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Recovery from Schizophrenia

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Learning Objective

Clinicians will come to understand that with a multi-dimensional approach to the treatment of schizophrenia that aims to not only relieve symptoms, but also bring about improvement in a wide range of psychosocial domains, the outcome for many schizophrenic patients can be far better than often assumed, and some patients will achieve functional recovery.

Editor's Note

Some years ago, we presented a lesson in *Directions in Psychiatry* prepared by Manfred Bleuler; he pointed out that a significant number of schizophrenic patients recover and do well, in spite of medical prejudice to the contrary. In this lesson, Drs. Kopelowicz and Liberman emphasize that a systematic, multifaceted treatment approach to patients with this illness can produce surprisingly good results. When the disorder is treated early with effective antipsychotics, when families and other caregivers are involved as partners in the treatment effort, and when later stages of the illness are managed for long periods of time with comprehensive, well-coordinated, and continuous biobehavioral efforts, much can be done.

The authors define recovery as consisting of much more than the alleviation of symptoms; in fact, a number of patients may continue to have positive symptoms in an ameliorated form, with which they have developed constructive coping strategies. Vocational functioning, independent living, and social relationships are no less important to the eventual outcome. The 10 elements which they cite as essential for recovery and discuss in further detail include (1) a supportive family educated in the nature of the illness, (2) the absence of substance abuse, (3) brief duration of illness, (4) good initial response to antipsychotic drugs, especially the newer ones, (5) adherence to medication and psychosocial treatment, (6) a collaborative therapeutic alliance, (7) near normal neurocognitive functioning, (8) lack of negative symptoms, (9) good premorbid social adjustment and high intelligence, and (10) access to comprehensive, coordinated, and continuous treatment. When one or more of these factors is missing, there are a number of steps, such as cognitive restructuring and social skills training, that can be implemented.

In this lesson we will refer to the individual with schizophrenia as the patient. The term "consumer" is often used by individuals with mental disorders who wish to emphasize their active and equal role in the treatment enterprise; "patient" is usually reserved for individuals seen in conventional medical settings such as hospital inpatient units or traditional clinics linked to hospitals. Since much of the modern treatment and rehabilitation of schizophrenia takes place outside of these conventional medical-psychiatric settings, the terminology correspondingly has "labored" and become somewhat convoluted. We choose to use the term patient here as it is the standard for *Directions in Psychiatry*; it is not intended to reflect on the status of the individual being treated for schizophrenia.

Introduction

At the turn of the 20th century, schizophrenia was conceptualized as a chronic, inexorably deteriorating disorder with little chance for symptomatic or functional recovery. Kraepelin[1] described the course of schizophrenia (which he called dementia praecox) as being invariably a downhill process, inevitably leading to mental deterioration, lack of volition, and social incompetence. In his memoirs, Kraepelin[2] asserted that while symptoms of schizophrenia could vary over time, the disease "always caused a destruction of the intellectual character."[(p.61)] Even though Kraepelin himself reported that approximately 4% of his patients with schizophrenia recovered completely and another 13% had long-standing remissions, and more recent longitudinal studies have shown that the majority of patients with reliably diagnosed schizophrenia do not deteriorate intellectually, contemporary psychiatrists too often assume that recovery from this illness must indict the validity of the original diagnosis. For example, the DSM-IV[3] cautions of "the unlikeliness of afflicted individuals ever making a complete return to full functioning."[(p.282)] With such pessimism entrenched in the nosology of schizophrenia, it is not surprising that many clinicians, patients, and families readily resign themselves to the notion that individuals diagnosed with schizophrenia are doomed to a life of disability spent under custodial care.

This fatalistic view of schizophrenia has practical consequences; for example, the illness is severely stigmatized, which leads patients to deny their illness and avoid effective biobehavioral treatments. **Even more tragically, psychiatrists and other practitioners have failed to grasp one of the most basic therapeutic principles in all of medicine; namely, that timely, competently delivered, evidence-based treatments can change the trajectory of an illness or its prognosis. There is nothing inevitable in the course of schizophrenia any more than there is in coronary artery disease, renal failure, or leukemia; *if* appropriately individualized, long-term, and judicious types and amounts of biobehavioral treatment are provided, patients may recover from schizophrenia.**[4] The misguided view that the disease is prepotent over therapeutic endeavors has generated cynicism among practitioners. All too often, practitioners have invested inadequate time and effort in the very treatment enterprises that could, if utilized, reverse these iatrogenic attitudes. As a result of the downplaying of the value of multidimensional treatment and rehabilitation, patients with schizophrenia often receive the lowest common denominator of services; for example, a superficial and hurried 5- or 15-minute medication review session every 1 to 2 months.

There is a growing body of empirically-based, clinical research showing that the rates of recovery from schizophrenia can be multiplied many-fold over traditional estimates if the following four conditions are met: (1) the disorder is treated early in its course with assertive outreach; (2) flexible levels of patient-oriented case management are employed; (3) families and other natural supporters and caregivers are involved as partners in the treatment process; and (4) when later stages of more chronic, relapsing or refractory forms of the illness are actively treated for lengthy periods with comprehensive, well-coordinated, and continuous biobehavioral treatments that are keyed to the phase of illness.

An essential first step in stimulating research and treatment efforts aimed at increasing the rate and prevalence of recovery is to operationally define recovery. We offer one such operational set of criteria in later in this lesson; our **criteria are multifaceted and**

include outcome domains such as sustained remission of positive and negative psychotic symptoms; independent living, work, or study; social and family relationships; and recreational activities. Further, in this lesson we will present patient experiences that are important milestones on the road to recovery. These **milestones may be services; emotionally imbued attitudes or mental states such as empowerment, hope, or realistic optimism; comprehensive and continuous treatment; the utilization of evidence-based practices; and the patient's active involvement in treatment planning and implementation.** These positive experiences and outcome domains will be important treatment goals for clinicians seeking to improve the rates of recovery among their patients and will guide the clinician to appropriate methods of treatment and rehabilitation for enhancing recovery. These experiences will also lend motivational force to a patient's participation in treatment. The specific criteria used for defining desired outcome domains in symptomatic and functional terms will enable physicians, patients, and family members to know when recovery—or its approximation—has been attained. Thus, certain experiences that patients have en route to reaching remission of psychosis and independent living can be viewed as marking their progress toward recovery.

Our aim in this lesson is to specify ways that clinicians can increase the likelihood of recovery. We will review the literature associated with the pathways to recovery and outline the factors which may promote recovery in people with schizophrenia—both early and later in the course of illness. The study of recovery is in its infancy, but already progress has been made that can be applied by clinicians and incorporated into systems of care.

Table 1

EVIDENCE-BASED RATIONALE FOR CONSIDERING RECOVERY FROM SCHIZOPHRENIA A WORTHWHILE AND COST-EFFECTIVE GOAL OF RESEARCH AND CLINICAL WORK

- Antipsychotic drug treatment, case management, and supportive therapies have brought about almost complete remissions of positive and negative symptoms in 80% or more of patients in their first or second episode of schizophrenia.
- Long-term, catamnestic follow-up studies of people with severe forms of schizophrenia earlier in their lives have shown that approximately 60% of them have recovered and are living full and satisfying lives.
- Adding family intervention to antipsychotic drug therapy can reduce relapse rates in schizophrenia by half or more.
- Adding structured methods for building skills, through social competence training, has been shown to improve social functioning and autonomy of the patient
- The advent of clozapine and the newer atypical antipsychotics means that, cumulatively, more individuals with schizophrenia are now able to respond therapeutically to treatment.

Why Pursue Recovery as a Therapeutic Goal?

Table 1 lists some of the evidence-based reasons which indicate that recovery is a legitimate goal for the schizophrenic patient and that the time is right for further investigations and clinical forays examining the topic of recovery from schizophrenia.

OBJECTIONS:

One might question the advisability of promoting recovery as a legitimate goal for the psychiatric treatment and rehabilitation of people with schizophrenia. Conservative voices will raise the concern that, given the many obstacles to recovery (shown in Table 2) heightened expectations run the risk of making patients and family members feel demoralized or guilty if they do not achieve recovery. As in any field of medicine, however, physicians and other members of the treatment team can offer appropriate cautions and qualifications to reduce or obviate disappointment. For example, patients can be educated about the favorable and unfavorable prognostic factors for recovery; they must understand that everyone does not have equal potential for recovery. Practitioners also can point out that patients do not fail, only treatments fail; thus, future research and development leading to new and better treatments may lead more patients to recovery. This has been amply demonstrated with the

Table 2
OBSTACLES TO RECOVERY FROM SCHIZOPHRENIA

- Some forms of schizophrenia are notoriously refractory to treatment (the deficit syndrome)
- Medications have unpleasant side effects, which lead to noncompliance.
- Psychosocial treatments are complex and difficult to learn.
- Comprehensive services are rarely available in most public service sectors.
- Coordinating continuous and individualized services takes substantial time that most psychiatrists do not have, nor are they paid for their efforts in the current managed care era
- Substances of abuse are ubiquitous and cannot be controlled by mental health professionals
- Neurocognitive deficits may limit the number of patients who are ready for rehabilitation
- Competence in the use of evidence-based treatments—such as social-skills training, supported employment, and behavioral family management—are not taught in professional training programs for mental health professionals.

introduction of clozapine. In addition, underscoring the importance of continuous participation in comprehensive treatment and rehabilitation services as a prerequisite to recovery can serve to motivate many patients to adhere to their treatment regimens and, with their families and organizations such as NAMI, advocate for evidence-based services when none exist in their communities.

Another objection to holding out recovery as a feasible goal may be the belief that clinicians would be unfairly burdened by the requirements for obtaining the many competencies needed for promoting recovery from schizophrenia and by the often insurmountable difficulties in organizing and coordinating the full range of treatments necessary. We would answer "doubting Thomases" by pointing out that similar concerns have not held back progress in other fields of medicine. Although the majority of cancer patients were not able to attain recovery or sustained remission, this did not block the active development and utilization of improved methods of early detection and intervention, or the retraining of medical practitioners in their proper use. Similarly, practitioners have been prompted to obtain continuing medical education to acquire the competencies required to implement therapeutic advances in the prevention of disability from heart attacks and strokes. The challenges to the practitioner did not stop hospitals and emergency rooms from expecting clinicians to gain those competencies. If mental health practitioners want parity with their colleagues in other fields of medicine, then they should accept the challenge to learn how to deliver empirically-validated treatments; and administrators, policymakers, and other stakeholders should expect them to meet those challenges.

BENEFITS:

Recognizing the broad range of courses and outcomes possible for individuals with schizophrenia has a number of clinical implications and may increase chances for recovery. First, acknowledging recovery as a valid goal will allow and encourage clinicians to employ strategies towards achieving recovery. **Treatment teams would be expected to develop comprehensive treatment plans that do not just aim for symptom amelioration, but also focus on overall improvement in quality of life and level of functioning. Similarly, psychiatrists could expand on their usual practice of inquiring solely about symptoms during brief "medication checks" (e.g., asking, "Are you hearing voices?"). Psychiatrists can encourage and reinforce behaviors in which patients participate in their own psychosocial treatments, self-manage medication and relapse prevention, and take a more active role in social, work, and family life.**[5]

Second, pursuing recovery as a valid clinical objective will create spin-off benefits for the treatment process itself. **When engaged in an active, collaborative endeavor with their practitioner, patients and their relatives are more likely to feel empowered and able to contribute to overcoming obstacles to positive outcomes.** A key thread woven through our lesson is the importance of involving patients and family members in treatment and rehabilitation; we believe that this involvement insufflates much-needed hope, responsibility, and mutual contributions to strengthen the therapeutic alliance. A true partnership

can indeed make a positive difference in the course and outcome of the disorder.

A third reason to promote recovery as the therapeutic goal is to inform patients, their families, treatment providers, third-party payers, and society at large that the diagnosis of schizophrenia is not a death sentence. Unfortunately, the academic approach to understanding schizophrenia is often limited to studying pathology and deducing from it what should be done clinically. Ken Steele, who recovered from schizophrenia after being introduced to an atypical antipsychotic drug, illustrates the role of hope as an experiential milestone on the pathway to recovery in his book *The Day the Voices Stopped.* He wrote:[6]

> *At the beginning of the 21st century, I have a vision that mentally ill people will have the science, the organized voting strength, and the means to leave our ghettos of isolation behind us. We will finally join with the mainstream community where we'll be able to live as independent individuals and not as a group of people who are known and feared by the names of our illnesses.*

A research focus on wellness and schizophrenia would serve a scientific purpose and perform a public service for patients and families suffering from the stigmatizing effects of a frequently misunderstood disorder.

BENEFITS OF RESEARCHING THE RECOVERY PROCESS:

Recently, the National Institute of Mental Health (NIMH) noted that "establishing a research agenda that is responsive to the needs and priorities of key stakeholders is likely to increase the usefulness of research results."[7] A survey of 140 patients in a New York Psychiatric Clinic revealed that they were keenly concerned and supportive of research that would validate new drugs and methods of rehabilitation that could influence their well-being.[8] If recovery is accepted as a goal for the schizophrenic patient, research aimed at validating new drugs and methods of rehabilitation that could influence the recovery process should naturally follow. **Research will improve chances for more complete rehabilitation both through the application of new and more effective treatment methods and by serving as evidence for hope of recovery.**

First, for example, **psychiatrists can learn from patients what it is they do to help themselves.** These "wellness factors" could include coping strategies for dealing with symptoms, the network of social support a patient mobilizes when in crisis, hopeful attitudes related to spiritual values and religion, and the therapeutic alliance the patient develops with practitioners to maximize the effectiveness of the clinical endeavor. Identifying these *wellness factors* could help us understand why some people are able to overcome the ravages of the illness and put their lives back together, while others are less fortunate. One unpublished study of 696 individuals who remained employed for two years, despite suffering from severe and persistent mental disorders, discovered that **learning coping skills such as avoiding or reducing stress, enlisting support persons, attending regular treatment, and using medication faithfully contributed to patients good work adjustments.**

A related benefit of studying the recovery process is the identification of personal factors that pertain to recovery; that is, characteristics inherent in the person with schizophrenia that make him or her more likely to achieve and sustain recovery. For example, **it has been known for more than 50 years that good premorbid social adjustment predicts better outcome in schizophrenia. However, few clinicians have capitalized on this firm base of knowledge and crafted methods of social skills training that will bolster the postmorbid social functioning of people with schizophrenia,** and thereby improve their quality of life and long-term chances of recovery.

Toward a Definition of Recovery from Schizophrenia

If treated properly, it appears that many persons with schizophrenia are capable of achieving symptomatic remission and high levels of social functioning. Why, then, has it been so difficult to circulate this information throughout the research and clinical world? One contributing factor relates to the emphasis on the pres-

ence or absence of positive psychotic symptoms as the most important determinant of outcome. **Operationalizing outcome as the presence or absence of positive symptoms, rather than as the attainment of an improved level of functioning in a wide range of psychosocial domains, does not provide a complete representation of a person's outcome. Positive symptoms experienced during a given follow-up period may be brief, lasting days or weeks, and may have a minimal impact on social or occupational functioning.** Strauss and Carpenter[9] and Harding and colleagues[10,11] demonstrated the partial independence of symptomatology, social functioning, and occupational or educational functioning. In fact, **Harding and her colleagues described many subjects who functioned well in society despite the presence of persisting symptoms.** These individuals were able to use *coping skills that minimized the impact of their symptoms on functioning.* Other individuals described displacement of persisting symptoms by engaging in vocational, social or recreational activities, a finding now validated by research.[12]

Another important consideration when formulating a concept of recovery relates to the differences that researchers, clinicians, and patients of mental health services may have in defining the term "recovery." Researchers often define recovery as an extended period of remission from psychotic symptoms. Clinicians may define recovery as an improvement in social functioning. Patients often define recovery as "the ability to rejoin the mainstream and function again," and focus on a number of important process variables such as "empowerment," "hope," and "participation," which may mediate successful outcome. Patients may also emphasize that recovery is not complete unless it occurs in the absence of psychotropic medication. **Continuing maintenance medication, however, is frequently an invaluable component to sustaining high functioning among people diagnosed with schizophrenia.**

Just as when patients are viewed as having recovered from a somatic disease, **biobehavioral maintenance treatment is likely to be an important process variable in recovery from schizophrenia.** *Precedents for this abound in other fields of medicine. For example, patients with coronary artery disease are often classified as recovered after a heart attack, even though they must continue to use coronary vasodilators and anticholesterol medications, rely on bypass and stent surgery, and sustain involvement in behaviors that promote a healthy lifestyle, such as dietary restrictions and salutary exercise.* Individuals with diabetes are viewed as having recovered if their blood glucose is kept under control with insulin or hypoglycemic agents, diet, and stress management. **In these conditions, the return to normal levels of psychosocial functioning is as important as remission of symptoms in the definition of recovery.** The same is true for schizophrenia; **a comprehensive, structured definition of recovery will include acceptable levels of social and occupational functioning, possession and use of independent living skills, and remission or minimally impairing levels of all psychiatric symptoms.** Moreover, as Frank and colleagues[13] noted, the use of maintenance medication should be compatible with the construct of recovery.

We suggest the operational definition of recovery delineated in Table 3. These criteria for recovery have been validated by ratings made by clinicians, family members, and patients. The outcome domains were selected because they represent the areas of functioning in which individuals with schizophrenia have demonstrated significant impairments and because they comprise what most people would endorse as a life within the broad range of normalcy.

The criteria we developed pertain to the most recent two years of an individual's life and involve: (1) sustained remission of psychotic symptoms as measured by the *Brief Psychiatric Rating Scale* (BPRS),[14] defined as a score of 3 (mild) **or less** (on a seven point scale) **on key psychotic symptoms of grandiosity, suspiciousness, unusual thought content, hallucinations, conceptual disorganization, bizarre behavior, self-neglect, blunted affect, and emotional withdrawal; (2) full- or part-time engagement in an instrumental role activity** (i.e., worker, student, volunteer) that is constructive and appropriate for age; **(3) living independently of supervision by family or other caregivers** such that the individual is responsible for their day-to-day needs (e.g., self-administration of medication, money man-

agement); and (4) **participating in an active friendship and/or peer social network**, or otherwise involved in social activities that are age-appropriate. The following case vignette highlights the salient aspects of our operational definition of recovery.

Case Vignette

Stuart is a single, 35-year-old man who has had well-documented paranoid schizophrenia since age 17, when he began to hear derogatory voices and experience persecutory delusions. He has achieved excellent remission of his psychotic symptoms, except for several intervals in which he discontinued his medication and relapsed. With ongoing treatment by a psychiatrist, with whom he enjoyed an excellent collaborative relationship, Stuart completed college and graduate school and has been continuously employed full time in a white-collar profession. He lives alone, supports himself, manages his own medication and continuing psychiatric treatment, and has a steady girlfriend whom he sees four times a week. While he had friends for many years, his success in developing heterosexual intimacy came after he participated in two skills-training modules designed by Liberman and his colleagues: *Basic Conversation Skills and Friendship & Intimacy.*[15] He visits his parents once or twice a year because they live more than 2,000 miles away, and he has occasional

Table 3

OPERATIONAL DEFINITION OF RECOVERY FROM SCHIZOPHRENIA

Symptom Remission
Score of 3 (Mild) or less on the positive and negative symptom items of the *Brief Psychiatric Rating Scale*[14] for two consecutive years. A 3 or less indicates that the individual did not have any clinically significant psychotic symptoms because none of the beliefs were delusional and the negative behaviors were not disruptive or impairing; furthermore, none of the "symptoms" required therapeutic intervention.

Vocational Functioning
Successful employment at least half-time in a job in the competitive sector or successful attendance in a school for at least half-time for two consecutive years. Half-time means 20 hours per week for work and school activities (including attending classes and homework. If in the retirement age (e.g., more than 60 years of age), participating actively in recreational, family, or volunteer activities. The individual may be receiving disability benefits as long as he or she participates constructively in instrumental activities (housekeeping, shopping, preparing meals, etc.). for half-time or more.

Independent Living
Living on one's own without day-to-day supervision for money management, shopping, food preparation, laundry, personal hygiene, or need for structured recreational or avocational activities. Able to initiate one's own activities and schedule time without reminders from family or other caregivers. While most individuals will be living on their own or with a roommate, intimate, or friend, some patients could meet this criterion if they are living at home with family if that is considered culturally and age-appropriate.

Peer Relationships
At least once per week having a meeting, social event, meal, recreational activity, phone conversation, or other joint interaction with a peer outside of the family.

Family Relations
Cordial contacts with at least some family members, even in the absence of face-to-face contact. This could include an exchange of Christmas cards, acknowledging birthdays and anniversaries, and occasional letters, e-mail, or telephone contacts.

phone and e-mail contacts with his sister, his only sibling. Since switching from haloperidol and benztropine (Cogentin) to risperidone (Risperdal), he has experienced additional benefits in normalized neurocognitive functioning, with improved memory, concentration, initiative, and energy.

What is the Evidence for Recovery from Schizophrenia?

Several clinical research centers have reported a high rate of symptomatic remission in recent-onset cases in which assertive, targeted treatment was provided. For example, researchers at Hillside Hospital–Long Island Jewish Medical Center enrolled patients experiencing their first schizophrenic episode into an open, standardized treatment algorithm that involved *titration of antipsychotic medication to optimal doses and changing medications, if necessary, to achieve symptom control.* Using a stringent definition of remission, similar to the criterion for symptom remission given in our operational criteria for recovery, 74% of the patients were considered to be fully remitted within one year.[16] In a subsequent paper from the same research group,[17] the authors concluded that "*most patients recover from their first episode of schizophrenia and achieve full symptom remission.*"[p 375] However, a much smaller proportion of the recent onset patients from Hillside Hospital met all of our more comprehensive criteria for recovery given in Table 3.

At the Early Psychosis Prevention & Intervention Center in Melbourne, Australia, 91% of young people with recent onset of psychosis were in relatively complete remission of positive and negative symptoms after one year of *assertive case management, antipsychotic drugs, and cognitive-behavioral therapy.*[18,19] Additional studies lend support to these findings: at UCLA, 80% of individuals with recent-onset schizophrenia had clinical remission of positive and negative symptoms after one year of treatment;[20] in Nova Scotia, 89% of individuals experiencing their first episode of schizophrenia survived the first year without rehospitalization. Of the patients involved in these studies, more than half were involved in full- or part-time work or education, thereby fitting closely with the operational definition of recovery provided in this lesson.[21] ***Most importantly, subsequent rediagnosis of the individuals from these studies revealed that over 95% continued to meet lifetime DSM-IV criteria for schizophrenia or schizoaffective disorder, thus contradicting the view that remitted individuals had been misdiagnosed originally.***[22]

At the other end of the acute–chronic spectrum of schizophrenia, investigators from Europe, the United States, and Asia have reported on **long-term follow-up studies that have documented the malleability of chronic schizophrenia to comprehensive and well-orchestrated intervention and rehabilitation programs.**[10,11,23-26] Each of these international studies followed cohorts of people with schizophrenia for at least 20 years and found *rates of social restoration of at least 50%.*[27] In the most rigorous of these studies, the Vermont Longitudinal Research Project,[10] **the highest social recovery rate** (68%) **was found in a sample that contained the greatest proportion of chronic, "backward" patients among the long-term studies. Careful interviews revealed that more than two-thirds of the subjects in this sample had *no* psychotic symptoms 20–30 years after their periods of prolonged hospitalization.** It should be pointed out that a key **element in these favorable long-term outcomes was access to continuous and reasonably comprehensive mental health services. Studies of older persons with schizophrenia**[28] **have demonstrated that the social and symptomatic recovery of patients is not a consequence of an aging or "burning-out" process; other controlled studies have shown the necessity of well-coordinated care to achieve positive outcomes.**[29-31]

Factors in Recovery

Based on published studies, we have identified 10 factors that may be associated with symptomatic, social, and educational or occupational recovery:

1 Having a supportive family with realistic expectations for improvement and

abundant reinforcement for incremental progress

2 No substance abuse

3 Brief duration of untreated psychosis (DUP)

4 Good initial response of symptoms to antipsychotic drugs

5 Adherence to medication and psychosocial treatment

6 A collaborative therapeutic alliance with clinicians

7 Near-normal neurocognitive functioning

8 Absence of negative symptoms or the deficit syndrome

9 Good premorbid social adjustment and high intelligence

10 Access to comprehensive, coordinated, and continuous treatment.

By pinpointing these factors and crafting treatment and rehabilitation strategies to target them, clinicians should be able to increase the number of patients who can achieve recovery, as we will discuss in the upcoming sections. In order to avoid misunderstanding and pay homage to the extraordinary heterogeneity and challenging nature of schizophrenia, we emphasize that recovery, as we have defined it, will not be achieved by all patients with schizophrenia. In fact, **given the best circumstances and assets at the personal, therapeutic, and environmental levels, we believe that not more that 50% of individuals with schizophrenia will be able to meet our criteria for recovery, given our present knowledge base. On the other hand, we firmly believe that making use of the principles related to recovery can enable almost every person with schizophrenia to enjoy measurable improvement in their clinical status.**

FAMILY FACTORS:

Although there are no studies that have directly tested the hypothesis that having a supportive family is important for attaining recovery, two lines of research indirectly support this theory. First, many international studies have replicated the findings that **family stress—as reflected in high expressed emotion, attitudes of criticism, and emotional over-involvement toward the mentally ill relative—is the most powerful predictor of *relapse* in schizophrenia and mood disorders.**[32,33] Second, in the past decade, more than two dozen well-controlled studies from several countries have demonstrated that **family psychoeducation and training in coping and problem-solving skills decreased the rate of relapse and subsequent hospitalization for patients who's families participated.**[34] Moreover, patients who participated in these types of family interventions gained significantly more in social adjustment while requiring less overall antipsychotic medication. Together, these findings suggest that having a supportive family with realistic expectations for improvement may be a critical factor in the long-term outcome of individuals with schizophrenia.[35]

Case Vignette

This anecdote illustrates the importance of the enduring, educated, and supportive family in the process of recovery for a young adult who had seen his parents as adversaries. The parents were not properly educated by the psychiatrist and questioned whether their son had an illness or was willfully and perversely "giving up" on life. The patient stated:

> *About four weeks after my parents started their attendance in the Family-to-Family educational program, sponsored by the local chapter of NAMI, I suffered a decompensation that landed me in the hospital again. I shall never forget my mother's demeanor when she came to visit me. There was a clarity and strength in her presence that I had never before experienced. I found strength and hope in her calmness as we faced my crisis. She was very clear in her understanding that we had a*

common enemy in the disease itself. How liberating it was to hear her words, "You are not to blame for this."

While psychiatrists and other members of the mental health team should be capable of translating their knowledge of schizophrenia into laymen's language and capacity for understanding, **there are distinct advantages for families and patients who participate in educational programs that are based on peer teaching.** The National Alliance for the Mentally Ill (NAMI), an organization of 220,000 members with affiliates throughout the USA, has had enormous success in reaching out to relatives and patients with its Family-to-Family and Peer-to-Peer curricula which are aimed at demystifying schizophrenia and other disabling mental disorders. A secondary goal of these programs is to **provide conceptual mastery and coping skills for family members and patients who often feel buffeted by the unpredictable and stigmatizing nature of schizophrenia.** Psychiatrists can obtain information about the Family-to-Family and Peer-to-Peer programs, as well as a list of local affiliates of the National Alliance for the Mentally Ill by contacting this organization's HELP line at 1-800-950-NAMI or by visiting their website, www.nami.org, or sending an e-mail to kathryn@nami.org. The address of the headquarters for the National Alliance for the Mentally Ill is Colonial Place Three, 2107 Wilson Blvd., Suite 300, Arlington, VA 22201-3042.

SUBSTANCE ABUSE:

The serious, clinical consequences that drug-using schizophrenic patients face warrant special attention. An NIMH epidemiological study estimated **the prevalence of lifetime drug abuse among schizophrenic patients at approximately** 47%, which is well above the rate for the general population.[36] **Patients who use drugs or alcohol have been found to be more symptomatic while hospitalized, relapse more frequently, have poorer psychosocial functioning, and have poorer prognoses for recovery.**[37-40] They engage in higher rates of violence and suicide, are less likely to have their basic needs of housing and nutrition met, and are less likely to comply with treatment.[41-43]

The treatment of dually-diagnosed patients has evolved tremendously over the past two decades and there are several practical implications of this new growth in knowledge for clinicians. First, clinicians must be aware of the high prevalence of substance abuse disorders in patients with schizophrenia and recognize the adverse consequences that may result from even small amounts of substance use. Second, **clinicians need to strive to provide *integrated mental health and substance use disorder treatment* to individuals who are dually diagnosed.** At the most basic level, integrated treatment means that the clinician or treatment team treats both disorders simultaneously, with an eye toward addressing the possible interactions between disorders. **An integrated approach to the treatment of dual diagnosis has been demonstrated to be superior to either sequential treatment** (i.e., treating the substance abuse problem before treating schizophrenic symptoms, or vice versa) **and parallel treatment** (i.e., different clinicians working on each part of the problem separately).[43] Because of the clinical challenges posed by patients with comorbid substance abuse and schizophrenia, clinicians may find the *Substance Abuse Management Module* helpful in treating this population (this can be obtained from Psychiatric Rehabilitation Consultants, go to www.psychrehab.com for more information). Additional information on successful, integrated dual diagnosis treatment programs is described in the literature.[44,45,46]

DURATION OF UNTREATED PSYCHOSIS:

Longer duration of untreated psychosis (DUP), **usually defined as the number of weeks from the onset of psychotic symptoms until first hospitalization or initial neuroleptic treatment, has been shown to be a predictor of poorer outcomes.**[16,47-50] For example, a longer DUP was significantly associated with greater time to remission, as well as a lesser degree of remission.[16] **Longer duration of illness that included prodromal symptoms was also associated with longer time to remission.** A review of the literature concluded that among a list of pretreatment history variables, DUP was found ro be the best predictor of symptomatic and functional recovery in the studies of recent-onset schizophrenia.[51]

It may, however, be difficult to prove a causal relationship between longer DUP and poorer outcome or, conversely, shorter DUP and better outcome.[52] *Patients who seek treatment soon after the onset of psychosis might have more firmly established social support networks that encourage early treatment.*[53] Similarly, *shorter DUP might be related to higher levels of premorbid functioning, higher socioeconomic status, higher intelligence, or greater access to health service resources.* **Nevertheless, because psychosis may be associated with deleterious changes in the brain,[17,51] early intervention in treating psychosis may be especially important for a favorable prognosis.**[54] Several studies underway in Australia, Scandinavia, and in the Unites States (New Haven, CT) are testing the hypothesis that intervening during the prodromal phase of the disorder, before a possible first episode of schizophrenia, may prevent the manifestation of frank psychosis.[55,56] Even if early intervention was unable to forestall the ultimate appearance of schizophrenic psychopathology, it may attenuate the deterioration in social, vocational, and academic functioning experienced by young people going through their first episode.

GOOD INITIAL RESPONSE TO MEDICATION:

A number of studies have found that improvement of symptoms within several days after receiving antipsychotics significantly predicts outcome after several weeks or months; conversely, initial subjective dysphoric response augured poor short- and long-term outcome.[57,58] A more rapid clinical response or favorable subjective response to antipsychotic medication may mediate positive attitudes toward medication and greater compliance with the medication regimen. These factors are very likely to indicate whether the patient is receiving an optimal type of medication.[59] Clinicians can inquire of their patients regarding their subjective response even within the first few days and have a "barometer" to decide whether to continue with, or adjust the dose and/or type of medication.

ADHERENCE TO TREATMENT:

The evidence for the efficacy of antipsychotic medication in the treatment of schizophrenia has been recognized for many years,[60] yet failure to comply with medication regimens remains a significant problem for many individuals with the disorder.[61] Clearly, **failure to take antipsychotic medication as prescribed hampers both short- and long-term stabilization in areas such as psychopathology, rehospitalization rates, interpersonal relationships, illicit drug and alcohol use, frequency of violent and otherwise criminal activities, and overall quality of life.**[62] Conversely, the consistent administration of antipsychotic medications—*titrated judiciously to doses designed to maximize efficacy while minimizing side effects*—is a prerequisite to achieving optimal social and community functioning.[16]

A variety of obstacles to regular use of medication must be overcome to allow the benefits of treatment to emerge. These barriers can be found in the patient, the treatment, the therapeutic relationship, and the system for delivering mental health services.[63] An example of a patient barrier is **poor illness management skills.** Training in such skills has been shown to improve adherence to medication treatment[64] as well as to increase attendance at aftercare appointments.[65] In terms of treatment, the newer antipsychotic medications such as clozapine (Clozaril), risperidone (Risperdal), olanzapine (Zyprexa), quetiapine (Seroquel), and ziprasidone (Geodon) offer a number of advantages over the older, conventional agents. For instance, **as a class, the newer medications have a much better side-effect profile, which leads to higher rates of treatment adherence.**[66]

There are several strategies that practicing psychiatrists can use to improve treatment adherence; for example, simplifying the medication regimen to a once daily dosing of antipsychotic medications is easier to remember and, given the long half lives of most of these drugs, usually yields stable plasma levels over a 24 hour period. The psychiatrist can assist the patient and caregivers in the residential environment to place medication bottles in locales where the patient is likely to see them on a regular basis—by the toothbrush, alarm clock, or salt shaker instead of behind closed doors or drawers. Also, reviewing a *Self-Assessment Rating Sheet,* part of the *Medication Management Module,*[67] with the patient at each appointment or visit can encourage and

reinforce patient adherence to the regimen while also engendering therapeutic collaboration.

SUPPORTIVE THERAPY WITH A COLLABORATIVE THERAPEUTIC ALLIANCE:

Studies that have examined the role of psychotherapy in the lives of people with schizophrenia have found the relationship with the therapist to be essential to improvement.[68-70] **Supportive therapy is considered a necessary foundation for therapeutic change and for delivering all types of treatments.[4,71] Such therapy should emphasize (1) developing a positive, therapeutic alliance and relationship; (2) solving problems in everyday life; (3) an active, directive role by the therapist, who uses his or her own life experiences and self-disclosure as role models for the patient; and (4) encouragement and education of the patient and family for proper use of antipsychotic medication and psychosocial treatment.**

A fruitful collaboration requires that both professionals and patients recognize each other's agenda and seek common ground in developing a comprehensive treatment plan. Helping the patient to define a treatment plan can be a vehicle for engaging and motivating participation in the lengthy process of rehabilitation and recovery. **Patients who actively participate in setting goals are more likely to acknowledge their ownership of goals, seek reinforcement from significant others when they work toward their goals, and customize or modify their goals as they proceed toward recovery.**

NEUROCOGNITIVE FACTORS IN THE PREDICTION OF RECOVERY:

Neurocognitive functioning at the initiation of treatment has been found to be a predictor of functional and psychosocial outcome in schizophrenia. ***Secondary verbal memory*** **and** ***executive functions*****, such as concept formation, working memory, problem-solving, and flexibility in thinking appear to be particularly strong predictors of community functioning.[72] Patients with good vocational performance did better than those with poor vocational performance on the *Wisconsin Card Sorting Task*, a test of executive functioning, and on several measures of secondary verbal memory.[73]**

A growing number of studies suggest that specific cognitive remediation strategies can have normalizing effects on neurocognitive performance.[74] For instance, six months of *Integrated Psychological Therapy* improved executive functioning and verbal memory, which led to better social competence and skill acquisition.[75] This multifaceted treatment approach begins by teaching patients how to accurately differentiate stimulus objects, social perception, and facial emotions; continues with training in verbal communication and social skills; and ends with a short course on interpersonal problem-solving. It can be used with inpatients or outpatients and requires two or three sessions per week for a minimum of three months.

Also, a number of the newer antipsychotic medications have been shown to have a salutary effect on cognitive functioning, whereas conventional antipsychotic agents do not have a substantial impact.[76] For example, **a double-blind study that compared treatment with risperidone to treatment with haloperidol found that subjects randomized to risperidone improved their performance on verbal learning and memory tasks to within one standard deviation of published norms, while subjects on haloperidol showed no change from baseline.[77]** Although more research is needed, it appears that focusing empirically validated biobehavioral treatments on neurocognitive variables may translate to functional gains that improve the likelihood of recovery from schizophrenia.

PRESENCE OF NEGATIVE SYMPTOMS IN THE PREDICTION OF RECOVERY:

A consistent conclusion of review articles has been that negative symptoms and the the deficit syndrome were associated with poor outcome, cognitive impairments, and functional incapacity in social and work domains.[78] Empirically, levels of negative symptoms have been correlated with the degree of disability in social and vocational role functioning in recent-onset schizophrenia[79,80] and chronic schizophrenia.[81,82]

While no medication or psychosocial treatments have been documented as effective in overcoming

the primary, enduring negative symptoms that define the deficit syndrome,[83] intensive psychosocial treatments and newer antipsychotic medications can have durable and substantial effects on secondary negative symptoms. For example, both social-skills training[84] and multiple-family group therapy[85] have been found to ameliorate negative symptoms such as affective flattening and asociality. Among the newer antipsychotic medications, risperidone, olanzapine, and clozapine have been shown to provide clear advantages when compared with haloperidol in terms of reducing a broad range of negative symptoms.[86]

Additionally, prompting approaches and "wrap around" services such as those provided by the ***Program for Assertive Community Treatment*** teams,[87] can compensate for more refractory negative symptoms, including anergia and amotivation. Interventions that compensate for the patient's lack of initiative include e-mail prompts, cue cards mounted on the refrigerator with magnets, homework assignment notes, telephone messages, beeper reminders, and labels on closets and cupboards. Assertive community-based case managers or personal service aides who provide outreach services to isolated and withdrawn patients have also been found to be helpful in substituting for the patients' cognitive and behavioral deficits, accompanying them to their appointments, checking on their proper use of medications, and reminding them to clean their apartments and eat nutritiously.[87]

PREMORBID HISTORY IN THE PREDICTION OF RECOVERY:

Extensive evidence from long-term follow-up research supports the notion that **deterioration in schizophrenia occurs within the first few months and years of onset, followed by a plateau in functioning, which then may or may not be followed by gradual improvement later in the course of the disorder.**[88] It is difficult to say what percentage of patients will make a full recovery; it appears that wide heterogeneity of outcome predominates, and good outcome, defined as mild impairment to recovery, can range from 21% to 68% in various samples of patients followed-up after 15–30 years. There is a consensus, however, from many reviews of long-term follow-up studies of schizophrenia that premorbid attributes of individuals presage good outcome. **The predictors of good outcome include female gender, later age of onset of the disorder, rapid as opposed to insidious onset of the disorder, and higher premorbid levels of social and vocational adjustment.**

It is not known to what extent continuous, comprehensive treatment and rehabilitation can compensate for these premorbid patient characteristics. However, social-skills training has been shown to raise the level of postmorbid social competence demonstrated by individuals with schizophrenia.[84] For example, a skills trainer can teach patients how to express negative feelings. After watching a videotaped demonstration of appropriate expression, a skills trainer will point out the salient features of the modeled behavior and list the key skills on a chart for easy reference. This can help to compensate for the deficits in neurocognitive functioning that often accompany a poor premorbid history. The skills trainer can then build on the foundation formed during the first learning activity by having the participant practice the new skills in a role playing exercise. The skills trainer gives positive reinforcement for successful performance of the skill and corrective feedback for aspects of the task that require additional practice. **Social-skills training can improve rudimentary behaviors, such as basic conversational skills, and help patients learn the more complex tasks associated with recovery from schizophrenia, including illness self-management, job acquisition and retention, and friendship, dating, and intimacy skills.**[89]

A step-by-step program for teaching social and independent living skills was designed by Liberman and colleagues at UCLA, these skill modules include *Medication Management, Recreation for Leisure, Symptom Management, Workplace Fundamentals Skills, Basic Conversational Skills, Social Problem-Solving, Community Re-entry, Street Smarts, Grooming and Self-Care,* and *Friendship and Intimacy.* Together the modules form a comprehensive rehabilitation program, but

they can also be used selectively to fit the specific needs, interests, and resources of any program. Visit www.psychrehab.com for more information.

ACCESS TO CONTINUOUS, COMPREHENSIVE, AND COORDINATED TREATMENT:

Successful treatment requires a system that is continuous, 24 hours a day, 7 days a week; comprehensive, meeting needs in domains such as housing, work, social contacts, and financial benefits; and coordinated, with a coherent treatment plan that organizes the delivery of services to the patient from a variety of mental health practitioners including nurses, psychiatrists, psychologists, and social workers. The importance of continuous, comprehensive, and coordinated treatment to good outcome in chronic schizophrenia was shown in a long-term follow-up study comparing a sample of well-diagnosed patients with schizophrenia from Vermont with a similar cohort in Maine. Vermont established a well-crafted system of accessible treatment that was flexibly linked to the needs of its chronic patients early in the 1960s; Maine did not. Cohorts of chronic schizophrenic patients were matched for age, education, sociodemographic factors, duration, and severity of illness during their early periods of treatment in the Vermont and Maine State Hospitals. It was found that the rate of recovery, as defined by remission of psychotic symptoms and a score of 70 or above on the Global Assessment Scale, occurred twice as frequently in Vermont as in Maine.[30,31]

Complementing the findings from the Vermont sample, two reviews of schizophrenia treatment have identified studies in which zero relapses and better rates of social functioning were obtained when comprehensive, continuous, and well-coordinated services were accessible and utilized by patients with carefully diagnosed schizophrenia.[90,91] **One such study, conducted by Hogarty and colleagues,[92] randomly assigned individuals with schizophrenia to one of four groups: (1) adequate antipsychotic medication; (2) medication plus social-skills training; (3) medication and family psychoeducation; or (4) medication, social-skills training, and family psychoeducation. Relapse rates in the first year for the first three groups were 40%, 21%, and 19%, respectively. Interestingly, not one subject in the group that received all three treatments experienced a relapse during the first year of treatment.**[92] Not surprisingly, as the psychosocial treatments for the fourth group were phased out during the second year, relapse rates began to approximate the rates achieved by subjects in the first three groups.[93] Both of these studies indicate that a comprehensive, biopsychosocial approach to mental health treatment; including a number of psychiatric rehabilitation techniques, such as training in social and independent living skills, supported education and employment, and assertive community treatment, can amplify the impact of medication in fostering symptomatic and social recovery from schizophrenia.

Case Vignette

> **After experiencing a fifth relapse of his psychotic symptoms, 25-year-old Bernard was unable to continue working. His relapse had been occasioned by a work stressor—injuring his back while lifting heavy weights—not by medication noncompliance. During this time Bernard believed that television commentators were sending messages directly to him and that people were conspiring against him when he left his home. Ultimately, his relapse progressed to the point where he became incoherent, reclusive, and unable to face his parents, with whom he lived.**

The first step in Bernard's pathway to recovery was containment and control of his psychosis, which was achieved in a collaborative manner by Bernard, his psychiatrist, and his parents. They participated together in the *Medication Management Module*,[15] and developed a keen appreciation, as well as a high level of knowledge and skill regarding the therapeutic and maintenance value of antipsychotic medication. As time went on, and as recommended in the module, Bernard was given more and more responsibility in

managing and supervising his own use of medication. Unfortunately, neither conventional nor several newer antipsychotic drugs fully controlled Bernard's psychotic symptoms. Monitoring the severity and scope of his psychosis using the *Expanded BPRS*, Bernard's psychiatrist noted that clozapine gradually succeeded in bringing the paranoia and thought disorder into remission. With the aid of the *Symptom Management Module*,[15] **Bernard and his parents worked with the psychiatrist on developing a relapse prevention plan in which Bernard's early warning signs of psychotic decompensation** (e.g., racing thoughts, insomnia, and ideas of reference) **were identified and then monitored by Bernard, his psychiatrist, and his parents.**

Moving from the acute and stabilizing phases of his illness to the stable phase, Bernard was ready to extend his social contacts, but needed skill building and extra confidence. He participated in the *Basic Conversation Skills Module*[15] as led by his case manager, and then chose to learn additional skills in the *Recreation for Leisure*[15] module. **These building blocks were generalized into Bernard's everyday life by in vivo homework assignments that he completed each week.** For example, in building confidence for initiating conversations with young women, he made repeated visits to a shopping mall and practiced talking with young, female store clerks. In practicing his recreation skills, he went to the local recreation and parks office obtained a map of the bike trails at the local park from the parks office and used it to guide his weekly three-mile sojourns.

After six months of stability, Bernard was ready to enter the recovery phase. He initiated this phase by participating in the *Workplace Fundamentals Module*[94] and in a supported employment program, *Individual Placement & Support*.[95] Because Bernard had always enjoyed driving his pick-up truck and had previous work experience in a gas station and tire repair shop, he chose to enroll in a truck driver's school to obtain a special license to drive tractor trailers. In 1998 there was a severe shortage of such drivers and Bernard rapidly obtained employment as a long-distance trucker. He remained in contact with his psychiatrist by phone to report on his medication side effects and warning signs of relapse.

At one point, Bernard began to experience palpitations from clozapine. These were controlled by a prescription of propranolol (Inderal), an antihypertensive medication. Another time, after a near accident on the road, Bernard developed stress-related ideas of reference and insomnia. He reported these to his psychiatrist, who worked with him to reduce his stress through relaxation instructions and time-limited use of a benzodiazepine, clonazepam (Klonopin).

Now, five years after his last psychotic episode, Bernard continues to work—not as a long distance trucker, but as a truck driver on local routes, which gives him more time for leisure and more regular sleep. He used his savings from his income to make a down payment on a condominium where he now lives, visiting his parents weekly or biweekly to maintain the mutual supportiveness that they all cherish. He has had several girlfriends and sexual liaisons, which have motivated him to begin the *Friendship & Intimacy Module*[96] with the goal of developing a more enduring and reciprocal relationship with a woman. He goes out several times a week with acquaintances from work, but also enjoys his privacy and time spent alone in his home, watching TV and exercising. His visits to his psychiatrist have been reduced to once every three to six months, but he knows that he can call at any time should his relapse prevention plan dictate professional consultation.

Summary and Conclusions

While the 10 *process* factors delineated in this lesson are supported by substantial evidence for their role in recovery from schizophrenia, it must be recognized that most of the evidence is correlational and not experimental. *Correlations between variables cannot prove direction of causality.* Only hypothesis-testing studies, especially randomized, controlled clinical trials using predictive designs (not post-hoc interpretations) that compare the variables in question can shed more light on the etiological significance of our 10 putative factors associated with recovery. For example, we do not know *how* process variables such as hope, empowerment, and participation interact with independent treatment variables, including adherence to medication regimens, involvement in vocational rehabilitation, or activity in a self-help group. It is also

unclear *how* environmental factors such as social support, the therapeutic alliance, and the availability of state-of-the-art psychiatric treatments mediate the process of recovery. Although research on recovery from schizophrenia is in its infancy, we have proposed a number of proactive interventions that we believe enhance the likelihood of recovery for a substantial number of individuals with schizophrenia.

The key to succeeding in this endeavor lies in early intervention that engages the patient and his or her family in a comprehensive, continuous, and coordinated program of treatment and rehabilitation as soon as possible after the onset of psychotic symptoms. The first step for the practitioner is to form a collaborative therapeutic alliance with the patient and the patient's family, this is important as most patients either return to live with their families or continue to have substantial contact with them. Families are the main source of enduring financial and social support for patients with schizophrenia. *Despite the well-recognized role of family psychoeducation,*[97] *it is still offered to only a small minority of all families with relatives who are seriously mentally ill.*[98]

Clearly, the judicious use of pharmacotherapy remains the *sine qua non* for building a collaborative foundation for treatment, rehabilitation, and recovery. Each of the newer antipsychotic agents offer a number of advantages over the older, conventional agents. Evidence exists to the effect that the newer antipsychotics not only reduce positive and negative symptoms and cause fewer side effects than conventional neuroleptics, but also lessen cognitive impairment, lead to a better quality of life, improve treatment adherence, and have antidepressant effects. Despite the clear advantages of using the newer medications, upwards of 40% of patients diagnosed with schizophrenia who are prescribed antipsychotic medication receive the older agents. The use of the newer agents as first-line therapy for psychosis should result in reduced disability for individuals with schizophrenia.[99]

Finally, a number of empirically validated, psychiatric rehabilitation techniques—including social-skills training, supported employment and education, and integrated treatment for dual disorders—target those domains that are critical for *attaining*, and then *maintaining*, a return to premorbid levels of functioning. To the extent that new medications and innovative psychosocial treatments promote recovery from schizophrenia, increasing the availability of these treatments should be the guiding principle of mental health service delivery systems.

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Questions Based On This Lesson

To earn CME credits, answer the following questions on your quiz response form.

58. Which of the following do the authors feel is far and away the one most important element in recovery from schizophrenia?

A. Total elimination of positive symptoms

B. Social relationships

C. Independent living and vocational functioning

D. None of the above

59. Which of the following statements is correct?

A. Most, if not all, of recovered schizophrenic patients were not schizophrenic at all, but rather had received an erroneous initial diagnosis.

B. A key element in more favorable long-term outcomes for chronic schizophrenic patients has been shown to be access to continuous, coordinated, and comprehensive mental health services.

C. Because of the inevitably deteriorating nature of schizophrenia, even the most involved and best motivated family can be of little help in influencing outcome.

D. Substance abuse in schizophrenic patients has little or no effect on their ultimate outcome.

60. Which of the following statements is *not* correct?

A. An integrated approach to treating dual diagnosis patients (schizophrenia plus substance abuse) appears to be superior to either sequential or parallel treatment programs.

B. A longer duration of untreated psychosis (DUP), including prodromal symptoms, portends a poorer prognosis and a longer time before achieving remission.

C. Secondary verbal memory and executive functioning, as determined by neuropsychological testing, are good predictors of community functioning in schizophrenic patients and hence deserve attention with specific cognitive remediation strategies.

D. Premorbid factors, such as gender, age of onset, prior work history, and prior level of social adjustment do not seem to affect recovery among schizophrenic patients.