

Psychiatric rehabilitation

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Despite advances in the treatment of schizophrenia, a significant number of patients experience a chronic or intermittent illness with enduring difficulty managing everyday activities. Stigma, inadequate or inaccessible treatment services, unemployment, poor quality housing and lack of leisure opportunities all complicate the social disablement that arises from the disease itself. Researchers and practitioners alike have increasingly acknowledged the necessity of indefinite continuous maintenance treatment of persons with schizophrenia and other mental disabilities, using psychosocial as well as drug therapies. Just as individuals with schizophrenia are more likely to relapse when withdrawn from antipsychotic drugs, so susceptibility to stress-induced relapse increases when effective psychosocial treatments are terminated. Moreover, regular ongoing psychosocial services, flexibly available according to patients' changing needs, assure higher levels of community functioning and quality of life. The realization that the continuous application of biopsychosocial therapies can reduce the long-term disability and persisting or relapsing psychotic symptoms inherent in disabling mental disorders such as schizophrenia has given birth to the field of *psychiatric rehabilitation* (Anthony & Liberman 1986; Liberman 1992; Liberman *et al.* 1999).

While early and effective intervention for acute psychotic episodes is important for minimizing long-term disability, psychiatric rehabilitation emphasizes continuous comprehensive services for symptom control, prevention or mitigation of relapses, and optimizing the chronically ill patient's performance in social, vocational, educational and familial roles. Treatment should be linked to the phase of the person's illness and provide the least amount of support necessary from the helping professionals. The clinical practice of psychiatric rehabilitation joins together three approaches.

1 Pharmacotherapy judiciously keyed to the type and severity of psychopathology with dosage that does not produce sedation, neuromotor and other toxic side-effects that interfere with positive and active engagement in rehabilitation.

2 Development of skills in the patient that are linked to stressors and life situations, as well as personal assets and deficits, which challenge the individual's adaptation and independence.

3 A range of supportive social services, such as case management, which offer a decent quality of life, even to individuals whose symptoms and functional disabilities persist despite best efforts at treatment and rehabilitation.

In addition, a pillar of psychiatric rehabilitation is based on the assumption that disabled persons need empowerment to be actively involved in treatment decisions and to achieve the highest possible quality of life in the community (Anthony *et al.* 1988). Empowerment can develop from teaching disabled persons the skills they need for self-advocacy, self-help and also by public health efforts at destigmatization (Kommana *et al.* 1997; Liberman, in press).

The challenge to psychiatric rehabilitation is of public health proportions. With the fragmented mental health service system in the USA, thousands of homeless mentally ill people live wretchedly and even more are warehoused in prisons and locked residential facilities in the community. These regressive trends, eerily reminiscent of the dark ages of prenineteenth century indifference to the mentally ill, come just at the time when internationally replicated studies have shown that substantial symptomatic and social recoveries can be achieved with more than half of individuals with chronic schizophrenia when continuous rehabilitative services are available over a 20–40-year period (Harding *et al.* 1987).

The failure to provide high-quality continuous psychiatric treatment is brought into bold relief by the availability of new rehabilitative technologies which, when systematically organized and delivered, have the potential for accelerating recovery by reducing morbidity, disability and handicaps (Kopelowicz & Liberman, in press). Psychosocial treatments have been widely found to engender positive outcomes in a number of areas, including reduced relapse rates, treatment compliance and increased social and independent living skills. Cognitive-behavioural therapies have also been found to have significant positive effects on other areas of functioning, including improved cognitive functioning, amelioration of psychotic symptoms refractory to medications, and lowered rates of risky behaviours, such as unprotected sex and smoking (Heinssen *et al.* 2000; see also Chapter 33).

In summary, the emphasis of psychiatric rehabilitation is on providing continuous, comprehensive and co-ordinated services to control symptoms, prevent relapse and optimize performance in social, vocational, educational and familial roles. A rehabilitation programme may include educational activities, supported employment, social and life skills training, creative therapies and recreation (Glynn *et al.* 1994; Hume & Pullen 1995; Wallace *et al.* 2001b). Social and life skills programmes are a core element in rehabilitation, addressing the multiplicity of needs associated with independent functioning in the community, including making friends, managing one's illness, establishing independent recreation, managing money, self-care and domestic skills (Wallace *et al.* 2001b). By designing special programmes that can compensate for patients' deficits, rehabilitation practitioners can offer supports in work, housing and community life that may offer normalizing experiences. Thus, enhancing skills and modifying environments to be more supportive of adaptive functioning are the twin features of psychiatric rehabilitation.

Conceptual framework

The consequences of enduring mental health problems are social as well as personal and have been defined as follow.

- 1 *Impairments*: the positive and negative, affective and cognitive symptoms and signs of the disorder.
- 2 *Disabilities*: the difficulties in fully performing tasks, consequent on persistent impairments (e.g. in the areas of self-care, social relationships and work).
- 3 *Handicap*: the disadvantage and exclusion from social roles, consequent on impairments and disabilities, principally stigma, alienation from friends and family, unemployment, homelessness and poverty.

As social factors have a major role in disabilities and handicaps, diagnosis and cross-sectional severity of symptoms are poor predictors of outcome, especially in the functional domains (Strauss & Carpenter 1977). The often fluctuating course of mental disorder is best conceptualized by the *vulnerability-stress-coping-competence model* (Anthony & Liberman 1986). In this model, biological vulnerabilities predispose a person to schizophrenia when he or she is exposed to environmental stress (e.g. a life event, change in life phase or use of some illicit drugs). These stresses can be mitigated by interventions that enhance coping and competence, such as medication, social support and skill building. Symptoms and disabilities emerge when these protective factors are overwhelmed by stress, or when they 'atrophy as a result of disease, reinforcement of the sick role or loss of motivation' (Anthony & Liberman 1986, p. 547). Even in the absence of major life events or the noxious effects of illicit drugs and alcohol, vulnerable individuals can succumb to ambient levels of tension or conflict in their environment, or microstressors if they lack the protection conferred by medication, coping abilities and social support.

General principles of rehabilitation

Psychiatric rehabilitation aims to reduce exposure to stress and to optimize protective factors through the best use of medication and social skills training. However, protective services must be delivered in the context of a therapeutic alliance infused with empathy, enthusiasm, warmth and respect for the views, strengths and needs of persons with schizophrenia and their families (Strauss 1994). While this chapter concentrates on describing specific rehabilitation techniques, we cannot emphasize enough the importance of embedding services within a comprehensive, co-ordinated, collaborative, consumer-orientated and supportive framework. Some salient principles of psychiatric rehabilitation are depicted in Table 32.1.

Foremost for psychiatric rehabilitation is the necessity for a collaborative relationship. Patients who are active participants in their care are more likely to co-operate with treatment, less likely to default from care and more likely to achieve success in their personal goals. A comprehensive assessment is essential, not least because patients typically come to rehabilitation services after many years of 'revolving door' treatment from discontinuous sources and unreliable accounts of past treatment.

A newly validated tool for integrating assessment with rehabilitative interventions is the Client's Assessment of Strengths, Interests and Goals (CASIG), the first method for assessment that can be embedded in the clinical process of planning and evaluating treatment in an ongoing fashion (Wallace *et al.* 2001a). Based on CASIG's comprehensive assessment of symptoms, personal goals, instrumental skills and deficits, environmental resources available to the individual (including the family and community-based services), attitudes toward and use of medication, and quality of life, a treatment plan can be tailored to that individual. The same functional domains can be periodically administered to evaluate progress toward goals and the need to change the treatment plan. CASIGs can also be aggregated across patients to conduct programme-wide evaluations and compare programmes.

An assessment of symptoms and functional status – repeatedly checked and monitored – drives the clinician's decision-making regarding the timing, intensity, form and comprehensiveness of treatments that need to be provided. If remissions of psychotic symptoms and social recoveries are to be accelerated and sustained, the treatment decisions must be guided by ongoing periodic assessment of the individual's psychopathology, functional assets and deficits, deviant behaviours and personal and environmental resources that can be mobilized for community support. Assessment and intervention are inextricably interwoven in the pursuit of realistic goals and removal of obstacles to rehabilitation. Moreover, the individual patient and his or her relatives or caregivers must be engaged collaboratively in the assessment, goal setting and treatment process from the very start. When patients and their natural support network are active partners in the clinical process, progress in rehabilitation is greatly facilitated.

Table 32.1 Some key principles of psychiatric rehabilitation.

- Services must be comprehensive, continuous, co-ordinated, collaborative, consumer orientated and delivered with respect and positive attitudes reflecting the belief that patients – given their biological endowments, biobehavioural vulnerabilities, learning experiences and resources – are always doing the best they can. It is the task of treaters to organize and deliver services that will enable patients to function better.
- Services should be individualized and keyed to the phase and type of the person's disorder: acute, stabilizing, stable, recovering or refractory.
- Outreach and engagement of the patient is predicated on the understanding that motivation for treatment is not an intrinsic trait but rather can be generated by the way in which services are provided and the quality of the therapeutic relationship.
- Motivation for participating in the full array of services – from pharmacological to psychosocial – should be developed by matching treatments to the personally relevant goals of each patient.
- Patients, family members and other natural supporters should become active participants on an extended treatment and rehabilitation team.
- Treatment (e.g. medications) and rehabilitation (e.g. skills training) are inextricably interwoven – they are two sides of the same coin.
- Rehabilitation services should be linked to individualized needs assessments, deficits and strengths, neurocognitive functioning and personal goals of patients.
- The mainstay of psychiatric rehabilitation is creating learning environments wherein patients may acquire knowledge and skill that will empower them to function at higher levels with better quality of life.
- Wrapping social supports around patients can compensate for their behavioural deficits, instrumental role disabilities, and neurocognitive and symptomatic impairments, thereby enabling patients to function in acceptable and normalizing social and community roles.
- Cognitive remediation – or 'training the brain' – may provide a higher platform or point of departure for skills training and other rehabilitation services.
- Generalization of behaviour does not take place automatically; rather, it requires planning and programming for opportunities, encouragement and reinforcement from the natural environment for patients' use of the skills they have learned in a clinic or mental health setting. Thus, it is advisable to involve the patient's natural support system in the rehabilitation enterprise from the very start.

A key aspect of rehabilitation is the recognition that peoples' behaviour varies substantially from one situation to another. In general, task performance is more stable than social behaviour and simple skills are more transferable than complex ones. Many of the improvements seen in a narrow rehabilitation setting are responses dependent upon the particular characteristics of that environment and do not readily transfer or generalize to other more complex settings and situations. Therefore, care must be given to preparing people for the environments in which they will be expected to function and, in a reciprocal manner, preparing the environments so that patients receive encouragement, reinforcement and support to consolidate their progress. In general, it is probably better to rehabilitate *in vivo* than in the contrived setting of the hospital clinic, psychosocial clubhouse or mental health centre.

Most rehabilitation programmes draw heavily upon cognitive-behavioural principles and strategies. The two major strategies are:

- 1 teaching skills for coping with the challenges of community life; and
- 2 engineering psychosocial services and environments to be supportive in assisting the individual to compensate for symptoms, cognitive impairments and role deficiencies.

Principles inherent in skills training derive from the field of social learning, including motivational enhancements, modelling, coaching, shaping, positive reinforcement and programming for generalization (Lieberman 1988). When these behavioural learning principles are used consistently and contingently upon small increments of adaptive behaviour exhibited by the patient, they can overcome persistent psychotic symptoms and neurocogni-

tive deficits in improving role functioning (Eckman *et al.* 1992b; Liberman *et al.* 2001).

Long-term goals are typically comprehensive, dealing with the relevant domains of life function – social, familial, interpersonal, medical, vocational, recreational and spiritual. Short-term goals, which may involve weeks or a few months, are the stepping stones towards the long-term goals and need to be 'SMART' (specific, measurable, achievable, realistic and time-limited) – set in collaboration with the patient, relatives and other natural supporters (Tauber *et al.* 2000). Specific interventions and treatments are devised with the aim of producing a series of consistent, if modest, achievements, backed up by frequent praise, encouragement and support.

Organization and delivery of services

There are two prototypes for the organization and delivery of rehabilitative services to persons with schizophrenia and other severe and persistent mental disorders. The model currently receiving most attention is a community-based team approach termed Assertive Community Treatment (Test 1992; Phillips *et al.* 2001). It was originally developed by an interdisciplinary team of clinicians at the University of Wisconsin (Stein & Test 1980; Stein & Santos 1998) as an alternative to mental hospitalization and as a means of improving patients' quality of lives by maintaining their tenure in the community. The second evidence-based mode for organizing and delivering services is primarily, but not exclusively, hospital-based and has been termed the token economy or social learning programme

(Ayllon & Azrin 1968; Liberman 1972; Paul & Lentz 1977; Kazdin 1982; Liberman & Corrigan 1994).

Assertive Community Treatment

At the present time, when lengths of stay in hospital are necessarily brief, there is the need to wrap the multiple components of rehabilitation services in a comprehensive community-based system of care. In both Britain and America, clinical case management provides the most popular vehicle for continuing care in the community. Several alternative models have emerged (see Chapter 34) and there have been a number of comprehensive reviews (Mueser *et al.* 1998; Latimer 1999; Phillips *et al.* 2001). These suggest that the Assertive Community Treatment model, and possibly other forms of intensive clinical case management, substantially reduce psychiatric hospital use, contribute to longer tenure in the community, and have modest effects on symptoms and subjective quality of life, although little impact on social functioning. It is not surprising that social functioning is not significantly improved by an outreach system that does not formally or systematically teach social and independent living skills to patients. British studies have failed to replicate the American findings of reductions in hospitalization or of improved outcomes over 'standard' care (Holloway & Carson 1998; Thornicroft *et al.* 1998; Burns *et al.* 1999), possibly reflecting differences in the implementation of Assertive Community Treatment or differences in the extent of resources and networks for community care available in 'standard' services in Britain.

Assertive Community Treatment provides a continuum of psychiatric, medical and social services to persons with schizophrenia in the community through the operation of mobile outreach teams of clinicians doing whatever is necessary to keep patients in the community and out of hospitals (Test 1992). This framework for delivering services is also referred to as 'intensive case management' or 'training in community living'. As the needs of patients change with different phases of their illness, the continuous treatment team must offer varying degrees of case management support and appropriate forms of pharmacotherapy, family education, social service entitlements, housing, skills training, vocational rehabilitation, financial support, health care, crisis intervention, rehabilitation, and advocacy. Case management has a central role in co-ordinating services and in assuring that quality and continuity of care remain. Specific duties of case managers include discharge planning from the inpatient setting, establishing linkages with community programmes, networking with these programmes to confirm that linkages have occurred, assuring that quality community care is offered, and advocating for services when they are insufficient, of poor quality or not provided at all (Kanter 1989).

Token economy and social learning programmes

Token economies rely on laws of operant conditioning to establish contingencies of reinforcement that increase the frequency

of targeted desirable behaviours (Skinner 1953). Handing out tokens (e.g. points on a patient's 'credit' card, or poker chips) contingent on adaptive behaviour, which can be exchanged for snacks, beverages and privileges, make tokens rewarding in themselves. Using tokens to manage behavioural contingencies provides several benefits.

- 1 Tokens permit more immediate reinforcement of spontaneous skills by bridging the delay between target responses and back-up reinforcement.
- 2 Distribution of reinforcers is more flexible with behaviours being able to be rewarded at any time.
- 3 Intermittent reinforcement enables new behaviours to be maintained over extended periods when immediate token or back-up reinforcement is unavailable.
- 4 Learning to improve one's functioning in a token economy may prepare patients for living in the economy outside the hospital (Ayllon & Azrin 1968; Kazdin & Bootzin 1972).

The technique can be used to modify any behaviour and it has been suggested that it is particularly beneficial for people suffering from schizophrenia, as they may be less responsive to everyday social rewards (Layne & Wallace 1982).

Several steps must be accomplished to implement a successful token economy. First, behaviours to be targeted in the token economy must be identified. These include self-care and appropriate social behaviours, for which all patients receive tokens, and overly aggressive or hostile behaviours, which result in token 'fines'. Each behaviour needs to be sufficiently described and operationalized so that it can be reliably recognized by patients and staff.

Next, contingencies must be created that govern the consequences of these behaviours. Contingencies describe 'if-then' rules connecting a target behaviour with a reinforcer or fine. When setting up a token economy, payments and fines should be determined on an individual basis by a staff team familiar with the patient's behavioural level of functioning. Individualization will increase the likelihood that patients will achieve a positive balance of tokens each day, which is desirable for motivating patients, as rewards must not be too difficult to obtain. As the token economy progresses, specific contingencies can be adjusted, depending on the frequency with which the behaviours are performed by the patient group and the fluctuating rate of commodity purchases.

Token economies provide several advantages for the management of the inpatient behavioural milieu (Kazdin 1982). The token economy is not affected by satiation, a common problem when specific reinforcers, such as food or ward privileges, are used. In fact, research has shown that tokens by themselves may assume a greater and more generalized incentive value than any single primary reward.

Token economies have been extensively studied in the treatment of chronic institutionalized psychiatric patients. The token economy approach has been used to increase self-care skills and reduce the expression of symptoms, aggression and bizarre behaviour (Atthowe & Krasner 1968; Ayllon & Azrin 1968; Maley *et al.* 1973; Hall *et al.* 1977; Glynn & Mueser 1992).

Results have shown that symptoms and self-care skills of subjects in these studies have significantly improved, even after other treatments were unsuccessful. In an early study, Wincze *et al.* (1972) compared a token economy with verbal feedback as a means of reducing delusional speech of 10 patients suffering from chronic paranoid schizophrenia. Patients received tokens at fixed intervals for not expressing delusional ideas. Verbal feedback involved challenging and correcting delusional statements. The frequency of delusional statements decreased for seven of 10 patients in the token condition. In another early study, Liberman *et al.* (1973) reported on four controlled case studies in which a multiple baseline was used. Patients were paired with a favourite staff member each evening to share pleasant banter and snacks. After several non-contingent meetings, patients were told that the length of the evening chat would be proportional to the number of tokens earned for delusion-free talk during four daily intervals. After only 18 days, the frequency of delusional speech fell by 200–600%. Three of the four patients maintained their improvement after the social contingencies were slowly faded.

In a classic study by Paul and Lentz (1977), 84 chronic patients were randomly assigned to token economy, milieu therapy or traditional custodial care. After 14 weeks of treatment, every resident in the social learning (token economy) programme showed dramatic improvements in overall functioning. The average patient increased interpersonal and communication skills by over 1200% of entry level. Patients in the milieu therapy group also improved. By the end of the second year, fewer than one-quarter of the patients in either experimental condition were on maintenance medication and 97% of the token economy patients, 71% of the milieu group, but only 45% of the custodial care group had been discharged and were living in the community. The social learning programme was the most cost effective when the costs of hospitalization were included.

The token economy approach has been successfully employed in many settings around the world. Li and Wang (1994) in China randomized 52 chronic schizophrenia patients to a token economy programme or to a treatment-as-usual condition in which they did not receive training or reinforcement but were individually asked to perform the same daily tasks and activity programme as the experimental subjects. After 3 months, the severity of negative symptoms, assessed by an independent researcher, had declined in both groups but the effect was much greater in the experimental group.

Despite evidence in its favour, the approach has waned in popularity. There are several reasons for this decline. First, it is widely believed that the results may have more to do with changes in the way staff interact with patients than with the use of tokens *per se* (Baker *et al.* 1977; Liberman *et al.* 1977). Secondly, these programmes are expensive, requiring relatively high staffing levels, high-calibre nursing staff and intensive training. Finally, there are concerns about the ethics of a programme in which patients must 'earn' rewards that some see as their right. Nevertheless, the principles of contingency management are probably an important aspect of all treatment pro-

grammes and the method may still have something to offer, particularly in residential units that deal with severe disability and challenging behaviours (Silverstein *et al.* 1999).

Specific interventions

Enhancing skills

There are three approaches to building skills in individuals with schizophrenia and other serious mental disorders; one has been already described, the token economy, which requires the systematic application of behavioural learning principles and contingent reinforcement in the context of a living environment. The other two approaches also require application of precision teaching techniques based on social learning theory: social skills training and cognitive remediation. In the former, the social and independent living skills of the individual are targeted for enhancement whereas in the latter, the therapeutic targets are the cognitive functions of the individual (e.g. memory, verbal learning, sustained attention and reaction time).

Social skills training

Social skills training, used to improve social and daily living skills for independence in the community, is the most widely utilized psychosocial intervention in the rehabilitation of severely mentally ill people (Liberman *et al.* 1986, 1989, 1993; Bellack *et al.* 1997). Three broad models underpin most approaches (Corrigan *et al.* 1992). The *response topography* model suggests that complex skills can be decomposed into a number of discrete 'micro' skills. For example, conversation comprises non-verbal signals such as eye contact, facial expression and gestures as well as appropriate verbal responses. The *content-related behaviour model*, in contrast, emphasizes the content of behaviours such as how to ask for information. In both models, participants learn the expressive components of social skills – for example, how to introduce themselves, paying attention to non-verbal expression as well as to appropriate content. These approaches have been criticized for failing to produce flexible responses in more complex situations (Trower *et al.* 1978) and they have been largely overtaken by *cognitive problem-solving* models which describe the skill deficit in terms of impaired information processing characteristics of schizophrenia (Liberman *et al.* 1980; Wallace *et al.* 1985; Mueser *et al.* 1991).

The social problem-solving approach teaches social norms and rules to improve the patient's ability to interpret cues from the social environment and generate appropriate responses to these cues. Support for this model comes from studies showing associations between poor performance in skills training and difficulties comprehending interpersonal problems (Donahoe *et al.* 1991; Liberman *et al.* 2001), a lack of comprehension of the rules and goals of interpersonal situations (Corrigan & Green 1993) and an unawareness of the linguistic rules that underlie conversation (Trower *et al.* 1978).

In practice, these variants of social skills training are usually combined and integrated by a step-by-step method of instruction. Complex interpersonal behaviours are broken down into smaller steps which can be addressed through a variety of teaching methods including motivational interviewing, didactic and Socratic instruction, shaping, modelling, corrective feedback, *in vivo* and homework exercises. Functional assessment is carried out to determine the patient's assets, deficits and resources available for strengthening skills, a process which should be carried out periodically to evaluate progress and suggest changes in the goals and training pace and techniques. Attempts are made to identify barriers to learning and the system of natural reinforcers that may be acting to strengthen or weaken adaptive behaviours. This information is used to build up a profile of the patient's strengths and difficulties, to identify the aspects of skill training that may be needed and to negotiate goals that are realistic and acceptable to the patient (Heinssen *et al.* 1995).

Skills training can be delivered in an individual, family or group format. Group-based approaches typically use a structured programme comprising a number of discrete skill sets such as conversational skills, job skills and symptom monitoring. One popular approach is the modular programme for training social and independent living skills developed by Wallace, Liberman and their colleagues at the UCLA Clinical Research Center for Schizophrenia and Psychiatric Rehabilitation. This programme teaches a range of skills including medication self-management, basic conversation skills, grooming and self-care, workplace skills and interpersonal problem-solving. The approach uses didactic and Socratic instruction, videotape demonstrations, role-play, problem-solving exercises, *in vivo* exercises and homework practice (Wallace *et al.* 1985; Liberman & Corrigan 1993; Liberman *et al.* 1993).

Each module has a trainer's manual, participant's workbook and demonstration videotape. It is specified in the manual exactly what the trainer is to say and do to teach all the module's skills. Once familiar with the structure and learning activities of the modules, trainers can use their own clinical style to teach the skills and 'deconstruct' a module to individualize its use. Clinicians can learn to use the system and implement these learning activities with a high level of fidelity (Eckman *et al.* 1992a; Wallace *et al.* 1992; Liberman & Corrigan 1993). Numerous empirical trials have documented the efficacy, durability, generalizability and cross-cultural applicability of the modules (Liberman *et al.* 1998; Kopelowicz *et al.* 1999; Wallace *et al.* 1999; Heinssen *et al.* 2000).

There have been many clinical trials of psychosocial skills training showing benefits over standard care in terms of improved conversational skills, assertiveness, recreational skills, grooming, job finding and medication management (Wong *et al.* 1988; Scott & Dixon 1995; Dilk & Bond 1996; Penn & Mueser 1996; Heinssen *et al.* 2000; Tsang & Pearson 2001). As would be predicted by treatment-specific outcomes, social skills training has only modest impact on symptoms, relapse and hospitalization, with some studies finding no significant advantage over more traditional occupational therapy or group-based sup-

portive psychotherapy (Dobson *et al.* 1995; Hayes *et al.* 1995; Liberman *et al.* 1998; Bustillo *et al.* 2001).

In one randomized controlled trial in which patients with schizophrenia were trained in medication and symptom management while receiving low-dose fluphenazine decanoate, relapse rates were kept very low when incipient exacerbations were treated with placebo supplements, as compared with patients who received supportive group therapy and supplemental fluphenazine at prodromal periods (Marder *et al.* 1996). While having only a modest impact on symptoms, it also appears that neither positive nor negative symptoms, other than severe thought disorder, predict the level of participation, acquisition of skills or overall response (Eckman *et al.* 1992b; Corrigan *et al.* 1994; Lysaker *et al.* 1995; McKee *et al.* 1997; Smith *et al.* 1999), although enduring psychotic symptoms may reduce the retention of skills after brief training (Mueser *et al.* 1992).

Data on the extent to which new skills generalize across settings or fade with time is sparse, but growing in recent years. There is some evidence for the benefit of including 'booster' sessions and for carrying out *in vivo* training exercises away from the initial treatment setting. In one study at the UCLA Clinical Research Center, 80 stable DSM-IV schizophrenia outpatients were randomly assigned to receive either skills training or supportive group psychotherapy. Skills training involved twice-weekly sessions over 6 months with continuing weekly group meetings for 12 months. Symptomatic improvement occurred in both groups but patients who received the modular training showed greater increases in knowledge and living skills that were maintained across the 12-month follow-up. Only a single booster session was needed to maintain performance at post-training levels. In that study, the experimental group achieved significantly better outcomes on measures of social adjustment over the study period (Marder *et al.* 1996).

Two recent studies have explored the addition of social skills training to case management. In one study, 84 schizophrenic men with persistent, largely treatment resistant symptoms were randomly assigned to either social skills training or occupational therapy (Liberman *et al.* 1998). Each group of patients received intensive clinic-based treatment for 6 months followed by 18 months of assertive case management. The social skills training was carried out by an occupational therapist and three assistants, focusing on four modules taken from the UCLA Social and Independent Living Skills Program: basic conversation, recreation for leisure, medication management and symptom management. Case managers encouraged patients to use the skills they had learned in their everyday community living. Patients were followed up over 2 years during which time those receiving social skills training showed significantly greater knowledge and performance of independent living skills, including improved function in areas not explicitly dealt with in the training sessions. Only the social skills group reported significant improvements in the use of transportation, job seeking and job maintenance.

In another controlled trial, individuals with schizophrenia were randomly assigned to receive risperidone or haloperidol

and again to clinic-based social skills training or to clinic-based skills training augmented by *in vivo* booster training sessions joined with advocacy by a case manager who aimed to generate opportunities, encouragement and reinforcement from the patients' natural support network for employing their skills in everyday life. Regardless of medication condition, those patients who obtained *in vivo* amplified skills training exhibited significantly better social adjustment in their community life over a 1-year follow-up period (Glynn *et al.* in press). When patients were living with an immediate family member or live-in partner, the advocacy and consultation by the case manager resulted in continued improvements in community functioning over a 2-year follow-up period.

At the Santa Barbara Community Mental Health Center, a controlled effectiveness trial with severely mentally ill patients introduced a programme termed 'partners in autonomous living' in which friends, relatives or staff from group homes were nominated by patients to assist them in using the social and independent living skills acquired at the mental health centre. The skills training at the mental health centre included twice weekly participation in the medication management, symptom management, recreation for leisure, and basic conversation skills modules. The natural supporters received orientation skills training and how it could be generalized and met with their patients for an average of 30 min per week over a 6-month period. Those patients who were randomly assigned to 'partners in autonomous living' revealed significantly greater interpersonal skills at the completion of the project (Tauber *et al.* 2000).

Skills training methods have been successfully employed with acute inpatients (Kopelowicz *et al.* 1998; Smith *et al.* 1999), persons with residual symptoms (Dobson *et al.* 1995; Hayes *et al.* 1995) and those with severe and persistent illness (Wallace *et al.* 1992; Liberman *et al.* 1994, 1998; Silverstein *et al.* 1999; Spaulding *et al.* 1999). Finally, successful attempts have been made to employ brief interventions to enhance compliance with medication (Kemp *et al.* 1996, 1998). From these studies it appears that most patients can benefit if procedures for skills training are adapted to their particular deficits, symptom profiles and cognitive impairments. Because there is so much overlap in learning principles and training techniques, it is impractical to compare the relative superiority of different social skills training approaches.

Cognitive remediation

While the types and extent of cognitive dysfunctions vary greatly among persons with schizophrenia, recent evidence has accumulated that abnormalities in verbal learning, verbal recall, secondary verbal memory, spatial and verbal working memory, sustained attention and executive functions (e.g. planning and initiating activities, changing response strategies as external conditions change) are correlated with psychosocial functioning in work, self-care and interpersonal domains (Mueser *et al.* 1991; Kern *et al.* 1992; Bowen *et al.* 1994; Corrigan *et al.*

1994; Green 1996; Storzbach & Corrigan 1996; Green & Nuechterlein 1999). Prospective studies have indicated that poorer neurocognition at baseline predicts the amount of learning of community living skills that takes place subsequently (Kopelowicz *et al.* 2001). It is therefore a very appealing idea that remediation of these neurocognitive impairments might lead to improved personal and social functioning. In essence, cognitive remediation aims to retrain and improve basic processes of memory, attention, speed of information processing and abstraction. Another strategy, to bypass neurocognitive abnormalities through creating supportive and prosthetic environments for the individual with schizophrenia, will be described below in the section on Modifying environments.

Early efforts to treat cognition in schizophrenia directly were carried out using self-instructional approaches (Meichenbaum & Cameron 1973). These involved the rehearsal of self-instructions aimed at maintaining attention to tasks and inhibiting impulsive responses. The self-instruction was initially rehearsed while performing simple laboratory tasks and then gradually introduced to more complex *in vivo* social or work tasks. The original study (Meichenbaum & Cameron 1973) demonstrated improvement on psychological tests, interview performance and social behaviour. However, while improvements on specific tasks were observed, there was little generalization to areas that had not been the focus of the intervention (Spaulding *et al.* 1986; Bental *et al.* 1987).

From this early work, the development of remediation strategies has proceeded from the systematic exploration of the efficacy of particular 'laboratory-based' interventions to the gradual incorporation of these findings into broader clinic-based interventions. Perhaps the most widely reported studies concern the development of interventions designed to remediate the specific deficits of individual patients. In these *individualized* approaches, patients receive a neuropsychological assessment, the results of which are then used to devise an intervention comprising a series of exercises of increasing complexity. The extent to which the initial neuropsychological assessment 'drives' the intervention or is a basic underpinning for wider strategies varies somewhat between studies. For example, Spaulding and colleagues base the programme explicitly on the patient's deficit profile (Spaulding & Sullivan 1991). They describe a patient with moderate problems with executive function and socially inappropriate behaviour. Over a course of 10 sessions, the patient was taught how to generate alternative precepts and cognitive flexibility in social situations. After training, the patient was retested and showed improvements on the Wisconsin Card Sorting Test and on measures of irritability and attitude. People with schizophrenia have been shown to be able to remember verbal and visual information more effectively when it was organized into meaningful categories or when items were placed on a continuum (Storzbach & Corrigan 1996).

There have also been reports of interventions based on cognitive exercise programmes borrowed from neuropsychological rehabilitation, some of which can be administered by computer. In one of the more recent of these studies (Medalia *et al.* 1998)

used the Orientation-Remedial Module from a computerized program originally developed for people with brain injury and compared this with a control intervention that involved watching National Geographic documentaries. Experimental and control conditions each involved three 20-min sessions spread over a 6-week period. The experimental intervention included instructions in how to complete tasks that were also the outcome measure. One test required participants to press the space bar on the keyboard whenever the letter A appeared on the screen. Scores were obtained for the number of letter presses and the percentage of correct responses. Subjects in the experimental condition showed improved performance on the training task but it is impossible to say whether this would generalize to clinically relevant tasks and settings. There was no immediate effect on mental state. Regarding the shaping of attending behaviours, Silverstein *et al.* (1998, 1999) have tested this method in league with social skills training. In one study, they found that severely attentionally impaired subjects were able to increase their attention spans from <5 to 45 min in a skills training class (Silverstein *et al.* 1998).

In a clinically relevant study, patients with chronic schizophrenia were randomly assigned to intensive cognitive remediation (CR) or to an 'intensive occupational therapy' control condition (Wykes *et al.* 1999). Patients receiving the intensive CR attended for individual daily 1-h sessions that focused on executive functioning deficits (cognitive flexibility, working memory and planning). The intervention drew heavily on behavioural and learning techniques: procedural learning, targeted reinforcement, massed practice and errorless learning. Some improvement in cognitive function was seen with both therapies, but a differential effect in favour of CR was found for tests of cognitive flexibility and memory subgroups. There was an interesting trend for patients receiving atypical antipsychotic medication to benefit more from CR. Social functioning, which was not addressed directly, also tended to improve in those patients whose cognitive flexibility scores improved with treatment.

One approach to direct remediation is undertaken in a dyadic format after a relationship is established between patient and therapist. Specific cognitive deficits are identified through laboratory tasks, analysis of the patient's symptoms and observation of behaviour. The impairments are addressed in a series of exercises, starting with simple laboratory tasks and gradually progressing to complex *in vivo* performance of tasks that demand more effective use of the impaired processes. Reports of successful cases include patients from the entire spectrum of rehabilitation candidates, from mildly to severely cognitively impaired, in settings ranging from outpatient clinics to public institutions. An accumulation of reports over the years provides substantial evidence for effectiveness, but conclusive verification will require large-scale highly controlled outcome studies (Olbrich & Mussgay 1990; Burda *et al.* 1991; Stuve *et al.* 1991; Green 1993; Spaulding 1993; Goldberg 1994).

In contrast to these patient-specific interventions are training courses designed around broad deficits found in most persons

with schizophrenia. Individual deficits are acknowledged and are used to make some adjustments to the programme although the primary emphasis remains on a training model and not on cognitive deficit profiles of the individual members. The approach has grown from the basic rehabilitation principle that has long recognized the importance of tackling complex tasks in small steps. The Integrated Psychological Therapy (IPT) model, developed at the University of Bern by Brenner, Hodel and their colleagues (Brenner *et al.* 1992) comprises five subcomponents arranged hierarchically so that simple cognitive processes are addressed first, followed by increasingly complex tasks: cognitive differentiation, social perception, verbal communication, social skills and problem-solving. The training is delivered in a group format of 60–75-min sessions, delivered daily over approximately 3 months. Patients without impairments in a particular area are encouraged to help those who have them on the grounds that this will help to generalize skills and increase self-esteem. Cognitive remediation is theoretically achieved through the repeated practice of the training exercises although is not directly addressed in the sort of detail described in the more ideographical approaches described earlier. Two of the subcomponents – social skills and problem solving – bear a close resemblance to social skills training programmes.

Controlled studies have shown IPT to be superior to standard hospital treatment (Brenner *et al.* 1992) and to a non-specific group treatment (Spaulding *et al.* 1999). Spaulding *et al.* randomly allocated 90 long-term inpatients from a state hospital with treatment-resistant schizophrenia to receive either IPT or supportive group therapy. Cohorts received their respective treatments for 1 h, three times weekly over a 6-month period. At 3 months, a 12-week course of social skills training was introduced to both groups. All patients also received the same structured psychosocial inpatient programme comprising close attention to optimizing medication, milieu-based behavioural treatment (token economy), patient and family psychoeducation and occupational therapy.

Subjects in both groups showed significant improvements in several measures of neurocognition, positive symptoms and social skills, but those in the IPT group showed greater improvements in conceptual disorganization, attentional processing, knowledge and skills concerning medication management and social competence as measured by the Assessment of Interpersonal Problem-Solving Skills Task (Donahoe *et al.* 1991). Greatest gains were seen in terms of the patients' ability to apprehend details of social situations, to incorporate these details into a more complete understanding of the situation and to match solutions to this situation. The IPT treatment effect on these measures was nearly double that of the standard inpatient rehabilitation programme. In terms of outcome, the effect of adding IPT to a comprehensive rehabilitation programme was comparable in size to the superiority of clozapine over typical antipsychotics in reducing symptoms of treatment refractory schizophrenia. The effect size of IPT also compared favourably with family interventions in the area of expressed emotion and emotional overinvolvement, and with social skills training

on social competence, hospital discharge and relapse rate (Spaulding *et al.* 1999).

A similar retraining programme has been described by Van der Gaag *et al.* (1992, 1994, in press) in the Netherlands. Three main training strategies were used: self-instruction, mnemonics and inductive reasoning. The programme was compared with an attention–placebo intervention over a 22-week study period. Patients in the experimental condition attended short 15–25 min training sessions twice weekly over a 3-month period. The first 12 sessions included visual, auditory, tactile and proprioceptive perception tasks; sessions 13–15 focused on integrating perceptual and language processing; and sessions 16–22 dealt with more complex exercises of social perception. At the end of training, the experimental group had improved performance on measures of social perception and memory, but was no better on measures of attention or problem solving.

Heinssen & Victor (1994) also developed a treatment modality to increase patients' vocational functioning through cognitive remediation. In this procedure, graduated steps working towards a final task were developed in order to ensure success while enhancing the cognitive processes that would facilitate appropriate task behaviour. For example, to teach participants how to water plants, an explanation of the task and the skills sequence to be followed was given. Next, a sorting task was implemented, where patients sorted plants into wet and dry categories. This type of gradual progression continued until the patients were watering the plants effectively on their own. Environmental manipulations were also used to decrease distractions and compensate for impaired memory and executive functioning. This type of training was effective in improving job interest, work activity and the accuracy of behavioural performance (Heinssen & Victor 1994).

Despite the focal success of these interventions and the clear demonstrations that it is possible to 'train the brain' (Lieberman

2002), more research must be done to provide satisfactory understanding of exactly what is being measured by neuropsychological tests of cognitive impairment in schizophrenia and, hence, how cognitive remediation may contribute to real-life benefits for persons with schizophrenia (Hayes & McGrath 2000). Some steps in this direction are being taken by Kern and Liberman at the UCLA Clinical Research Center for Schizophrenia and Psychiatric Rehabilitation, where errorless learning methods, utilizing functions in the parietal association cortex that are not impaired in schizophrenia, have been shown to improve performance on entry-level job tasks that were validated by employers, work foremen and vocational counsellors (Lieberman 2002).

Goal-orientated therapeutic contracting

This pragmatic approach, initially developed and validated for persons with schizophrenia by Liberman and colleagues at the Oxnard (California) Community Mental Health Center, engages patients in an active process of setting realistic goals that are incremental steps toward their long-term 'dreams' in life (Austin *et al.* 1976; Liberman & Bryan 1977). For example, a man may express the wish for having a girlfriend with whom to share emotional and sexual intimacy. To achieve this goal, many intervening steps are necessary, each with reinforcers associated with their attainment. The step-wise progression to a long-term goal is depicted in Table 32.2 for this individual. The reinforcers associated with the attainment of each behavioural goal often combine tangible social and intrapersonal rewards. For example, after successfully meeting a young woman on a scenic hike and getting a date with her, the consequences were praise from his therapist and a gift certificate for a department store from his mother so he could purchase new clothes and shoes. By the time the individual achieves his or her long-term goal, the frequency

Table 32.2 An example of one patient's step-wise programme in his goal-orientated therapeutic contract aimed at achieving the long-term goal to meet a girlfriend. For each step along the continuum, the patient and clinician negotiate a 'contract' which specifies the goal and the consequences of achieving that goal. Reinforcement Surveys (Lecomte *et al.* 2000) can be used to help identify relevant rewards to be used as consequences and the emphasis is on abundant 'pay offs' for achieving goals so that motivation can be maximized.

-
- Go to shopping mall and make three different enquiries regarding merchandise with female sales clerks who are your age and attractive. Smile, make eye contact, ask the sales clerk to show you the merchandise so you can examine it close-up, then thank the clerk for her time and effort.
 - At a local coffee shop, ask the woman at the counter how she likes her job, what she enjoys most and least about the work, and thank her for the coffee.
 - Go to the city's Park and Recreation Department and obtain information on the various social and recreational activities that are sponsored.
 - Participate and complete the Recreation for Leisure Module in the UCLA Social and Independent Living Skills Programme (including generalization assignments).
 - Participate and complete the Basic Conversation Skills Module (including generalization or 'homework' assignments).
 - Attend your local hiking club meeting and introduce yourself to three women and three men.
 - Participate in a hike and find out three pieces of information about four of the hikers, disclosing similar information about yourself at low levels of self-disclosure.
 - Participate and complete the Friendship and Intimacy Module.
 - Invite one of the women on the hike to have coffee with you after the hike.
 - Ask the woman out for a date.
-

of tangible and social reinforcers are faded and replaced by natural reinforcers (e.g. enjoying a heterosocial and heterosexual relationship), self-efficacy and enhanced self-esteem.

Therapeutic contracting explicitly removes patients from a passive role in treatment as they work collaboratively with therapists and natural supporters (e.g. family members) to achieve goal-directed autonomous behaviour. In this modality, patients progress sequentially through more complex stages after meeting criteria for successfully achieving prior less complex stages. Each stage entails specific responsibilities from both patient and clinician. The four stages, as outlined by Heinssen and colleagues, are as follows:

- 1 *Problem definition*, during which a model of illness and recovery is established, presenting problems are clarified and treatment priorities are defined.
- 2 *Reframing presenting problems*, when adaptive self-concepts are established through reformulating problems as long-term goals to be accomplished.
- 3 *Behavioural experimentation*, during which optimal learning conditions are established to avoid overstimulation and boredom, the performance of adaptive skills is encouraged daily, and the patient's feelings of self-control and personal efficacy are established.
- 4 *Sustaining long-term growth*, when the self-control, self-evaluative and self-corrective skills that have been learned are internalized.

Therapeutic contracting has been found to be effective in a wide range of areas, including increased treatment compliance, positive therapeutic outcomes, patient satisfaction and cost-effectiveness of long-term treatment. These results have also been shown to be generalizable, as they have been replicated in public and private psychiatric hospitals and in an outpatient facility (Heinssen *et al.* 1995). Therapeutic contracting can be implemented during inpatient hospitalization and used as a bridge to outpatient services to further treatment gains and facilitate continuity of care.

Modifying environments

Specific interventions employed in rehabilitation, besides enhancing skills, aim to help people manage the demands of everyday life by modifying the environment and providing supports that can make tangible contributions to greater personal satisfaction and acceptance by the community.

Vocational rehabilitation

Employment is central to human health, providing financial, social and psychological benefits to people with mental health problems: an income without depending on social service benefit, social contacts, a social role other than that of psychiatric patient, psychological recovery and even prolonged symptom remission and freedom from relapses (Lieberman & Kopelowicz 1994; Lysaker & Bell 1995; Bell *et al.* 1996). Many persons with schizophrenia want jobs, alternatives to welfare dependency

and traditional day centres (Shepherd *et al.* 1994). The right to work is enshrined in the Universal Declaration of Human Rights (1948) and the United Nations Standard Rules (1994). Employment is a core component of social policy across Europe and America, where governments want to improve health and to reduce welfare spending and social exclusion.

Most people with severe mental illness now live in the community but few have jobs and many are socially isolated. Unemployment rates for people with serious mental health problems range from 60 to nearly 100% and are particularly high if they have additional disadvantages in the labour market: ethnic minority group membership, poor educational and employment history or a criminal record (Lehman 1995; Meltzer *et al.* 1995). These high unemployment rates are as much a product of social factors – the economy, discrimination, organizational policies and welfare regulations – as of the personal consequences of mental illness (Warner 1994). Most employers and employees are not yet ready to work alongside mentally ill people, and modern organizations may be technologically demanding and stressful, and themselves a cause of ill health. Coping strategies that may be helpful in some circumstances can be problematic in the workplace. For example, a person may find that taking frequent breaks from a task helps to reduce the intensity of anxiety or psychotic symptoms but such practices may not be acceptable to an employer (Cook & Razzano 2000). To compound these difficulties, mental health professionals may ignore or even discourage employment. One recent American survey of 719 people diagnosed with schizophrenia found that only one-quarter were receiving vocational rehabilitation or had such services included in their treatment plan (Lehman & Steinwachs 1998).

The presence of acute symptoms, neurocognitive dysfunctions, medication side-effects, residual negative symptoms, poor social skills and instrumental role deficits can all disrupt employability or job performance (Johnstone *et al.* 1990; Massel *et al.* 1990; Fenton & McGlashan 1991; Van Os *et al.* 1995; Green 1996). All these factors need to be taken into account in helping people back to work. On the other hand, when there is a good match or fit between a person and his or her job, engagement in tasks that can be mastered can both displace symptoms and facilitate job tenure (Massel *et al.* 1990; Wallace *et al.* 1999).

Prediction of successful vocational rehabilitation is difficult because employment depends on the local labour market, the national economy and welfare system as well as on personal resources and choices (Anthony 1994). Assessment is best carried out in work settings, rather than with interviews or tests. Successful job searching or placement may involve helping the person develop coping strategies or seek an 'ecological niche' – a job where the employer and coworkers collaborate with the rehabilitation team to adjust the demands of the job to better fit the person's abilities and tolerance (Jacobs *et al.* 1984; Drake *et al.* 1999; Tsang & Pearson 2001).

There has been burgeoning interest in helping people with severe mental illness obtain meaningful employment and a corresponding proliferation of approaches. Most approaches aim to enable people to work productively for wages within social

security or welfare regulations. The earliest models in the post-asylum era involved the transfer of the hospital farm, workshop or work crew into community-based sheltered workshops or enclaves that provided part-time, low or unpaid occupation in segregated settings. The rationale of these early models was to give patients experience in 'work hardening' so as to prepare them to enter competitive employment in the open labour market, although their success in achieving this goal was severely limited (Baronet & Gerber 1998). Sheltered employment has fallen out of favour, partly because of its poor performance in achieving open employment, and partly because the segregation involved in this approach encourages dependence and institutionalization. In Europe, the sheltered workshop evolved into small businesses or 'social firms' that operate as commercial businesses in the open market, although they receive some governmental subsidy. These social firms sell quality products and provide equal and full pay to both disabled and non-disabled employees. Some firms have attained commercial viability, high user satisfaction and reduced use of mental health services (Grove *et al.* 1997). Similar operations appear as consumer-run businesses in the USA (Schwartz 1998).

Another internationally popular model has been the 'Clubhouse', which emerged in the USA in the 1950s as an alternative to the traditional sheltered workshop. The Clubhouse provides a setting for friendships, support, social activity and lengthy preparation for employment. Members participate in all aspects of running the organization and are expected to arrive on time, complete tasks and share responsibility for all aspects of Clubhouse life. This phase leads to 'transitional employment' in which members are placed in a series of paid but temporary jobs with mainstream employers, a process that is intended to help the members acquire the skills and experience needed to cope with open employment (Beard *et al.* 1982). The Clubhouse model has been criticized on the grounds that such prevocational training undermines confidence and may actually deter people from finding competitive employment; that it has not proven effective in helping members develop work skills; and that it limits patients to unskilled employment (Bond *et al.* 1997). The Clubhouse model is slowly being overtaken in the USA by behaviourally orientated strategies of vocational rehabilitation: supported employment and job-finding training.

Supported employment

Following its extraordinary success in securing normal employment for the developmentally disabled, supported employment has become the most important new development in the vocational rehabilitation of the severely mentally ill (Anthony & Blanch 1987). Although the implementation of supported work programmes may vary, several common components have been identified (Bond *et al.* 1997):

- 1 a goal of permanent, competitive employment;
- 2 minimal screening for employability;
- 3 avoidance of prevocational training;

4 individualized placement (rather than in an enclave or work crew);

5 time-unlimited support by an employment specialist or job coach and liaison between the vocational staff member and other clinicians on the patient's mental health team; and

6 consideration of patient preferences for type of job.

Supportive employment uses a 'place-then-train' approach, instead of the traditional 'train-then-place' method that had failed to obtain competitive employment for the vast majority of the seriously mentally ill in the era of the sheltered workshop (Bond 1992). Rather than spending lengthy periods in preparatory prevocational settings, participants are matched with existing jobs in the local community and are provided with on-the-job training in work skills, instruction in work habits and supportive counselling by a job coach whose goal is to sustain the productive involvement of the mentally ill person at the work site.

Much emphasis is placed on helping the individual maintain the job. When the programme participant must acquire a new work or social skill, the job coach or employment specialist provides assistance, usually through verbal instruction, encouragement, liaison with the individual's supervisor or employer and real-time demonstrations. The behavioural requirements of any job are broken down by a 'task analysis' into small chunks, which are then taught to the participant, moving at the participant's own rate of learning. Because a key element in supported employment is integration of the job coach with the mental health team responsible for the patient's comprehensive and continuing care, specialized services are always available to sustain the individual on the job. These may include attendance at social skills training sessions (Mueser & Liberman 1988), medication regulated by a psychiatrist, or crisis intervention at or away from the job site. Thus, co-ordination of a wide array of mental health services, as well as consultation and liaison with the employer or supervisor at the worksite, are essential components in the performance standards for job coaches and employment specialists (Drake & Becker 1996).

Most studies of supported employment have found superior vocational outcomes as compared with more traditional mental health treatment or conventional vocational counselling (Mueser & Bond 2000). An 'accelerated' approach, defined as immediate placement in competitive employment, as opposed to a gradual approach, which included a minimum of 4 months of prevocational training before placement, was more effective in terms of employment outcomes in a sample of 86 patients with severe mental illness (Bond *et al.* 1995). In a review of the literature, Bond *et al.* (1997) found that people in the supported work programmes had a higher rate of obtaining competitive employment. Drake *et al.* (1994) also found that supportive employment that was closely co-ordinated with clinical care increased the rate of competitive employment. In three recent controlled studies (Bond *et al.* 1995; Drake *et al.* 1996, 1999), an average of 65% of severely mentally ill subjects who received supported employment obtained competitive employment, compared with 26% of subjects in the control conditions (Bustillo *et al.* 2001).

Positive findings in other areas of outcome have also been reported for supported employment: lower hospital admissions, better medication compliance, less abuse of alcohol, better familial role performance, higher self-esteem and more social activity (Kuldau & Dirks 1977; Bond & Dincin 1986; Bond 1992). Research on supported employment raises a number of questions that require further study, including how to increase the retention rate of patients in these programmes, how to effectively place and maintain employment for those with skills beyond entry-level, the extent of support needed, and what patient characteristics are most suited to success in these programmes.

An element that would likely buttress supported employment but is rarely used is the addition of social skills training. Social skills training could equip the mentally ill person with the conversational and problem-solving skills to meet the interpersonal expectations and demands of the work culture and setting (Mueser & Liberman 1988). Mentally ill individuals often find the person-person interactions in the work setting (e.g. conversation with coworkers during breaks, asking a supervisor for assistance on a task) more stressful than the actual job tasks; thus, skills training *in vivo* might protect schizophrenic individuals from stress-induced relapse. Necessary skills and social supports are developed for the individual, in consultation with the employer, to assist the mentally ill individual to meet the specific requirements of the work environment.

In one programme that integrated skills training with supported employment in Hong Kong, a succession of social skills were taught, including basic conversational skills, general skills for succeeding on the job (e.g. maintaining a good relationship with a supervisor) and specific skills for dealing with one's job (e.g. receptionist would learn how to field enquiries from visitors and on the phone). A controlled study of the programme discovered 47% of those who received skills training and follow-up support were employed at 3 months after training ended. This contrasted with 23% employed of those who received skills training alone and nil employed who were in the control group (Tsang & Pearson 2001).

A user-friendly manualized Workplace Fundamentals Module has been designed and tested for use in concert with supported employment. The module contains a trainer's manual, participant's workbook, demonstration video and user's guide. It is readily implemented in a wide variety of supported or transitional employment programmes and has been shown to result in improved vocational outcomes for those learning the skills in the context of supported employment (Wallace *et al.* 1999). Multisite controlled studies are underway in the USA to evaluate the degree to which the Workplace Fundamentals Module can increase tenure on the job for mentally ill individuals who obtain employment, but so often fail to maintain their jobs beyond 6 months.

Job-finding clubs

Because some patients prefer to find their own jobs without the intercession of an employment specialist or job developer, some

supported work programmes utilize skills training, job-finding clubs and/or career planning before actual job placement. Patients may need training in job-finding skills, which can be conducted in club-like settings (Azrin & Besalel 1979; Azrin & Philip 1979; Jacobs *et al.* 1984). Basic skills taught during job-finding seminars include identifying job leads, writing résumés, filling out job applications, rehearsing interviewing skills and using public transportation. Patients who demonstrate mastery of these skills are encouraged to look for work. During the job-seeking phase, the club offers resources to support the arduous search, e.g. counsellors, buddy-system of mutual aid, newspapers, phones and maps.

Research on job-finding clubs has shown them to be an effective means of helping patients obtain employment. Controlled studies have found employment rates of 42–90% for participants in job-finding clubs, compared with 10–33% employment outcome for individuals participating in control programmes (Keith *et al.* 1977; Azrin & Philip 1979; Eisenberg & Cole 1986). In another evaluative study of the job club, 66% of the participants found work or were enrolled full-time in job training programmes, requiring on average 22 days of participation in the club. Six-month follow-up data revealed that 68% of those employed were still working (Jacobs *et al.* 1984). More recent evaluations of the job club programme have found lower employment rates, with individuals suffering from schizophrenia or bipolar disorder doing more poorly than those with anxiety or substance abuse disorders. Thus, the job-finding club may be utilitarian for only a subset of persons with schizophrenia. Interestingly, while fewer persons with schizophrenia were successful in obtaining employment, of those who succeeded, the job-retention rates were as high as for individuals from other diagnostic categories (Jacobs *et al.* 1990).

Supported housing

Affordable, accessible and acceptable housing is a cornerstone of modern rehabilitation services. We are rapidly moving from an era in which the mental hospital provided all the necessities of daily living on one site, to one in which a spectrum of provisions are aimed at enabling as many individuals as possible to live in ordinary housing, albeit with support. The first step along this road was the development of transitional housing, from the 24-h highly staffed residential care or board and care home (Goldberg *et al.* 1985), through staffed group homes, to progressively less intensively supervised, more normalized community settings.

This spectrum of housing alternatives was particularly influential during hospital closures. One study of the fate of persons living in a spectrum of community-based housing was the longitudinal follow-up of patients discharged from Friern Barnet hospital in North London (O'Driscoll *et al.* 1993; Leff *et al.* 1994, 1996). This research was unique in its coverage of a large population of ex-asylum patients using a prospective design and including an economic analysis (Knapp *et al.* 1990). Nearly 80% of all long-stay patients were discharged to staffed accommoda-

tions in the community where the majority continued to reside over a 5-year follow-up period. Of the 671 patients discharged to community homes, 126 died in the subsequent 5 years – a death rate that, although higher than the general population, was comparable to other samples of severely mentally ill people. Only nine patients could not be traced at follow-up, of which only three were known to have become homeless. Just over one-third of patients were readmitted to hospitals during the follow-up, the majority having relatively brief admissions (Leff *et al.* 1994, 1996).

The community homes were much less restrictive than the hospital wards and provided a comfortable atmosphere, which was favoured by patients. Patients made more friends, a majority of whom were ordinary members of the community. While individual patients showed large fluctuations in symptoms, there was no overall change in psychiatric state for the sample as a whole during the follow-up period. Problems with social behaviour also remained stable (Anderson *et al.* 1993; Leff *et al.* 1994, 1996). A comprehensive analysis of health and social care costs suggested that once the relatively high costs of caring for the difficult-to-place patients was taken into account, there was little difference between hospital and community care. Indeed, considering the improved outcomes suggested that community-based care was more cost-effective than the hospital (Knapp *et al.* 1990).

While similar findings for these 'trans-institutional' residential models have been reported from several countries (Goldberg *et al.* 1985; Gibbons & Butler 1987; Okin & Pearsall 1993; Farragher *et al.* 1996; Donnelly *et al.* 1997), the approach has not been without its critics. The best programmes have worked hard to enable consumer choice, easy access and unhampered movement between levels of care. However, all too many schemes have been run with convenience for agencies and staff rather than consumer choice in mind; imposed unrealistic targets for residents to 'move on'; and generally forced residents to meet service needs rather than providing care tailored to the waxing and waning needs of the residents (Hogan & Carling 1992; Carling 1995).

In the face of such criticism, there has been the emergence of supported housing models which rely less on having a range of facilities into which to 'slot' patients, and more on a partnership between the providers of ordinary housing and mental health services, the latter providing a range of flexible mobile case management, consultation, training and treatment services which enable patients to manage in housing of their choice (Carling 1993; Ogilvie 1997). This approach is often preferred by patients and their care-providers (Carling 1993; Hatfield 1993) and may be associated with improved quality of life and reduced time in hospital.

There have been several large-scale evaluations of supported housing in the USA. The Programme of Chronic Mental Illness, sponsored by the Robert Wood Johnson Foundation and the US Department of Housing and Urban Development, for example, brought together housing and health authorities in nine cities to target services for severely mentally ill people. This comprehen-

sive system of support and housing subsidy had a beneficial impact on the quality of life of many people, although the results varied from city to city and there was little effect on clinical outcomes (Goldman *et al.* 1994; Lehman *et al.* 1994). In a study of 74 mentally ill persons living in community integrated residences, the level of their satisfaction with their housing arrangements – with flexible amounts of staff support and supervision – was as high as individuals living independently. Moreover, residents' hospital use decreased from a mean of 47.7 days during the year before programme placement to 5.3 days during their first year in the programme (Hanrahan *et al.* 2001).

More recently, the US Department of Health and Human Services and the Department of Housing and Urban Development funded experimental programmes targeted at the homeless mentally ill, placing many in appropriate community-based housing and demonstrating reductions in symptoms, reduced hospitalization and some improvement of social functioning and quality of life (Dickey *et al.* 1996; Shern *et al.* 1997). Tsemberis and Eisenberg (2000) examined the effectiveness of the Pathways to Housing programme in New York City over a 5-year period. The programme, which provided immediate access to independent apartments for homeless mentally ill individuals and provided support services in the context of a modified assertive community treatment model, was compared with a more traditional linear residential treatment approach. After 5 years, 88% of the programme's tenants remained housed, compared with only 47% of the patients in the traditional treatment system. These studies demonstrated that even patients with severe psychiatric disabilities and addictions are capable of maintaining independent housing when provided with the necessary supportive services.

Compensating for deficits: cognitive adaptive therapy

There is mounting evidence that neurocognitive impairments are central to the difficulties in instrumental and role functioning often experienced by persons with schizophrenia (Green 1996; Velligan *et al.* 1997) and that cognitive deficits may serve as 'rate-limiting factors' in the ability of individuals with this disorder to benefit from psychosocial rehabilitation (Green 1993). Despite the improvements in neurocognition that may be conferred by treatment with atypical antipsychotic medications (Meltzer 1992; Green *et al.* 1997; Velligan *et al.* 1999), significant deficits remain. Velligan and colleagues at the University of Texas have developed and tested a strategy called *cognitive adaptation training*, which involves environmental modifications in patients' homes to compensate for their residual cognitive impairments and improve their daily functioning. The compensatory strategies include the use of signs, labels and electronic devices designed to cue and sequence appropriate behaviours. Four types of assessments are conducted prior to implementing cognitive adaptation training:

- 1 behavioural assessment of apathy and disinhibition;
- 2 neurocognitive assessment of executive functioning, attention and memory;

3 functional needs assessment in activities of daily living; and
 4 environmental assessment in the home to identify triggers of maladaptive behaviour, safety hazards and availability of needed equipment.

Apathetic behaviours can be altered by providing prompting and cueing that help the patient initiate each step in a sequenced task. Checklists may be used for complex tasks, signs and labels may be placed in front of the patient along with needed equipment, or electronic devices such as tape recorders may provide cues and instructions. For disinhibited behaviour, distracting stimuli and triggers are removed, patients are redirected and supplies are organized. Patients with impairment in executive functioning are provided with a greater amount of structure and more obvious environmental cues. Interventions are altered as necessary during weekly visits to the home by cognitive adaptation training therapists.

In a randomized, controlled study (Velligan *et al.* 2000), 45 outpatients with schizophrenia or schizoaffective disorder were randomly assigned to 9 months of either:

- 1 standard medication treatment;
- 2 standard medication plus cognitive adaptation training; or
- 3 standard medication plus a condition designed to control for therapist time and environmental changes unrelated to cognitive deficits.

Significant differences were found between the groups in levels of psychotic symptoms, motivation, and global functioning at the end of the 9-month period. Relapse rates were also significantly lower in the cognitive adaptation training group (13% vs. 33% for the medication only group and 69% for the control condition). The results of this study are encouraging, demonstrating that compensatory strategies may improve outcomes for persons with schizophrenia. Additional research will be needed to explore whether such strategies are as effective as other available treatments, and the added benefits that may accrue from combining compensatory strategies with other treatments (e.g. assertive community treatment).

Family psychoeducation

Because the family is typically an important part of the patient's natural support system and living environment, improving family attitudes, knowledge and coping skills regarding mental illness can result in better opportunities, encouragement and reinforcement for the generalization of social and independent living skills. Family interventions have been shown to have significant benefits for both patient outcome and family adjustment. On average, relapse rates among patients with schizophrenia with family therapy are 24% vs. 64% for those receiving standard care (Bustillo *et al.* 2001).

In psychoeducational programmes, relatives are engaged as essential allies in treatment and rehabilitation. The psychoeducational model has five major aims:

- 1 to develop collegial relationships among the treatment team, family members, and other support persons;
- 2 to educate the family about the patient's particular mental

disorder, and to direct them to locally available treatment and rehabilitation resources;

3 to strengthen treatment alliances by acknowledging the efforts and basic good intentions of family members;

4 to develop step-by-step communication and problem-solving skills; and

5 to develop a network of like-thinking people to serve as support persons and provide resources.

A typical psychoeducational session begins with information about the nature of schizophrenia and the medication and psychosocial interventions available for its treatment. Topics include positive and negative symptoms, effects of psychotropic medications and treatment options in psychiatric rehabilitation. Material is presented didactically, followed by guided discussion. Patients and relatives alike are considered the 'experts' at these meetings and are invited to discuss various points about symptoms and treatments in terms of their own experiences. To varying degrees, education programmes are enhanced with basic skills training of the patients and relatives in interpersonal communication, problem-solving and contingency management. One approach that emphasizes these traditional cognitive-behavioural techniques is called *behavioural family management* (Falloon *et al.* 1985).

Several well-controlled studies (Goldstein *et al.* 1978; Falloon *et al.* 1982, 1985; Hogarty & Anderson 1986; Tarrier *et al.* 1988) have shown that the rate of relapse and subsequent hospitalization for patients whose families participate in psychoeducation and skills training is significantly less than for customary treatments. While it is clear that patients benefit from having their families involved in treatment, the mechanisms of the treatment effects are unknown and the critical components of the various approaches have not been identified. Acquiring communication and problem-solving skills have been shown to be important, but affective and socioecological factors may also be crucial. For example, family members are typically distressed by the patient's bizarre or asocial behaviour, anxious about increased financial burden for the patient's treatment, uncertain about future plans and isolated from their own social supports as a result of caregiving responsibilities, stigma and embarrassment (Creer & Wing 1974). In some families, these stressors produce high levels of expressed emotion (criticism, disappointment, hostility and overprotectiveness).

Patients who return to families with high expressed emotion are more likely to relapse than those whose families are low in expressed emotion (Brown *et al.* 1972; Vaughn & Leff 1976; Vaughn *et al.* 1982; Leff & Vaughn 1985). Changes in expressed emotion may thus be part of the beneficial effect of family education and treatment. One outcome study that showed better social and independent functioning and improved quality of life for patients in the family treatment group also showed lower expressed emotion and emotional burden in the family members (Falloon *et al.* 1985). These effects have also been found to be maintained in the majority of patients and their families for as long as 8 years (Tarrier *et al.* 1994). Similar relationships between the emotional climate of group homes and the clinical

outcomes of patients residing there have also been demonstrated (Snyder *et al.* 1994).

Conclusions

While the arrival of a new generation of antipsychotic medications during the past decade has captivated practitioners and consumers alike, actual advances in the treatment and rehabilitation of persons with schizophrenia have been more substantial in the arena of psychosocial services (Geddes & Carney 2001; Wallace *et al.* 2001b; Kopelowicz *et al.* in press). A number of recent innovations can be expected to improve the prospects for psychiatric rehabilitation:

- 1 Illness self-management techniques, such as those found in the UCLA social and independent living skills programme, which will permit patients to assume more responsibility for monitoring their symptoms and seek early and flexible levels of intervention.
- 2 Functional assessment that is more individualized and better linked to prescriptions for rehabilitation.
- 3 The integration of social learning and assertive community treatment techniques and procedures, so that cognitive-behaviour therapy can be used to teach patients how to adapt to community living.
- 4 Continued investigation in the cognitive sciences to further inform professionals on how to compensate for or overcome cognitive impairments.
- 5 Family involvement in treatment and rehabilitation, as well as in advocacy for the needed services and research; and the provision of services by professionals, including education, skills training and social support, to family caregivers.

There continues to be a great discrepancy between what is known from research and demonstration studies about effective psychosocial treatments and rehabilitation, and what is actually implemented at the clinical level. This discrepancy between available technology and common practice prevents thousands of persons with schizophrenia from achieving more optimal states of functioning. A number of obstacles are often encountered when attempting to develop and implement a rehabilitation programme, especially in treatment settings where 'traditional' treatment has long been the norm (e.g. state hospitals). Financial concerns and reluctance of administrative and direct care staff are only some of the barriers that need to be overcome if a sound and effective programme is to be put into place (Stuve & Menditto 1999). This is also true regarding outpatient treatment, which also must address the complications of integrating treatment from a variety of care providers in different settings and from different disciplines, including psychiatric, case management and vocational services (Monroe-DeVita & Mohatt 1999). Effective data-collection and management systems must be developed and utilized to track the progress of patients and to facilitate well-informed treatment decisions (Buican *et al.* 1999).

Administrative, financial, organizational and systems' obsta-

cles confound the best efforts of practitioners and researchers to apply state-of-the-art treatments. In addition, reliance on publications and conferences to disseminate innovations can never succeed in producing knowledge and technology transfer from research into practice. Much more active brokering models of dissemination must be used to overcome the professional inertia in systems of mental health care (Backer *et al.* 1986).

The following caveats can help to bridge the gap between research and practice:

- 1 Increase the number of accessible services through active outreach and mobile case management services.
- 2 Provide continuous and indefinite treatment and rehabilitation in the context of reliable and mutually respectful therapeutic relationships.
- 3 Engage the patient's and family's self-help and active participation in rehabilitation.
- 4 Assist the patient and caregivers in the achieving the delicate balance between risk-taking and protective measures to reduce stress-related relapses.
- 5 Galvanize administrative and programme support for comprehensive and co-ordinated services.

Bringing innovative techniques and approaches into the realistic arena of clinical practice will maximize recovery and rehabilitation for persons with schizophrenia. With this in mind, there needs to be greater insistence by consumer advocacy groups (e.g. the National Alliance for the Mentally Ill) and policymakers that health care providers deliver the more proven or evidence-based psychosocial interventions and that the training of professionals and their licensure and certification include the skills to deliver these treatments. Consumers and their families can help by insisting that practitioners and agency administrators provide flexible, individually tailored care and demanding access to information about the empirical basis for the care they receive.

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