often lose momentum as contracts extend past this time. To prevent this, contracts should be updated every 1–2 weeks, on the basis of data and other feasibility issues. This keeps patient and staff motivation at maximal levels and also allows for the shaping of behavior to occur. Fourth, the contract should clearly define the target behavior and the staff response. It should not be simply one or more statements that the patient will perform some behavior, along with a line for a signature. It is often useful to have separate columns for patient and staff behavior. For example, a line under “patient behavior” might say, “If I arrive at breakfast by 7:30 a.m., then. . .,” and a line under the “staff behavior” column might say, “Staff will praise me for coming on time and allow me 1 hour of TV watching time in the afternoon.” Finally, a contract should typically not focus on more than two to three behaviors at any given time. It is important to have a long-term perspective on behavior change and to use the method of shaping, rather than expecting that a single behavior contract can eliminate multiple inappropriate behaviors immediately.

An example of a successful behavior contract on the Second Chance Program involved a



young female patient in her early 20s who had a psychotic disorder. After admission to the unit, she would frequently swallow, or claim to swallow, dangerous objects such as jewelry, pencil points, erasers, marbles, and so forth. This would lead to long periods of seclusion or to being observed by a staff member while in her room. Functional analysis of this patient's behavior elucidated three important situations: (a) her reports of swallowing objects (which X-rays later revealed to be false) occurred during times when she was not receiving attention from staff (e.g., after all groups had ended for the day) or after another patient received a great deal of staff attention, whether it was praise or a seclusion/restraint incident after a dangerous behavior; (b) when in seclusion or being observed by certain nursing staff or mental health workers, these staff would hold long conversations with the patient, including during her meals; and (c) when engaging in appropriate behavior (e.g., watching television, reading), staff rarely interacted with the patient. The hypothesis was generated that the patient's behavior was a method to receive attention from staff and that this was being reinforced by her receiving intense 1:1 attention from staff after reporting a behavior that would lead to seclusion or room restriction. Therefore, a behavior plan was set up that required staff to heavily reinforce the patient with verbal praise and special coupons each time they observed her engaging in a pre-specified set of appropriate behaviors. A system was set up wherein these coupons could be cashed in for time spent on special activities that the patient liked (5 coupons was worth 1 hr of painting with materials to be provided by staff, 20 coupons earned 1:1 time with a staff member, etc.). In addition, staff were to have only the minimal amount of verbal contact required with the patient during seclusion and restraint incidents. The goal of this plan was to increase the frequency of socially appropriate behaviors and extinguish the inappropriate methods of seeking staff attention. Ultimately, it was hoped that, after successive contracts in which reinforcement was made more intermittent, the patient would be internally motivated to engage in socially appropriate behaviors as a result of their intrinsically motivating qualities. This behavior contract led to a significant reduction in dangerous and socially inappropriate behaviors. In the 3 weeks prior to the introduc-

tion of the plan, the patient averaged 9.7 seclusion room incidents per week. After the plan, this average was 0.71 over the next 7 weeks, with all of these incidents coming after a staff member inappropriately reinforced a socially inappropriate behavior.

### *Interventions for Cognitive Impairment*

It is now generally accepted that most schizophrenia patients experience cognitive difficulties and that the presence of severe cognitive deficits interferes with the ability to engage in psychosocial treatment, leading to poorer outcomes (Green, 1996; Silverstein, Schenkel, et al., 1998). Although a number of cognitive rehabilitation interventions have been developed for schizophrenia, their effects in most cases have been minimal (although see Bell et al., 2003, for an exception), and, to date, none of the techniques have demonstrated efficacy with the most cognitively impaired patients (Silverstein & Wilkniss, 2004). Although the treatment techniques described earlier help to create a simplified environment in which positive and negative consequences of behavior are more immediate and frequent than normal, it is still the case that patients with severe cognitive impairments may benefit less than other patients. Therefore, it is critical that, for cognitively impaired patients, a major focus of treatment involve improving their ability to attend to information that is presented to them and to actively participate in treatment.

Below, we discuss several techniques that we and others have found useful in accomplishing this goal with this population. It is important to note that patients may be inattentive for different reasons, including a sustained attention deficit, poor motivation, sedation due to medication, or distractibility due to hallucinations or disturbing thoughts. In the following discussion, we focus on treating inattentiveness, whether it is due to primary or secondary negative or positive symptoms.

### *Procedures for Improving Attentiveness and Participation in Groups*

For severely disabled patients with very short attention spans, techniques based on the behav-



ioral principle of shaping have demonstrated effectiveness in increasing attentiveness and promoting the learning of new skills. Shaping is the application of several fundamental techniques of learning to bring about new behavior or to modify a certain aspect of an existing behavior. As such, shaping can be viewed as a method to achieve operant conditioning, with attention being the response that is targeted. The primary technique involved is differential reinforcement of successive approximations. Rather than waiting for the complete behavior (e.g., a 20-min attention span) to occur before offering reinforcement, reinforcement is provided for successive approximations or steps toward the final behavior. When the initial step toward a behavior (e.g., 4 min of continuous attention) has been reinforced and occurs fairly regularly, the criterion for reinforcement is advanced to the next step (e.g., 5 min of continuous attention). This sequence of reinforcing, changing criteria for reinforcement, fading reinforcers for previous versions of the behavior and limiting reinforcers to behavior meeting the new criterion, is then repeated until the behavior resembles the final desired response. A strength of shaping is, therefore, that it allows for specific learning techniques to be used in order to develop and strengthen behavior that does not normally occur or that occurs at a very low frequency. It is this feature that makes it suitable for the treatment of patients whose severely impaired attention spans preclude them from active participation in other forms of psychosocial treatment, including many forms of neurocognitive remediation.

Three forms of attention-shaping training are described below. The first procedure involves patients working separately. The last two procedures described involve integrating attention shaping into an existing skills group format.

*Shaping duration of classroom work.* Using assignments consisting of paper-and-pencil tasks focusing on practical language and mathematics skills, we can integrate attention-shaping procedures into a classroom environment. Classes should be held frequently, for instance, three times daily during weekdays. Target times for on-task behavior are initially quite brief (30–60 s), and two to three trials are typically required per session, meaning that the duration of the class time increases as participants increase the duration of their on-task behavior.

Two staff members are needed for this intervention. One leads the class. The second staff member, or *change agent*, focuses on patient attentiveness. Patients receive prompting and encouragement as necessary throughout the session, and on successful completion of each trial, they receive specific verbal praise, a shaping chip (see below), a small food snack, and a prompt specifying the requirements for the next trial—all from the change agent. After successful completion of the last trial, a participation token is awarded. Tokens can be used to “purchase” a variety of goods or privileges (e.g., snacks, coffee, grounds passes, TV time) from the ward token store. As the training participants demonstrate success with each target for several sessions, targets are gradually increased, typically in 30- to 60-s increments, until the participant consistently completes two consecutive 10-min trials.

Menditto et al. (1991) used this shaping procedure to increase the attention span of 7 forensic inpatients with severe and persistent schizophrenia or schizoaffective disorder. The average length of stay for these patients was 10.4 years, and they were considered to be among the most ill and least responsive patients in the hospital. After 12 months of training, 6 of the 7 patients had demonstrated substantial improvements in attentional functioning, with 4 of these graduating from the attention-shaping classes and progressing to more traditional academic classes on the ward. They continued to perform quite well in those classes, with a 1-year follow-up showing successful completion of academic class assignments, on average, 84% of the time. Similar results were reported by Bellus et al. (1998), using procedures identical to those of Menditto et al. (1991), and by Silverstein, Pierce, et al. (1998).

*Integrating shaping and skills training procedures—Technique 1.* Silverstein et al. (1999) identified inattentive behaviors characteristic of each patient and then used shaping techniques to improve these behaviors and facilitate acquisition of new knowledge and skills during group sessions. The following steps are used in this procedure:

1. Baseline sampling: The most problematic verbal or nonverbal inattentive behavior is identified for each patient. Nonverbal behaviors (e.g., eyes open, head up, eye contact with speaker) are rated each minute using interval-

sampling procedures, and verbal behaviors (e.g., responding within 5 s, making spontaneous relevant comments, making irrelevant comments) are rated using event-sampling procedures. One or two noninteractive observers record the individualized target behaviors and report their frequency at 15-min intervals, when the group leader pauses to allow this feedback to be reported. In the Silverstein et al. (1999) study, patient goals initially reflected an average of 4 weeks baseline, pre-shaping performance.

2. Introducing the shaping intervention: After initiation of shaping procedures, at each 15-min review period, patients who meet or exceed their goal (e.g., 60% of that period with their head up) receive a shaping chip. Patients turn in their shaping chips at the end of the group session and receive a token or some other incentive (e.g., 25 cents) for each shaping chip earned.

3. As patients begin to exceed their goals consistently, the criteria are increased to facilitate continued progress.

Silverstein et al. (1999) demonstrated the effectiveness of this integrated shaping-skills training approach. All participants demonstrated significant increases in attentive behavior using this procedure. Additionally, they showed that the method of intervention can be tailored to meet individual needs. One individual did not respond initially to the 15-min reinforcement schedule; therefore, the shaping procedure was adjusted to accommodate his severe level of attention deficit. A continuous reinforcement schedule was implemented wherein he was given 5 cents and a piece of candy each time he opened his eyes. This eventually led to increases from 10% to over 80% of the time in keeping his eyes open, with subsequent greater spontaneity and participation, as well as responses that were more relevant to the group.

*Integrating shaping and skills training procedures—Technique 2.* This technique sets the same criteria for each patient (see Table 2 for criteria) but varies the attentiveness duration required to earn shaping chips. This type of group can be run with as few as two staff members: one to serve as the group leader and another to serve as the change agent. The latter is the person who observes patient attentiveness, uses verbal prompts and praise, and delivers shaping chips when subtargets are met. This

Table 2

*Criteria for Attentive and Inattentive Behaviors in Integrated Attention Shaping and Skills Training Groups*

Criteria behavior
Paying attention
Head up
Eyes open
Looking at therapist/video/role-play
Participating
Responds to questions, requests, instructions within 5 seconds
Responses are relevant (i.e., on topic)
Responses consist of more than one or two words when indicated
Participates in role-plays
Makes spontaneous comments
Answers questions when trainer addresses whole group
Not paying attention
Talking out loud or to self
Making irrelevant comments
Making irrelevant gestures
Gesturing not in response to anyone in the room
Arguing, yelling, screaming, etc.
Staring off into space
Getting out of chair
Leaving group without permission

person does not serve as a co-therapist for the group.

In this type of group, the change agent reinforces each patient with verbal praise and a shaping chip each time a subtarget (e.g., 4 min of continuous attention) is met. When a shaping chip is given, patients are reminded of the subtarget they just achieved. When a patient meets a class target (i.e., required number of subtargets for the session), he/she is explicitly praised for this as well. Whenever a patient meets either a subtarget or a class target, this should be noted on the board or easel (by the therapist or co-therapist or change agent). This provides both auditory and visual reminders of the patient's success. It is understood that this reinforcement by the change agent may briefly interrupt the group, although with experience, disruption is negligible.

Whereas shaping chips are distributed during class upon meeting subtarget criteria, tokens are distributed at the end of the group only. When tokens are distributed, they are handed to patients by the therapist or co-therapist, and the reason for earning the token is briefly reviewed

within the context of verbal praise. Furthermore, the patient should be informed of the level of participation required to earn a token in the next class.

If a token is not earned, therapists should nevertheless praise patients for something positive about their performance in class that day. They should also clarify why the patients did not earn a token for the class. The therapist should then remind patients when the next class meets and tell them that they will have another chance to improve their attention span and to earn a token in that class.

Subtargets are systematically increased after two consecutive successful classes at the current level and decreased after two consecutive failures to achieve tokens at the current level. The typical schedule of subtargets is 30 s, 1 min, 2 min, and so on, up to 10 min. Patients who can attend for 10 consecutive min are then shaped to do this twice, three times, and then four or more times during the group session.

When subjects engage in participation-interfering behavior, group leaders should give a negative prompt followed by a positive prompt (see example at the end of this paragraph). Continued participation-interfering behavior should be ignored, unless it is so disruptive that it significantly impairs the ability of others to continue to participate, in which case the individual must be asked to leave the group. When the behavior is corrected and the individual gets back on task, verbal praise should be given. This sequence can be repeated but only after the individual resumes appropriate participation. All prompts should include specification of behaviors and reference to the reinforcer for achieving class targets—for example: “Bob, you are talking out loud about stuff not related to our discussion. If you continue to do that, you won’t be able to earn your participation token. If you can get back involved with our discussion, you’ll still be able to earn that token.”

Initial data from the use of this technique have been positive, with large effect sizes (Silverstein et al., 2005). Current efforts to refine it further include having patients participate in the generation of their own goals, as opposed to basing them solely on performance in the previous two groups. This technique will involve broadening the range of behavioral targets from duration of attentiveness to a range of behaviors involved in attending and participating mean-

ingfully in tasks and groups. This collaborative method has been reported to be effective in shaping behavior among outpatients with schizophrenia (Skinner, Skinner, & Armstrong, 2000).

### *Response to Requests (RTRs)*

RTR procedures<sup>1</sup> are used for patients with the most severe disabilities and are used before establishing time targets (e.g., before typical shaping procedures). The idea behind RTRs is to elicit responses in typically unresponsive patients. Patients are asked to engage in a simple behavior. Typically, in therapy groups, these behaviors involve the demonstration of a basic social response (e.g., repeating a phrase, repeating a phrase while keeping eyes open, looking up at the group leader for 3 s). Goals are initially set low (e.g., one or two instances of the desired behavior) and are gradually increased (e.g., to five consecutive successful RTRs). In most cases, the change agent will prompt the patient for the RTR while the group leader is conducting the group (but the group leader can also initiate an RTR). When the therapist believes that the patient is sufficiently responsive that he/she could maintain on-task behavior for at least 30 s in a group setting using shaping procedures, then the patient no longer has goals framed in terms of RTRs; rather, he/she begins having time interval goals.

### *Individualized Cognitive Interventions*

Some patients have cognitive difficulties that are best addressed in an individual setting. Often, the intervention must be designed specifically for that patient because the nature of the problem is such that it is not addressed by currently available treatments. For example, a common problem in schizophrenia is distractibility secondary to persistent auditory hallucinations. For patients with this problem, we have had success using a modified dichotic listening procedure to enable patients to practice, and eventually master, the ability to disattend to irrelevant information. This has been reported

<sup>1</sup> We thank Anthony Menditto for introducing us to the RTR technique, which is based on the earlier work of Paul and Lentz (1977).

to reduce distractibility from hallucinations and to improve the ability to focus on relevant tasks (Hatashita-Wong & Silverstein, 2003; Spaulding et al., 1986). A second example of an individualized cognitive intervention involves the use of Thematic Apperception Test (TAT) cards within the context of providing reinforcement for increasing the frequency of stories generated to stimulus cards, over several weeks of treatment (Murray, 1943; Spaulding, 1986). This technique has been reported to reduce cognitive rigidity, paranoia, and aggressiveness among aggressive patients.

## Results

### *Basic Statistics*

During the first 4 years of the program, the Second Chance Program admitted 190 patients, or approximately 1 per week. Of these patients, 67% were male. Sixty-three percent of admissions were African-American, 17% Caucasian, and 20% Latino. The mean age of patients was 38.32 ( $SD = 9.63$ ). All patients were transferred directly from state hospitals, where they had resided for a minimum of 3 years, in accordance with program admission policy. The mean length of stay at the state hospital prior to transfer to the program was 7.42 years, with a range of 3–21 years.

Although patients admitted to the Second Chance Program were considered treatment-refractory, 78% were discharged from the program. The remaining 22% of patients were unable to be discharged and were transferred back to the state hospital, either because of continued behavioral dysfunction or because of an inability to obtain a residential placement in the community. After 4 years of program operation, 67% of patients ever admitted to the program were living in the community. The remainder either were transferred back to the state hospital that referred them or were discharged to the community from the Second Chance Program but have subsequently been rehospitalized. In nearly all cases, discharged patients moved into a supervised housing arrangement. These ranged from typical supported housing settings, in which patients had their own or a shared apartment, to group homes in the suburbs of New York City. In a small number of cases, a

patient lived with family members after discharge.

Median length of stay among the 78% of patients discharged from the program was 87 days ( $M = 110$ ), which is considerably lower than the duration of their tenure at the state hospital. Forty-nine percent of discharged patients were rehospitalized on the program at least one time. Among rehospitalized patients, the mean duration of community tenure before readmission was 176 days. When admissions are divided into first versus readmissions (to the Second Chance Program), mean length of stay for first hospitalizations was 145 days, whereas for readmissions it was 67 days. Overall, these data suggest that the Second Chance Program has been successful at discharging formerly treatment-refractory patients back to the community: The discharge rate was high, the readmission rate was typical for this population, readmitted patients averaged half a year in the community before rehospitalization, and lengths of stay during readmission were relatively brief.

### *Selected Findings on Treatment Effects*

Early in the development of the program, before the initiation of the behavioral procedures described earlier, blood levels of medication suggested that patients were not taking their medication at the prescribed doses. To address this, staff instituted a policy wherein morning medications were administered during group sessions. Patients were expected to stay for the entire 45-min session; leaving the session resulted in taking a second dose of medication. The group sessions themselves involved discussion of medication and side-effect issues, as well as discharge planning. As a result of this intervention, medication blood levels approached expected levels. In addition, the rate of violent behaviors was significantly reduced. Table 3 compares data on restraint and seclusion from the 9 months in 1999 after this intervention to data from the same 9-month period during 1998. As can be seen, significant differences were obtained, indicating that the new medication groups led to significant improvement in patient behavior.

Despite the effectiveness of the morning medication group intervention, seclusion and restraint episodes were still considered to be occurring at an unacceptably high rate. To ad-

Table 3  
*Effect of Morning Medication Groups on Restraint and Seclusion*

Index	1998	1999	<i>t</i> (8) <i>p</i>
Mean no. of patients requiring restraint, per month	6.77	1.67	<i>t</i> (8) = 7.07, <i>p</i> < .001
Mean no. of restraint episodes per month	17.89	4.00	<i>t</i> (8) = 6.02, <i>p</i> < .001
Mean no. of hours of restraint per month	66.89	17.67	<i>t</i> (8) = 4.71, <i>p</i> < .005
Mean no. of patients requiring seclusion, per month	3.22	2.11	<i>t</i> (8) = 1.51, <i>p</i> < .17
Mean no. of seclusion episodes per month	9.33	3.44	<i>t</i> (8) = 3.08, <i>p</i> < .025
Mean no. of hours of seclusion per month	25.78	13.67	<i>t</i> (8) = 2.13, <i>p</i> < .07

dress this issue, the point and token systems described earlier were instituted in February 2000. This system led to dramatic changes in a wide range of behaviors, including grooming, aggressive behaviors, meal behaviors, and treatment noncompliance. Selected data are described below.

Figure 1 (left panel) shows the mean activities of daily living (ADL; or grooming) score per week over a 14-week period for all 45 patients who were on the unit for all or part of this time. The first 7 weeks represent weeks when patients were rated and feedback given, but performance was not tied to any incentive.

Week eight represents the week when performance began to be tied to reinforcers such as verbal praise, increased privileges, and tokens that could be redeemed at a token store. The following 6 weeks represent a continuation of these conditions. The choice of a 14-week period can be explained as follows: The first 7 weeks represented an attempt to examine the effects of a structured ADL review and staff feedback alone (i.e., without tangible reinforcers) on ADL behaviors; for the purposes of data analysis, the next 7 weeks were chosen as a comparison period. As can be seen in the graph, the process of simply observing and discussing

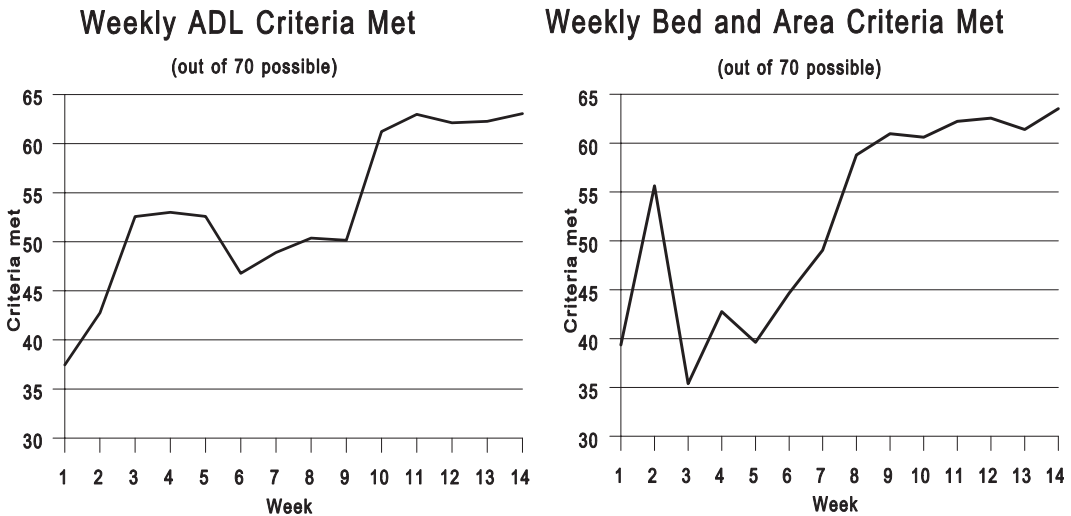


Figure 1. The graph (left) shows the mean activities of daily living (ADL; or grooming) score per week over a 14-week period for 45 patients who were on the unit for all or part of this time. The first 7 weeks represent weeks when patients were rated and feedback given but performance was not tied to any incentive. Week 8 represents the week that performance began to be tied to reinforcers such as verbal praise, increased privileges, and tokens that could be redeemed at a token store. The following 6 weeks represent a continuation of these conditions. Nearly identical results were obtained after the introduction of a contingency management system for shaping behaviors involving keeping bedroom and bathroom areas clean (right).



grooming behaviors in a public forum seemed to improve performance. However, a significant further improvement occurred after the implementation of the reinforcement procedures, which were believed to be necessary both to further improve performance and to maintain the higher level of functioning. This longitudinal series reveals a significant effect over time, with a repeated measures analysis based on maximum likelihood estimation procedures, and specifying a first-order autoregressive covariance structure, Wald  $\chi^2(13) = 278.40, p < .0005$ . In addition, a contrast comparing the first 7 weeks against the last 7 weeks revealed a significant difference, Wald  $\chi^2(1) = 31.08, p < .0005$ . Nearly identical results were obtained after the introduction of a contingency management system for shaping behaviors that involved keeping bedroom and bathroom areas clean (see Figure 1, right panel). Here, there was again a significant effect over time, Wald  $\chi^2(13) = 605.82, p < .0005$ ; as well as a significant difference between the weeks before and the weeks after the system was introduced, Wald  $\chi^2(1) = 142.94, p < .0005$ , thus demonstrating that the effect was not solely due to giving patients increased feedback about their performance. Note that these graphs reflect scores averaged across all patients who were on the unit during this 14-week period, including new admissions and patients who were discharged before the end of that period. The data can thus be seen as reflecting a real change in the functioning of the unit as a whole rather than just improvement among a single group of patients who were admitted at Week 1.

In addition to numerous examples of specific behaviors improving as a result of the unitwide application of behavior-shaping procedures, the rates of seclusion and restraint continued to decrease. Figure 2 demonstrates the average monthly total of seclusion room incidents from 2000 and 2001, compared with the data noted earlier from the 2 earlier years. As can be seen, the inception of specific behavioral rating procedures and feedback processes has led to further reduction in aggressive behaviors.

Although modeling change at the level of the unit as a whole can provide important information about program effectiveness, additional useful information can result from modeling at the patient level first. Consideration of individual differences in response to treatment can be

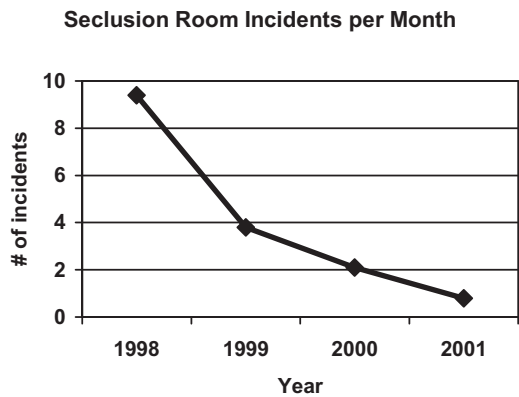


Figure 2. Number of seclusion room incidents per month on the unit.

undertaken on humanitarian grounds alone; however, it is also supported by data. For example, in the repeated measures analysis of variance discussed earlier, tracking ADL data over 14 weeks for 45 patients, the fixed effect of week (i.e., number of weeks since the initiation of the contingency management system for grooming behaviors) accounted for 50% of the variance in patient change over time. However, the random effect of patient accounted for close to an additional 20% of the variance in the data, an effect which is larger than the *R*-squared value in many treatment studies. This suggests that the patient being treated is an important determinant of responsiveness to the intervention and implies that attention should be paid to baseline characteristics and to tracking individual response profiles, as opposed to only group effects, as part of overall quality improvement efforts. Such analyses can also allow for a determination as to whether subgroups exist that may be responding differently to treatment.

To accomplish modeling beginning at the patient level, the following procedures can be used: (a) For each variable of interest (e.g., verbal abuse, grooming), each patient is characterized according to three parameters—the mean of their responses over time, their slope (or degree of change) over time, and their variability around their own trend line; (b) these values are entered into cluster analyses to determine whether meaningful subgroups exist (Kupper & Hoffman, 2000). With this strategy, meaningful subgroups have been identified on a number of variables. Figure 3 demonstrates pa-

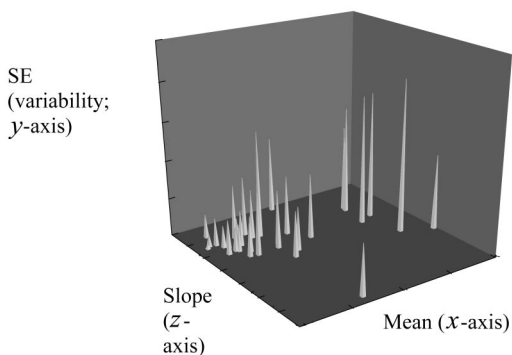


Figure 3. Pyramid plot expressing relationships between abuse parameters: Mean (x-axis), slope (z-axis), and variability (expressed as standard error; y-axis). On the z-axis, toward the back is more positive (indicating, in this case, an increased frequency of abuse behaviors over time), and toward the front is more negative (indicating decreasing scores). Each “pyramid” represents a single patient.

tient data on the aforementioned three dimensions plotted on a 3-dimensional graph, where it can be seen that subgroups exist. These data represent a summary score of combined verbal and physical abuse incidents.

Figure 4 demonstrates examples of patients closest to the centroid of each of the four clusters identified for this abuse variable. In each graph, the x-axis represents time (week in the program), and the y-axis represents the number of abuse incidents per week, on a scale ranging from 0 to 10. As can be seen in these graphs, some patients rarely demonstrate abusive behavior, whereas others do frequently. Among those groups, however, some are more variable than others, and different degrees of change over time (slope) are evident. The identification of subgroups in this fashion has important treatment implications, including the early development of behavior contracts for patients who demonstrate significant abuse behavior and/or are likely to show minimal improvement with milieu management alone and the identification of (and teaching staff and patients about) early warning signs for patients who demonstrate significant variability and frequency of an inappropriate behavior. An additional goal for future research is the determination of whether patients with different courses of treatment responsiveness have different long-term outcomes.

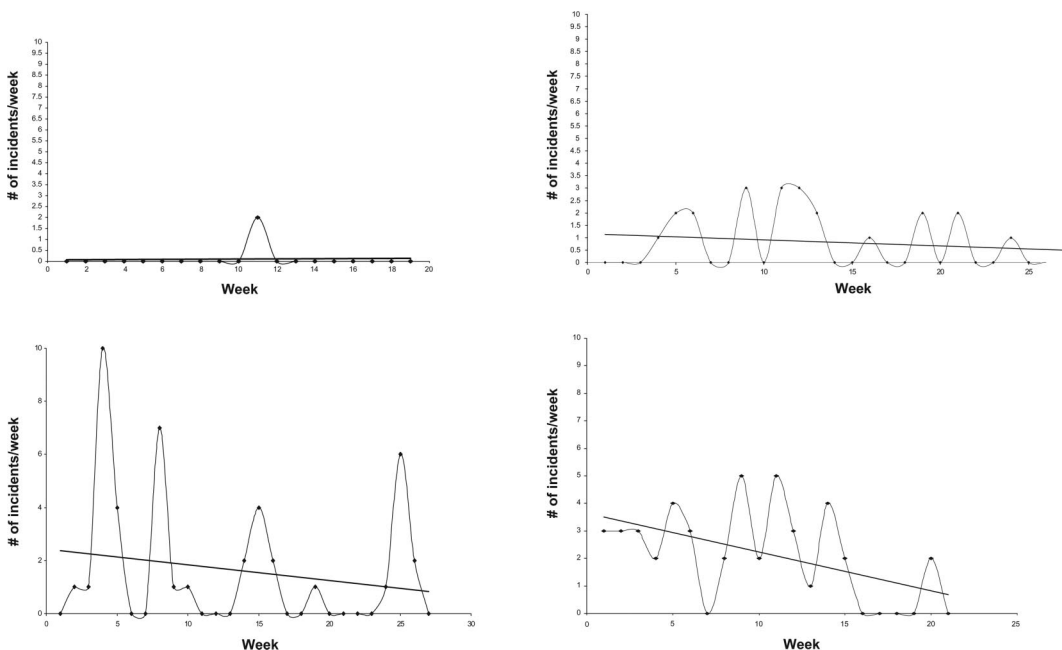


Figure 4. The four graphs depict examples of representative patients from each of four verbal/physical abuse clusters. In each graph, the x-axis represents time (week in the program), and the y-axis represents the number of abuse incidents per week on a scale ranging from 0 to 10.

## Discussion

In this article, we have summarized a specialty program for returning “treatment-refractory” patients with long stays in public psychiatric hospitals back into the community. The features of the program and outcome data were described. Our results are similar to those of previous reports using behaviorally oriented inpatient programs (e.g., Liberman et al., 2005; Paul & Lentz, 1977), and they testify to the strength of social-learning based procedures when utilized correctly. An important factor in the correct use of these procedures is the establishment of a behaviorally oriented program philosophy in which all staff provide consistent responses to patients.

The interpersonal techniques described in this article, along with the group and milieu interventions, combine to form an intensive treatment environment where patients receive a great deal of positive and corrective feedback about their behaviors. In our experience, for the majority of patients who are considered treatment refractory, such interventions are all that is required. Even the majority of aggressive patients can be helped by a combination of milieu-based feedback, behavior contracts, and groups targeting appropriate social skills, problem-solving skills, and anger management (Wilkniss, Silverstein, & Hunter, 2004). However, there are patients for whom this is not enough. Typically, patients who need additional intervention are those who have severe attentional deficits. For such patients, we recommend the use of attention-shaping procedures, as well as the development of novel techniques targeting the specific phenomenon interfering with attention (e.g., hallucinations). We have found that the use of these interventions, in combination with behavioral treatment techniques in the milieu and groups in general, create a powerful treatment environment in which even the most impaired patients can begin to see themselves as being able to succeed. This glimmer of hope is often enough to increase motivation to engage further in treatment, which is a necessary factor in producing positive outcomes.

It is not clear at this point what the relative contributions of the individual program components are to the overall outcome. Previous data indicate that the structure of a behavioral milieu can improve functioning and that the added effects of single interventions, while important, are relatively small, compared with milieu ef-

fects (Silverstein & Wilkniss, 2004; Spaulding, Fleming, et al., 1999; Spaulding, Reed, et al., 1999; Wong, 1996). Also, determination of specific contributions of individual interventions in real-world programs outside of research contexts is fraught with difficulty. Both practically and ethically, there are problems in introducing and removing interventions that appear to benefit patients. In addition, many interventions are inextricably linked. For example, observational ratings and verbal feedback are linked to token distribution, which is linked to the use of the token store. Therefore, in many cases, it would be difficult to evaluate the effectiveness of single components in isolation. In an effort to produce the most effective program, the Second Chance Program utilized evidence-based interventions (e.g., token economy, manualized skills training approaches, cognitive rehabilitation), thus minimizing the likelihood that specific interventions would be ineffective in general. The challenge in such a program is to ensure that each patient receives treatment that is maximally tailored to his/her individual needs and delivered by staff that consistently demonstrate high levels of fidelity to established procedures.

The population treated in the Second Chance Program represents the most severe end of the disability continuum among chronic schizophrenia patients. Within this context, it is notable that the program achieved a discharge rate close to 80%, a median length of stay of 3 months (compared with over 7 years prior to being transferred), and a 2-year rehospitalization rate (49%) lower than that found in many pharmaceutical company-sponsored studies that typically recruit healthier and more medication-compliant patients. Still, a number of lessons were learned that could inform future efforts to generate better outcomes. The two most obvious areas where improvement is possible involve program organization and aftercare issues. These are discussed briefly below.

Programs based in a clear treatment philosophy, such as social-learning-based inpatient programs, work best when there is a clear program leader, and all staff report to that leader (Liberman & Corrigan, 1994). In the case of the Second Chance Program, however, staff reported to their discipline heads, who were not part of the treatment program and who were typically more invested in promoting the status of discipline members than in ensuring the in-

tegrity of the treatment program. Nowhere was this more evident than with nursing staff, who typically resisted changing over to the behavioral program. A number of procedures that had been long valued by nursing staff and that could be viewed as existing for their convenience rather than for patient benefit (e.g., the practice of "quiet time," wherein patients were fined if they came out of their rooms between 2:00 and 4:00 p.m.) were eliminated as part of the new program. This inevitably led to staff conflicts, delays in implementing specific procedures, lack of faithful implementation on the part of resistant staff, staff counseling, and, in some cases, to reassignment of staff to other units in the hospital. In some cases, however, staff who had been in the hospital for many years but whose behavior was consistently inappropriate for the program (e.g., yelling at patients, not using interpersonal techniques such as the 3-step technique) were not transferred to other units, even after repeated documentation of inappropriate behavior to the discipline chief, because of political factors. These situations have been in existence since the opening of the program and continue to represent an obstacle to maximum treatment effectiveness.

A second rate-limiting factor with outcomes was the relative lack of outpatient residential facilities and treatment programs that were behaviorally oriented. Although the original partnership between state hospitals, the private hospital, and residence providers ensured that patients could be transferred in and out of the Second Chance Program, no plan existed to ensure continuity of care after discharge. This was a problem because, although relapse can be considered inevitable in some cases (because of life stress and/or illness severity), in our experience, the majority of readmissions were necessitated by the lack of behavioral treatments available at community residences and treatment facilities. This problem was most pronounced for patients who had been on a series of behavior contracts. Although these were often explained to staff at sites where the patients would be living and/or receiving treatment, we were typically told that there was no way *any* individualized treatment could be given to the patient. This led to many instances of behavior problems, which were usually the factor responsible for the patient being readmitted to the Program. There were also many instances in

which outpatient psychiatrists changed patient medication immediately after they become responsible for the patient's care. This happened most often for patients on clozapine, which many outpatient psychiatrists did not wish to continue, often for fear of liability if a patient developed complications due to a reduced white blood cell count. The effect of changing medications, in the absence of data suggesting that this needed to be done, was often a worsening of symptoms and/or behavior, thus requiring rehospitalization.

The partnership that led to the formation of the Second Chance Program involved several institutions and agencies, including the New York State Office of Mental Health, and represented a relatively unique level and scale of cooperation. To address the aftercare problems noted earlier, an extension of the original partnership would have been necessary. At a minimum, staff in selected outpatient treatment sites and residential facilities would have to be trained in the social-learning model, and ongoing monitoring of staff fidelity to treatment principles would have to become standard operating procedure at these sites. Such an effort was not supported by the state office of mental health, and even if it had, it would have been logistically difficult to carry out because of the distance between the hospital where the Second Chance Program was located and the agencies. Moreover, because staff at each hospital/agency were full-time employees at their workplace, job descriptions did not include travel to, and training of staff at, other sites. It would seem that, ideally, a dedicated staff of "experts" would be involved in both the establishment of the inpatient unit and the training of community-based staff. An alternative is the declining-contact aftercare model described by Paul and Lentz (1977) in which discharged patients met with hospital staff with gradually reducing frequency in the months after discharge. In the case of the Second Chance Program, however, this option was not implemented because of already high workloads of the inpatient staff, the distance between patient residences and the hospital, and the lack of a case manager group that could have facilitated this effort.

Despite these real-world difficulties, the development of the Second Chance Program indicates that it is possible for different stakeholders to work together to forge solutions that can

improve the lives of long-stay patients who are considered treatment refractory in state hospital settings. As was demonstrated long ago (e.g., Atthowe & Krasner, 1968; Ayllon & Azrin, 1968; Paul & Lentz, 1977), delivery of optimal, social-learning-based treatment can lead to a reduction of inappropriate behaviors, increased frequency of appropriate behaviors, and successful transition from being reliant on external reinforcers (e.g., tokens) to self-control of behavior based on intrinsic and social reinforcement. The existence of the Second Chance Program, however, which was staffed with a regular hospital staffing pattern, raises the issue of why similar outcomes are not routinely produced in state hospital and other long-stay settings. This speaks to the need for greater awareness of evidence-based interventions for chronic schizophrenia and a willingness to devote attention to the dissemination, implementation, and maintenance of such programs. This is a complex issue that requires intervention on a number of levels, including increasing the number of graduate programs in clinical psychology that offer training in this area, raising the status of psychologists in psychiatric hospital settings so that their potential contributions are realized (Jewell & Silverstein, 1999) and changing the benchmarks by which hospital program outcomes are evaluated (to include, among other variables, the implementation of best practices, the assessment of functional improvement of patients, and the degree to which staff adhere to the program model). Although best practices initiatives do not always include a focus on people with chronic schizophrenia (Silverstein et al., 2002), enough is now known about how to help this group (Lieberman et al., 2005; Silverstein et al., 2006) so that failure no longer need be an option.

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