Social-Adaptive Functioning Evaluation (SAFE): A Rating Scale for Geriatric Psychiatric Patients

by Philip D. Harvey, Michael Davidson, Kim T. Mueser, Michael Parrella, Leonard White, and Peter Powchik

Abstract

Geriatric chronic psychiatric inpatients often remain in a chronic psychiatric hospital because of serious deficits in adaptive life functions. Because the additional complications and adaptive changes associated with aging have not been considered in previous scales, the Social-Adaptive Functioning Evaluation (SAFE) was developed. The items in the scale measure social-interpersonal, instrumental, and life skills functioning and are designed to be rated by observation, caregiver contact, and interaction with the subject if possible. Interrater and test-retest reliability were examined (n = 60) and convergent and discriminant validity were rated against other relevant measures (n = 50) in separate studies, with all being found adequate. The factor structure of the scale was examined with exploratory factor analysis, revealing a three-factor structure. Finally, predictive validity was examined in a preliminary study of 140 patients, 45 of whom were discharged after the assessment. The results indicate that patients who remained hospitalized could be discriminated from those who were sent to nursing homes or community care on the basis of certain SAFE items and subscales. These results support the use of this instrument in later studies of geriatric psychiatric patients.

Schizophrenia Bulletin, 23(1):131–145, 1997.

One of the principal sources of negative outcome in schizophrenia is a deficit in adaptive life functioning (Serban and Gidynski 1979; Tessler and Manderscheid 1982; Perlick et al. 1992). Many schizophrenia patients manifest severe and persistent disability because they are unable to care for themselves and become dependent on others for their care. Some of these impairments are present more often in patients with the negative symptoms of schizophrenia (Mueser et al. 1991) and in patients with more severe cognitive impairment (Breier et al. 1991). Patients who are dependent on others for their care are typically less seriously affected by the positive symptoms of the disorder than by negative symptoms or cognitive impairment (Keefe et al. 1987). Previous behavioral interventions in schizophrenia have often focused on remediation of these deficits in adaptive life functions (Paul and Lenz 1977; Liberman et al. 1986; Hogg and Hall 1992), with some recent suggestions that pharmacological interventions should be used (Davidson and Keefe 1995). Several rating scales have been developed to assess the severity of these impairments, and many manifest adequate psychometric characteristics (Schooler et al. 1979; Platt et al. 1980; Wykes and Sturt 1986; Birchwood et al. 1990).

Special problems are encountered in the assessment of certain subgroups of schizophrenia patients. For example, the assessment of geriatric patients is challenged by the changes in adaptive functions that occur with normal aging as well as the impairments associated with schizophrenia itself. Changes in mobility and orientation may occur with aging in psychiatric populations, and reductions in communication complexity and social interaction have been reported in normal aging (Kemper 1987). The 200,000 geriatric schizophrenia patients in the United States comprise a large and important population. However, previous rating scales for adaptive functioning in schizophrenia have not assessed the issue of aging-related impairments. Another crucial feature of the assessment of adaptive life skills is the specific environmental context. Because of the impoverished environment, geriatric inpatients in a State hospital or a nursing home may not have the opportunity to perform many behaviors, even if the appropriate skills are in their repertoire. Many geriatric patients who have had long hospital stays have been "deinstitutionalized" and referred to nursing homes, but most referrals to nursing homes do not reflect a reduction

Reprint requests should be sent to Dr. P.D. Harvey, Dept. of Psychiatry, Box 1229, Mt. Sinai School of Medicine, New York, NY 10029.

in level of care or additional opportunity to use adaptive skills.

This article presents the results of four studies of the item development, reliability assessment, factorial structure, and criterion-related validity of a rating scale specifically aimed at adaptive life functioning skills of geriatric chronic schizophrenia patients who are in institutional settings such as State hospitals, group homes, or nursing homes. The Social-Adaptive Functioning Evaluation (SAFE) is a 17-item, observer-rated scale that is used to generate ratings of the severity of impairment in crucial adaptive functioning domains. It was designed to be ratable through observation and caregiver interviews, as well as interaction with the patients whenever possible. As a result, it can rate patients with severe positive or negative symptoms regardless of patient cooperativeness or even responsivity.

Study I Methods

Subjects. Subjects in this study were 60 chronic schizophrenia patients who were long-stay residents of a State psychiatric center. They participated in a large-scale study of cognitive functioning and clinical symptoms. Researchers performed diagnostic assessments, and a structured consensus procedure was used to generate *DSM–III–R* diagnoses of schizophrenia (American Psychiatric Association 1987). This assessment procedure was published recently (Davidson et al. 1995); all subjects in all of the studies in this report were diagnosed and assessed with this procedure. A subset of patients was selected to manifest a wide range of impairments in cognitive-behavioral functioning, and a stratification procedure was used to select approximately equal numbers of patients with global functioning deficits in the absent, mild, moderate, and severe ranges on the Clinical Dementia Rating scale (CDR; Berg 1988).

The patients had an average age of 78.6 (standard deviation [SD] = 7.6), and 28 subjects (47%) were male. All subjects had been hospitalized for at least 10 consecutive years and none had an onset age later than 45. The patients had completed an average of 8.7 years of formal education (SD = 3.4). Their global CDR scores averaged 1.6 (mild to moderate), and the average age at first psychiatric hospitalization was 29.8 (SD = 10.1).

Item Generation. Literature searches, interviews with clinicians who worked with this population, and contact with experts who had experience with the study of adaptive life functions in nongeriatric schizophrenia patients and with normal geriatric patients were used to define the content areas of the scale. The final version of the SAFE (Appendix 1) contains 17 items assessing self-care, social competence and adjustment, and miscellaneous skills including impulse control and cooperativeness. Each item was rated on a 5-point scale (0 = no impairment, 1 = mild impairment, 2 = moderate impairment, 3 = severe impairment, and 4 = extreme impairment); higher scores reflect more severe impairment in social-adaptive functioning. No formal symptoms of schizophrenia were rated on this scale. Ratings were performed according to a glossary of terms and defined anchors. Ten patients were rated with a preliminary version of the scale to determine the usefulness of the items. After these ratings, modifications were made and the formal protocol began. The data from those 10 patients are not included in this report.

Reliability Protocol. The three raters—a psychologist, a psychiatric nurse, and a social worker—had participated in the initial development of the SAFE items. Ratings were generated from chart review, caregiver interview, and observation of the patient's behavior. For the interrater reliability protocol, each patient was rated by two raters simultaneously. Ratings were based on behavior during the last week, although no specified time limit is intrinsic to this method. Raters were unaware of the clinical assessment of the patient at the time of the rating and had not previously seen that patient for any type of evaluation. Each rater was paired with each of the other two raters for 20 ratings. Patients were then rerated 1 week later by the third rater, who was unaware of the initial ratings. Intraclass correlations (ICCs) were calculated between each of the raters in the interrater reliability protocol and between one of the raters from the interrater reliability study (designated as the primary rater) and the data from the retest assessment. Cronbach's alpha was computed as a measure of the internal consistency of the overall scale, using the data from the primary rater at the first assessment.

Study I Results

The coefficient alpha for the total scale, based on the 60 subjects in this study, was 0.90. The ICCs for interrater and test-retest reliability are presented in table 1. The ICC for the overall SAFE score, for both interrater and test-retest reliability, was extremely high. All ICCs for interrater reliability of the individual items were quite high, 0.87 or above. The test-retest ICCs were more variable, but items measuring behavior that itself is likely to fluctuate, such as cooperation with treatment, were the lowest. As a result, these ICCs indicate that the SAFE ratings are sensitive to fluctuations in behavior and that they are quite stable over time.

Table 1. Interrater and retest reliability of SAFE scale items (n = 60)

Items	Interrater ICC	Retest ICC
Bathing and grooming	0.97	0.83
Clothing and dressing	0.95	0.77
Eating, feeding, and diet	0.89	0.59
Money management	0.97	0.67
Neatness and maintenance activities	0.89	0.63
Orientation/mobility	0.92	0.67
Impulse control	0.98	0.69
Respect for property	0.98	0.79
Communication skills	0.98	0.81
Conversational skills	0.96	0.64
Instrumental social skills	0.97	0.72
Social appropriateness/politeness	0.97	0.70
Social engagement	0.88	0.70
Friendships	0.88	0.68
Recreation/leisure	0.91	0.77
Participation in hospital programs	0.94	0.86
Cooperation with treatment	0.87	0.63
Total score	0.99	0.99

Note.—SAFE = Social-Adaptive Functioning Evaluation; ICC = intraclass correlation.

Study I Discussion

The data from the reliability study indicate the SAFE scale ratings were internally consistent and reliable across raters and across time. The level of reliability was adequate, at least for research purposes, and suggests the need for additional studies of the validity of the measure. A limitation of this study was the use of raters who had participated in the development of the SAFE scale items. In later studies, six additional raters were trained and used to generate the ratings.

Study II

This study examined the convergent and discriminant validity of the SAFE. In the previous study, patients were stratified for their level of cognitive impairment, but the extent to which SAFE scale scores were influenced by other aspects of the illness, such as age at onset, cognitive impairment, and the positive and negative symptoms of schizophrenia, could not be determined. In this protocol, a sample of patients was examined with a full assessment of clinical symptoms and cognitive functions 1 week before the SAFE was rated. Our previous research (Harvey et al. 1995) found that cognitive functioning was extremely stable at a 1-week followup, and studies of the clinical symptoms of the patients (Putnam et al. 1996) suggest that negative symptoms are stable within this patient population over a 1-year period. Correlations were computed between subject characteristics and symptoms (collected 1 week previously) and SAFE scale ratings. If SAFE scale ratings were valid, they were expected to be moderately correlated with measures of cognitive functioning and clinical symptoms, particularly negative symptoms, but the overlap would be only partial. Since previous studies have suggested strong relationships between cognitive and adaptive impairments (e.g., Breier et al. 1991), a lack of correlation between SAFE scale scores and the measures would suggest that the SAFE was not validly measuring the constructs of interest.

Study II Methods

Subjects. Fifty schizophrenia patients who did not participate in the previous study were diagnosed with the same procedures. The patients averaged 79.3 years of age (SD = 8.5), and 36 percent of the subjects were male. They had an average of 9.5 years of education (SD = 2.7) and had been hospitalized psychiatrically for the first time at age 27 (SD = 8.8) on average.

Assessment. All subjects were examined with a structured assessment of their clinical symptoms and cognitive functioning, and with an evaluation of their adaptive life functions. Clinical symptoms were rated with the Positive and Negative Syndrome Scale (PANSS; Kay 1991). The rating procedures and reliability of the assessments have been described by Davidson et al. (1995). The dependent variables were the total scores on positive and negative symptom scales. Both interrater reliability (Davidson et al. 1995) and 1-year followup stability (Putnam et al. 1996) are quite suitable for the PANSS. Cognitive functions were examined with the Mini-Mental State Examination (MMSE; Folstein et al. 1975). The MMSE has extremely high interrater and test-retest reliability in this population (Harvey et al. 1992a, 1995). The dependent measure was total score, which can range from 0 to a perfect score of 30. Adaptive life functions were examined with the self-care subscale of the Alzheimer's Disease Assessment Scale–Late Version (ADAS–L; Mohs 1992). The reliability and validity of this instrument with this population has been documented by Kincaid et al. (1995).

One week after this assessment, the patients were examined with the SAFE; all ratings were performed by a different clinical rater who was unaware of the results of the previous assessment. Demographic information was collected at the time of clinical assessment. All variables from the clinical assessment were correlated with the results of the SAFE assessment.

Study II Results

To document the sensitivity of the SAFE scale to age and education effects, Pearson correlations were computed between age and years of formal education and total scores on the SAFE. Similarly, correlations between SAFE total scores and age at first psychiatric admission were calculated. A separate set of correlations were computed between total SAFE scale scores and positive and negative PANSS scores, MMSE total scores, and ADAS–L self-care subscale scores. These correlations are presented in table 2. Significant correlations between SAFE scale total scores and MMSE total scores, PANSS negative subscale scores, and ADAS–L self-score scores were found. Also, SAFE total scores were significantly higher in the older patients. PANSS positive subscale scores, years of education, and age at first admission were not correlated with SAFE scale scores.

To evaluate the relative importance of each of the variables described previously for the prediction of SAFE scale total scores, a regression approach was adopted. All of the variables used in the correlational analyses were entered into a stepwise regression analysis. The overall regression analysis was significant ($F = 19.67$; $df = 3,46$; $p < 0.001$), with 68 percent of the variance in the SAFE scale total scores accounted for by three of the predictor variables. MMSE total scores entered the equation first, accounting for 54 percent of the variance in SAFE scale scores; followed by ADAS–L self-care scores, accounting for 10 percent additional variance; followed by age, accounting for an additional 4 percent of the variance. The contribution of PANSS negative symptoms approached significance ($p = 0.08$) but did not enter the equation.

Table 2. Correlation of SAFE scale total scores with demographic and clinical variables ($n = 50$)

Variable	Pearson *r*	*p*
Age	0.55	0.001
Years of education	−0.27	NS
Age at first psychiatric admission	0.03	NS
MMSE total score	−0.75	0.001
PANSS positive symptom score	0.05	NS
PANSS negative symptom score	0.70	0.001
ADAS–L self-care scale	−0.75	0.001

Note.—SAFE = Social-Adaptive Functioning Evaluation; NS = not significant; MMSE = Mini-Mental State Examination (Folstein et al. 1975); PANSS = Positive and Negative Syndrome Scale (Kay 1991); ADAS–L = Alzheimer's Disease Assessment Scale–Late Version (Kincaid et al. 1995).

Study II Discussion

The significant correlations between SAFE scale total scores and cognitive impairment, negative symptoms, and alternative measures of self-care are evidence of convergent and discriminant validity of the SAFE. SAFE scale scores are also sensitive to age effects in this population: older patients tend to be more severely impaired in adaptive functioning scores. Furthermore, regression analyses suggest that the SAFE scale scores are not completely explained by other aspects of the symptomatology of schizophrenia, suggesting that the scale goes beyond the sum of previous measures in understanding the various domains of deficit in adaptive functioning in geriatric schizophrenia patients.

The lack of relationship in the regression analyses between negative symptoms and SAFE scale scores is due to the large overlap between cognitive impairment and negative symptoms in this population. Previous studies of the entire patient population from which this subset of subjects was selected (Davidson et al. 1995) indicated that the correlation between MMSE scores and negative symptoms was consistently around $r = 0.60$ across a sample of schizophrenia patients over age 65. The results of this study suggest that the SAFE scores are strongly related to other aspects of schizophrenia in the manner that would be expected if the scale was adequately sensitive to the various aspects of the illness previously demonstrated to adversely affect life functioning. The sensitivity to age effects also suggests that this scale is accurately measuring age-related declines in adaptive skills, as would be required from a measure that identifies aspects of adaptive functioning affected by both age and chronic psychiatric inpatient status.

The lack of a significant correlation between positive symptom total scores and SAFE scores may suggest that, consistent with earlier studies, positive symptoms of the illness are not associated with deficits in adaptive functions. An alternative possibility is that positive symptom severity is simply too variable over time to be useful for correlational studies. Followup studies of the severity of positive symptoms, including studies with this population, have often found correlations close to zero at various followup intervals (Putnam et al. 1996).

Study III

The SAFE scale demonstrated adequate reliability and concurrent validity in the previous studies. Adaptive functions, such as positive and negative symptoms of schizophrenia (Harvey et al. 1992*b*; Keefe et al. 1992;

Andreasen et al. 1995), are not likely to reflect a single dimension. We had originally written items to measure self-care, social functions, and impulse control. The following study was conducted to determine if the items in the scale were organized into a factor structure that reflected the scale content.

Study III Methods

Subjects. All 110 subjects who were administered the SAFE in the previously described studies, as well as an additional 30 schizophrenia patients who were later administered the SAFE scale as part of ongoing data collection activities, constituted the subject sample for this study.

Analyses. The 17 SAFE items were examined with an exploratory factor analysis to identify the dimensions in the scale. A principal components analysis was employed, followed by an orthogonal (VARIMAX) rotation. Skree criteria were used to identify principal components with an eigenvalue of 1.0 or greater, with no a priori restriction placed on the number of principal components identified.

Study III Results

The principal components analysis yielded a solution with three principal components having eigenvalues greater than 1.0. These components were then rotated to yield a more interpretable factor structure. These three factors, labeled "instrumental and self-care," "impulse control," and "social functions," along with the factor loadings for each of the items, are presented in table 3. The three factors accounted for 68 percent of the variance in the total SAFE scale scores, and the separation of the items into their factors was quite good.

Table 3. Factor analysis for the SAFE scale

	Factor loadings[1]		
Items	Instrumental and self-care	Impulse control	Social functions
Bathing and grooming	**0.75**	0.24	0.28
Clothing and dressing	**0.76**	0.30	0.25
Eating, feeding, and diet	**0.71**	0.32	0.10
Money management	**0.64**	0.05	0.42
Neatness and maintenance	**0.69**	0.04	0.21
Orientation/mobility	**0.65**	0.14	0.34
Impulse control	0.16	0.77	0.09
Respect for property	0.32	**0.54**	0.08
Communication skills	**0.60**	0.05	0.32
Conversational skills	0.51	0.09	**0.66**
Instrumental social skills	0.34	0.24	**0.59**
Social appropriateness/ politeness	0.31	0.22	**0.68**
Social engagement	0.05	0.21	**0.87**
Friendships	0.23	0.07	**0.83**
Recreation/leisure	0.40	0.10	**0.70**
Participation in hospital programs	0.33	0.11	**0.68**
Cooperation with treatment	0.04	**0.76**	0.24
Eigenvalue	7.67	1.44	1.28
Variance accounted for (%)	32	12	24

Note.—SAFE = Social-Adaptive Functioning Evaluation.

[1]Numbers in bold identify the highest factor loading.

Study III Discussion

The three factors found in this study parallel those reported in other studies of adaptive functioning in chronic schizophrenia patients and also parallel the dimensions of the scale. The amount of variance accounted for was adequate and not unexpected, given the high reliability of the scale. These factors will have to be replicated in later studies, but the pattern of distribution of scores is quite consistent with the way the items are written.

Study IV

The true test of a measure of adaptive functioning is its predictive validity—the extent to which it is able to discriminate those patients with a greater degree of success from those with less success in areas requiring adaptive functioning. Previous research on deinstitutionalization has indicated that adaptive functioning is strongly correlated with potential for discharge from chronic care (e.g., Perlick et al. 1992; Leff et al. 1994). Previous studies indicate that cognitive impairment on its own is a less powerful predictor of discharge potential than adaptive skills and that positive symptoms may in fact interfere substantially with discharge (Greenfield et al. 1989; Leff et al. 1994; White et al., in press).

In this study, all geriatric chronic schizophrenia inpatients who were examined with the SAFE scale were followed up at intervals ranging from 6 months to 2 years after assessment. Because the hospital was under strong pressure to reduce its census, approximately one-third of all geriatric chronic patients hospitalized there for 3 years or more had been discharged in the interim. This number of discharges provided the opportunity for a naturalistic study of the predictive ability of SAFE scores to identify

those patients who were discharged and where they had been sent. A previous study of discharges in this population (White et al., in press) found that poorer ADAS–L adaptive functioning scores discriminated those patients who were sent to a nursing home from those who were sent into supervised group homes or family care. Serious positive symptoms, particularly hostility and belligerence, identified those patients who were not released from State hospital care. In this study, total scores and individual items from the SAFE were used to discriminate patients discharged from the hospital from those who were not and to discriminate between those who were discharged to a nursing home and those who were sent to alternative environments.

In this study, the three factors identified in the previous analysis were used to predict, with discriminant function analysis, whether subjects were discharged and, if so, to which placement. In addition, each individual SAFE item was compared across outcomes (remained in hospital, discharged to the community, transferred to a nursing home).

Study IV Methods

Of the 140 patients described in the study above, 45 had been discharged from the hospital since their assessment with the SAFE. Of these 45 discharges, 10 were sent to family care and the remainder were transferred to nursing homes. These three outcomes (remained in hospital, discharged to the community, and transferred to nursing home) were compared.

Study IV Results and Discussion

Factor scores were created from the three factors extracted in the previous study. These three factor scores were entered as the independent variables in a stepwise entry discriminant analysis, predicting the three outcomes described above. The overall discriminant analysis was significant ($F = 5.77$; $df = 2,136$; $p < 0.001$) with two of the factors statistically significant. The first factor that entered was impulse control ($F = 8.07$; $df = 1,137$; $p < 0.001$), followed by instrumental and self-care ($F = 4.14$; $df = 2,136$; $p < 0.02$). The third factor, social functions, did not come close to entering the equation ($F = 0.68$; $p > 0.25$). Correct classification of the cases was 69 percent.

Total and item scores, as well as group differences, for the SAFE scale are presented in table 4. In the item-by-item descriptive analyses, a one-way analysis of variance was used to compare subjects in the three outcome groups along the individual items and total SAFE scale scores. The SAFE total score discriminated the three groups of patients, as did a number of the individual items

Table 4. Association of SAFE scale items with discharge status

	Remained (n = 95)		Nursing home (n = 35)		Community (n = 10)			
Item	Mean	SD	Mean	SD	Mean	SD	F	p
Bathing and grooming	2.2	1.2	2.1	1.1	1.8	1.2	0.56	0.57
Clothing and dressing	2.1	1.1	2.0	1.0	1.1	0.9	4.00	0.02
Eating, feeding, and diet	1.7	1.3	1.6	1.0	1.4	0.7	0.28	0.75
Money management	3.3	1.0	3.1	1.1	3.4	1.4	0.68	0.51
Neatness and maintenance	3.4	1.1	3.4	1.5	2.4	1.8	3.16	0.05
Orientation/mobility	3.4	0.8	3.7	1.6	2.9	1.6	1.98	0.14
Impulse control	2.0	1.1	1.4	1.1	1.3	1.2	5.53	0.005
Respect for property	1.4	1.6	1.2	1.9	1.2	1.6	1.31	0.17
Communication skills	3.6	0.9	3.8	0.5	3.0	3.4	3.07	0.05
Conversational skills	2.8	1.4	2.7	1.8	2.3	1.1	0.60	0.55
Instrumental social skills	2.0	1.5	1.7	1.4	1.4	1.4	1.03	0.36
Social appropriateness/politeness	2.2	1.5	1.7	1.6	1.0	0.8	8.10	0.001
Social engagement	2.8	1.0	2.6	0.9	2.5	0.7	0.55	0.58
Friendships	3.2	1.0	3.2	0.8	3.1	0.7	0.05	0.95
Recreation/leisure	2.7	1.0	2.7	1.1	2.3	1.5	0.77	0.46
Participation in hospital programs	2.6	0.9	2.6	1.1	2.2	1.1	0.85	0.43
Cooperation with treatment	1.9	0.8	1.1	1.5	1.2	0.8	5.30	0.006
Total score	41.1	6.6	40.6	7.9	34.4	6.8	3.15	0.05

Note.—SAFE = Social-Adaptive Functioning Evaluation. SD = standard deviation.

of the scale. Compared with those who remained, patients referred to community care were less impaired in areas of dressing and maintaining neatness, as well as in impulse control, cooperativeness, communication skills, and social appropriateness. There were no differences in many of the items, reflecting the chronically impaired nature of the population and the fact that community care accepts patients who are quite impaired in their functioning, as long as they are not belligerent and do not need nursing-type care. Patients referred to nursing home care were similar to community care patients in terms of cooperativeness and impulse control and similar to patients who remained in the hospital in terms of self-care skills. Consistent with the factor analyses, social functioning items generally failed to discriminate the groups. In general, these data tentatively suggest that the SAFE is useful for identifying those patients who can be discharged to the community, although the level of impairment probably suppressed differences between those patients who remained in the hospital and those who were discharged.

A major limitation of this study is the highly selected nature of the population and the placements to which they were discharged. Clearly, the placements do not reflect a remission of symptoms, and the current sample of subjects is quite chronic and low functioning. Also, these placements may not be optimal, but they were clinically determined, just as length of stay in chronic inpatient care is clinically determined in most cases. In addition, the finding that the social functioning factor does not predict placement does not reduce the importance of this factor; a more plausible explanation is that these placement decisions did not consider social functioning. Studies with acutely admitted geriatric patients would provide better information on the importance of social functioning. At the same time, the finding that poor impulse control and related symptoms are the best discriminators of those patients who cannot be released from psychiatric care is consistent with findings from acute-care studies (Greenfield et al. 1989).

General Discussion

The SAFE had good internal consistency, interrater reliability, and test-retest reliability. The SAFE also demonstrated good convergent and discriminant validity. Despite the scale's convergence with similar measures, the overlap is not complete. Three factors came out of the factor analyses and reflect the way the items were initially written. Predictive validity, in terms of its usefulness for discrimination of patients who were discharged to community care and those who required referral to a more restrictive environment or remained in the hospital, was also demonstrated in a limited study. Additional studies, including examination of acutely admitted patients, are required to further evaluate the predictive validity of the SAFE.

Studies are currently under way to determine if raters at other sites produce similar ratings. One of the additional uses of the SAFE scale will be descriptive. Although our development studies were performed in a State psychiatric hospital, many chronic geriatric patients with a long stay are being referred to nursing homes or structured group home settings. These environments are also relevant to the adaptive functions measured by the SAFE, and differences across sites may tell us about the characteristics of geriatric chronic schizophrenia patients in different treatment modalities. These studies may characterize the patients at these varied sites and may also resolve some of the controversies in geriatric schizophrenia, including level of impairment of adaptive functions in acute versus chronic geriatric schizophrenia patients, and identify the level of adaptive impairment in geriatric chronic patients who reside in the community with residual (or more severe) symptoms of schizophrenia. Similarly, studies of patients with late-onset schizophrenia will provide information about this important group of patients and their functional deficits. Validity is adequate to justify the use of the SAFE in additional studies, including studies of patients in structured community settings and geriatric acute-care settings.

References

American Psychiatric Association. *DSM-III-R: Diagnostic and Statistical Manual of Mental Disorders.* 3rd ed., revised. Washington, DC: The Association, 1987.

Andreasen, N.C.; Arndt, S.; Alliger, R.; Miller, D.; and Flaum, M. Symptoms of schizophrenia: Methods, meanings, mechanisms. *Archives of General Psychiatry,* 52:341–351, 1995.

Berg, L. Clinical Dementia Rating (CDR). *Psychopharmacology Bulletin,* 24(4):637–639, 1988.

Birchwood, M.; Smith, T.; Cochrane, R.; Wetton, S.; and Copestake, S. The Social Functioning Scale: The development and validation of a new scale of social adjustment for use in family intervention programmes with schizophrenic patients. *British Journal of Psychiatry,* 157:853–859, 1990.

Breier, A.; Schreiber, J.L.; Dyer, J.; and Pickar, D. National Institute of Mental Health longitudinal study of schizophrenia: Prognosis and predictors of outcome. *Archives of General Psychiatry,* 48:239–246, 1991.

Davidson, M.; Harvey, P.D.; Powchik, P.; Parrella, M.;

White, L.; Knobler, H.Y.; Losonczy, M.F.; Keefe, R.S.E.; Kate, S.; and Frecska, E. Severity of symptoms in geriatric chronically institutionalized schizophrenic patients. *American Journal of Psychiatry,* 152(2):197–207, 1995.

Davidson, M., and Keefe, R.S.E. Cognitive impairment as a target for pharmacological treatment in schizophrenia. *Schizophrenia Research,* 17:123–128, 1995.

Folstein, M.F.; Folstein, S.E.; and McHugh, P.K. Mini-Mental State: A practical method for grading the cognitive state of patients for the clinician. *Journal of Psychiatric Research,* 12:189–198, 1975.

Greenfield, T.K.; McNiel, D.E.; and Binder, R.E. Violent behavior and length of psychiatric hospitalization. *Hospital and Community Psychiatry,* 40:809–814, 1989.

Harvey, P.D.; Davidson, M.; Powchik, P.; Parrella, M.; White, L.; and Mohs, R.C. Assessment of dementia in elderly schizophrenics with structured rating scales. *Schizophrenia Research,* 7:85–90, 1992*a*.

Harvey, P.D.; Lenzenweger, M.F.; Keefe, R.S.E.; Pogge, D.L.; Serper, M.R.; and Mohs, R.C. Empirical evaluation of the factorial structure of clinical symptoms in schizophrenia: Formal thought disorder. *Psychiatry Research,* 44:141–151, 1992*b*.

Harvey, P.D.; White, L.; Parrella, M.; Putnam, K.M.; Kincaid, M.M.; Powchik, P.; Mohs, R.C.; and Davidson, M. The longitudinal stability of cognitive impairment in schizophrenia: Mini-Mental State score at one- and two-year follow-ups in geriatric inpatients. *British Journal of Psychiatry,* 166:630–633, 1995.

Hogg, L., and Hall, J. Management of long-term impairments and challenging behaviour. In: Birchwood, M., and Tarrier, N., eds. *Innovations in the Psychological Treatment of Schizophrenia: Assessment, Treatment, and Services.* Chichester, England: John Wiley & Sons, 1992. pp. 171–203.

Kay, S.R. *Positive and Negative Syndromes in Schizophrenia.* New York, NY: Brunner/Mazel, 1991.

Keefe, R.S.E.; Mohs, R.C.; Losonczy, M.F.; Davidson, M.; Silverman, J.M.; Kendler, K.S.; Horvath, T.B.; Nora, R.; and Davis, K.L. Characteristics of very poor outcome schizophrenia. *American Journal of Psychiatry,* 144:889–895, 1987.

Keefe, R.S.E.; Harvey, P.D.; Lenzenweger, M.; Davidson, M.; Mohs, R.C.; and Davis, K.L. Empirical assessment of the factorial structure of clinical symptoms in schizophrenia: Negative symptoms. *Psychiatry Research,* 44:153–165, 1992.

Kemper, S. Life-span changes in syntactic complexity. *Journal of Gerontology,* 42:323–328, 1987.

Kincaid, M.; Harvey, P.D.; Parrella, M.; White, L.; Putnam, K.M.; Powchik, P.; Davidson, M.; and Mohs, R.C. Validity and utility of the Alzheimer's Disease Assessment Scale–Late Version (ADAS–L) for the assessment of dementia in geriatric chronic schizophrenic patients. *Journal of Neuropsychiatry and Clinical Neuroscience,* 7:76–81, 1995.

Leff, J.P.; Thornicroft, G.; Coxhead, N.; and Crawford, C. The TAPS Project: 22. A five-year followup of long stay psychiatric patients discharged to the community. *British Journal of Psychiatry,* 165(Suppl. 25):13–17, 1994.

Liberman, R.P.; Mueser, K.T.; and Wallace, C.J. Social skills training in schizophrenics at risk for relapse. *American Journal of Psychiatry,* 143:523–526, 1986.

Mohs, R.C. *The Alzheimer's Disease Assessment Scale–Late Stage Version (ADAS–L), Rating Manual.* New York, NY: Mt. Sinai School of Medicine, 1992.

Mueser, K.T.; Douglas, M.S.; Bellack, A.S.; and Morrison, R.L. Assessment of enduring deficit and negative symptom subtypes in schizophrenia. *Schizophrenia Bulletin,* 17(4):565–582, 1991.

Paul, G.T., and Lenz, R.J. *Psychosocial Treatment of Chronic Mental Patients: Milieu Versus Social-Learning Programs.* Cambridge, MA: Harvard University Press, 1977.

Perlick, D.; Stastny, P.; Mattis, S.; and Teresi, J. Contribution of family, cognitive, and clinical dimensions to long-term outcome in schizophrenia. *Schizophrenia Research,* 6:257–265, 1992.

Platt, S.; Weyman, A.; Hirsch, S.; and Hewett, S. The Social-Behavior Assessment Schedule (SBAS): Rationale, contents, scoring, and reliability of a new interview schedule. *Social Psychiatry,* 15:43–55, 1980.

Putnam, K.M.; Harvey, P.D.; White, L.; Parrella, M.; Kincaid, M.M.; Powchik, P.; and Davidson, M. Cross-temporal stability of positive and negative symptoms: A one-year followup study of geriatric schizophrenic inpatients. *Biological Psychiatry,* 39:92–99, 1996.

Schooler, N.; Hogarty, G.; and Weissman, M. Social Adjustment Scale II (SAS–II). In: Hargreaves, W.A.; Atkisson, C.C.; and Sorenson, J.E., eds. *Resource Materials for Community Mental Health Programs.* Rockville, MD: National Institute of Mental Health, DHEW Publication No. (ADM)79-328, 1979. pp. 290–303.

Serban, G., and Gidynski, C.B. Relationship between cognitive defect, affect response, and community adjustment in chronic schizophrenics. *British Journal of Psychiatry,* 134:602–608, 1979.

Tessler, R.C., and Manderscheid, R.W. Factors affecting

adjustment to community living. *Hospital and Community Psychiatry*, 33:203–207, 1982.

White, L.; Parrella, M.; McCrystal-Simon, J.; Harvey, P.D.; Masiar, S.; and Davidson, M. Characteristics of elderly psychiatric patients retained in a state hospital during downsizing: A prospective study with replication. *International Journal of Geriatric Psychiatry*, in press.

Wykes, T., and Sturt, E. The measurement of social behavior in psychiatric patients: An assessment of the reliability and validity of the SBS schedule. *British Journal of Psychiatry*, 148:1–11, 1986.

Acknowledgments

This research was supported by USPHS grant MH-46436 to Dr. Michael Davidson from the National Institute of Mental Health. The authors thank the following staff members who contributed to this study: Janice McCrystal, Stephanie Bowler, Rita Ohsiek, Susan Frick, Margaret M. Kincaid, and Cynthia Blum.

The Authors

Philip D. Harvey, Ph.D., is Associate Professor of Psychiatry, Mt. Sinai School of Medicine; Michael Davidson, M.D., is Director of Research, Sheba Medical Center, Tel-Hashomer, Israel, and Professor of Psychiatry, Mt. Sinai School of Medicine; Kim T. Mueser, Ph.D., is Associate Professor of Psychiatry, Dartmouth School of Medicine, Concord, NH; Michael Parrella, Ph.D., Leonard White, Ph.D., and Peter Powchik, M.D., are Assistant Professors, Mt. Sinai School of Medicine, New York, NY.

Schizophrenia Bulletin, Vol. 23, No. 1, 1997

Appendix 1. Social-Adaptive Functioning Evaluation (SAFE)

1. BATHING AND GROOMING

0. No impairment. The patient bathes and grooms himself without prompting and assistance. He appears to be aware of and takes pride in his appearance.
1. Mild impairment. The patient can perform most bathing and grooming tasks. Occasionally, he needs to be reminded to complete oral hygiene, bathe, or comb his hair but, when prompted, corrects these problems.
2. Moderate impairment. The patient can perform less complex grooming tasks (combing hair, showering) but may need assistance in performing more complex aspects of grooming. He regularly requires reminding to maintain his grooming.
3. Severe impairment. The patient does not initiate any activities of grooming. He is willing to be bathed and groomed, but needs extensive assistance to perform the basic grooming tasks (showering, combing hair). He may insist on an unusual and eccentric style of hair arrangement or makeup.
4. Extreme impairment. The patient is uncooperative and/or actively resists grooming and bathing, creating a health hazard.

2. CLOTHING AND DRESSING

0. No impairment. The patient is able to dress himself without help; if given a choice he chooses clothes appropriate for the season from among his possessions, and, if given funds or the opportunity, is able to purchase or appropriately select clothing.
1. Mild impairment. The patient dresses himself without prompting or assistance, but sometimes he appears sloppy (e.g., soiled or torn clothing, shirt-tails exposed, buttons or zippers are open, shoelaces are untied).
2. Moderate impairment. The patient needs some prompting or assistance to dress himself. He sometimes may dress in odd combinations of clothes (pants are on inside out; wears multiple layers of clothing) or in seasonally inappropriate clothing (heavy coat in the summer). The patient may not realize when his clothes need to be cleaned.
3. Severe impairment. The patient needs extensive assistance dressing, but does not resist this assistance. He may often dress in odd combinations or seasonally inappropriate clothing. He may disrobe without realizing that the situation is inappropriate.
4. Extreme impairment. The patient refuses to wear clothes or is so unresponsive that dressing is ineffective and, therefore, spends most of the time in pajamas or robe.

3. EATING, FEEDING, AND DIET

0. No impairment. The patient is able to feed himself without assistance and has specific food preferences. If given funds or opportunity, the patient would be able to choose his own diet, buy additional food items outside the psychiatric hospital, or prepare a simple and adequately nutritional meal.
1. Mild impairment. The patient can use eating utensils and supplement the meals provided by the hospital with food purchased at vending machines. He is somewhat sloppy in eating habits and table manners and might choose an unusual diet if unsupervised.
2. Moderate impairment. The patient occasionally eats spontaneously, but needs constant prompting in order to finish the meal. Use of eating utensils is poor and use of hands instead of utensils is not unusual. He cannot independently care for all of his dietary needs.
3. Severe impairment. The patient accepts food, but needs to be supervised while eating. The patient may occasionally refuse food, eat excessively, or eat non-nutritive, hazardous substances.
4. Extreme impairment. The patient swallows food when fed, but supplements are necessary in order to survive (high caloric, high protein supplements, or intragastric feeding).

4. MONEY MANAGEMENT

0. No impairment. The patient is able to manage his own money without assistance. Patient knows how much money he has, can count money, and knows correct change when spending money.
1. Mild impairment. The patient is able to manage his own money with some assistance. He may need some help in budgeting his money, but is able to spend budgeted money without significant assistance.
2. Moderate impairment. The patient needs considerable assistance budgeting, counting, and spending money. If unsupervised, he might spend his money impulsively or give large sums away. However, he is capable of performing some or most of these activities with the help of staff prompting or monitoring (e.g., purchasing an item).
3. Severe impairment. Most aspects of money management need to be performed or closely supervised by staff members. The patient is not capable of performing even the simplest of tasks involving money without assistance, but wishes to have money or values what it can purchase.
4. Extreme impairment. The patient is unwilling to participate in any aspects of money management and is uninterested in money or buying things. The patient's money is completely managed by others.

5. NEATNESS AND MAINTENANCE ACTIVITIES

0. No impairment. The patient keeps his area neat and helps staff in maintenance activities on the unit.
1. Mild impairment. The patient requires some prompting to keep his area neat. He sometimes helps out with maintenance on the unit when asked by staff.
2. Moderate impairment. The patient needs extensive prompting or actual assistance to keep his area clean.
3. Severe impairment. The patient can only minimally participate in any "household" maintenance tasks. He can do some simple activities when prompted (e.g., picking up his clothes from the floor), but otherwise staff must maintain his area.
4. Extreme impairment. The patient does not assist in any "household" maintenance tasks.

6. ORIENTATION/MOBILITY

0. No impairment. Patient is permitted to leave the hospital grounds and return at the appropriate and agreed upon time.
1. Mild impairment. The patient knows his way around the hospital grounds and can leave the unit of residence unaccompanied (has privileges to do so), but is sometimes late when arriving at destinations.
2. Moderate impairment. The patient can usually leave the unit of residence unaccompanied, but sometimes fails to arrive at a destination or fails to return on time. The patient may know some parts of the hospital.
3. Severe impairment. The patient can only leave the unit when escorted and would otherwise fail to arrive at his destination. The patient may know a few parts of the hospital.
4. Extreme impairment. The patient is restricted to the unit or shows no incentive to leave the unit.

7. IMPULSE CONTROL

0. No impairment. The patient waits as necessary in order to have his needs met.
1. Mild impairment. Occasionally, the patient is impatient (e.g., repeats the same demand, is excessively emphatic when making a request). His impulses can be controlled with simple reminders.
2. Moderate impairment. The patient is sometimes intrusive if his needs are not met immediately. He may have loud outbursts, but he is not violent. Verbal commands are adequate to maintain his impulses.
3. Severe impairment. The patient often has problems with outbursts that require intervention (e.g., at least once every week or two). Certain topics of conversation or certain situations are avoided to prevent these outbursts.
4. Extreme impairment. The patient is prone to violent outbursts that require intervention (e.g., several times per week, including 1-1 supervision) and is avoided by other patients and staff.

8. RESPECT FOR PROPERTY

0. No impairment. The patient follows social rules regarding respect for others' property and adequately maintains his own property.
1. Mild impairment. The patient maintains his property and respects the property of others, but he sometimes needs reminders to obey these social rules.

2. Moderate impairment. The patient understands the difference between his property and that of others. He may occasionally take others' property, but be willing to return it when requested. He sometimes may not notice or protest when someone takes his property.
3. Severe impairment. The patient has a limited understanding of the distinction between his property and others' and often disobeys social rules regarding property and often does not follow them (e.g., he regularly takes others' property or gives his own away). The patient responds to prompts to follow conventional rules regarding property (e.g., giving others' property back when instructed to).
4. Extreme impairment. The patient does not follow social rules respecting others' property or maintaining his own and does not respond to prompts to follow these rules.

9. COMMUNICATION SKILLS

(Score this item if the patient has the opportunity; includes writing skills)
0. No impairment. The patient uses the telephone appropriately, including directory assistance, or writes letters for enjoyment.
1. Mild impairment. The patient dials most telephone numbers or addresses an envelope without assistance, but needs help in using directory assistance.
2. Moderate impairment. The patient uses the telephone or writes letters, but consistently needs assistance in dialing or addressing an envelope.
3. Severe impairment. The patient needs extensive assistance using the telephone (e.g., dialing, speaking into the receiver, speaking loudly enough, knowing when to hang up) or writing letters (e.g., addressing envelope, constructing content of a letter).
4. Extreme impairment. The patient never uses the telephone or writes letters. He refuses to or is incapable of doing so, even when extensive assistance is offered.

10. CONVERSATIONAL SKILLS

0. No impairment. The patient converses with others in a socially appropriate, skilled manner (e.g., choice of topic, level of self-disclosure, good eye contact and voice loudness).
1. Mild impairment. The patient has fairly good skills when conversing with others. His choice of conversational topic or self-disclosure may occasionally be inappropriate, or his nonverbal skills (eye contact, interpersonal distance) or paralinguistic skills (voice tone, loudness) may need some improvement. Feedback is successful in getting the patient to alter his behavior.
2. Moderate impairment. The patient has some ability to engage in conversations with others (e.g., can talk for several minutes with another person), but often demonstrates poor skills (e.g., choice of topic, nonverbal and paralinguistic skills). Feedback produces only small improvements in these skills.
3. Severe impairment. The patient has great difficulty sustaining any conversation for more than a very brief period (e.g., 30 seconds–1 minute). People have difficulty following the patient's conversations, which may revolve around delusions or lead nowhere in particular. Patient appears not to listen to others, but can briefly engage other people in conversations. Feedback is ineffective at improving the patient's ability to converse.
4. Extreme impairment. The patient is incapable of engaging in even very brief conversations, even when prompted. Patient is mute, speaks in a garbled fashion, has severely disordered syntax, or is so preoccupied with delusions that even brief conversations are impossible.

11. INSTRUMENTAL SOCIAL SKILLS

0. No impairment. The patient understands the hospital social order and roles and is able to ask for specific services from appropriate staff members in a socially skillful manner. Patient regularly attains the instrumental (tangible) goals of his interactions.
1. Mild impairment. The patient is often able to achieve the instrumental goals of his interactions. The patient may occasionally ask an inappropriate person for something. Social skill problems may occasionally limit the patient's ability to achieve instrumental goals (e.g., the patient demands something rather than requests it, he stands inappropriately close to the other person, or he speaks in a low voice tone).

2. Moderate impairment. The patient sometimes achieves the instrumental goals of his interactions with others, but his success is often hampered by poor social skills (e.g., lack of specificity, prominent deficits in nonverbal and paralinguistic skills). The patient may misperceive social roles (asking the social worker for change in medication or the dietician for a pass). Despite these limitations, the patient tries regularly to obtain instrumental goals.
3. Severe impairment. The patient rarely attains instrumental goals of social interactions, because of poor social skills and misperception of social roles. The patient approaches others occasionally to achieve instrumental goals.
4. Extreme impairment. The patient never approaches others to achieve instrumental goals.

12. SOCIAL APPROPRIATENESS/POLITENESS

0. No impairment. The patient's interactions with others are well mannered and polite. Even in emotionally charged situations he usually conducts himself in a thoughtful and considerate fashion. The patient shows appropriate respect and concern for others' feelings in his interactions, even during emotionally charged conflicts.
1. Mild impairment. The patient is sometimes socially awkward, but is usually polite. He may occasionally be impolite (e.g., asking an intrusive question, not responding to a greeting), but responds when given feedback about such behaviors. The patient occasionally shows inappropriate disregard for others' feelings, (e.g., during a conflict). When prompted, the patient can demonstrate more appropriate respect.
2. Moderate impairment. The patient often fails to demonstrate common polite behaviors (e.g., making greetings, getting out of someone's way, responding to simple requests such as turning down the radio) and is sometimes socially inappropriate. When the patient is given feedback about his behavior, some small improvements are possible. The patient sometimes appears unaware of how others may feel about what he says (e.g., insulting others).
3. Severe impairment. The patient is almost never polite and is often socially inappropriate. Attempts to correct his behavior are largely unsuccessful. The patient sometimes makes crude and inappropriate comments. He makes lewd sexual comments or crude racial slurs without regard to how they are perceived by his audience.
4. Extreme impairment. The patient is socially inappropriate nearly all the time. His behavior as well as speech are characterized by unacceptable social conduct. The patient frequently makes crude and inappropriate comments without regard to how they are perceived by others.

13. SOCIAL ENGAGEMENT

0. No impairment. The patient both initiates social interactions with others on a regular basis (e.g., several times per day) and is responsive to interactions initiated by others. Social interactions are not limited to very brief periods, but may extend to longer periods of time (e.g., more than 15 minutes).
1. Mild impairment. The patient both initiates social interactions with others and is responsive to others, but interactions tend to be shorter or occur less frequently.
2. Moderate impairment. The patient regularly participates in social interactions, but usually reciprocates social interactions, rather than initiates them.
3. Severe impairment. The patient usually avoids social contacts. He rarely initiates social interactions, and when others initiate the interaction he is only minimally responsive. Most interactions are quite brief.
4. Extreme impairment. The patient actively refuses to interact with others and may leave the room when someone enters. He may react with fear or aggression if forced to interact.

14. FRIENDSHIPS

0. No impairment. The patient has friendly relationships with others inside and outside the hospital. At least one of these friendships goes beyond "acquaintance" and the nature of the friendship is close, stable, long-lasting, and mutually rewarding.
1. Mild impairment. The patient has several acquaintances but has difficulties forming and maintaining close, stable friendships. The patient may interact preferentially with staff members instead of patients. Or, he may have some friendships that are based on abnormal content or motivation. For example, the patient exploits or is being exploited sexually, financially, or the relationship is based on inappropriate or unusual attractions.
2. Moderate impairment. The patient may seek out and spend time with one other patient, but without meaningful interaction (e.g., sitting silently). The patient may seek out a staff member with whom he attempts to be friendly.

3. Severe impairment. The patient has 1 or 2 acquaintances with whom he maintains some contact, but these relationships are maintained solely on the initiative of the other person.
4. Extreme impairment. The patient has no contacts with either patients or staff members.

15. RECREATION/LEISURE

0. No impairment. The patient takes advantage of recreational activities offered by the psychiatric hospital (games, group meetings, craft workshops). Private time includes several "productive" pursuits (e.g., knitting, reading, listening to music).
1. Mild impairment. The patient takes advantage of recreational activities offered by the psychiatric hospital (games, group meetings, craft workshops) but cannot develop his own active recreational activities. In his private time, he prefers more passive recreational activities (e.g., watching television).
2. Moderate impairment. The patient enjoys simple activities (e.g., watching television) but not the more complicated activities. He may have preferences for television shows which he likes to watch. Although he may attend most recreational activities, he does not seem to derive much pleasure from them.
3. Severe impairment. The patient attends some recreational activities passively and reluctantly. He may watch television shows indiscriminately or without volume, or look at magazines or books without apparent comprehension.
4. Extreme impairment. The patient has no recreational interests and actively avoids participation in activities provided by the hospital staff.

16. PARTICIPATION IN HOSPITAL PROGRAMS

0. No impairment. The patient takes appropriate and selective advantage of programs offered by the psychiatric hospital (e.g., workshop, patient government) and appears to enjoy them.
1. Mild impairment. The patient often participates in programs organized by the psychiatric hospital (e.g., patient government), but occasional prompting is needed.
2. Moderate impairment. The patient participates in some programs organized by the psychiatric hospital, but often needs to be prompted and occasionally leaves before the activity is completed.
3. Severe impairment. The patient passively and reluctantly participates in occasional programs organized by the psychiatric hospital, but rarely or never on his own accord.
4. Extreme impairment. The patient refuses to participate in programs organized by the hospital.

17. COOPERATION WITH TREATMENT

0. No impairment. The patient fully cooperates with the treatment plan and implementation. He understands the benefits and the risks of the treatment, and is an active participant in his treatment (e.g., he requests a specific medication). The patient is able to accurately report adverse effects from medication or intercurrent medical illnesses.
1. Mild impairment. The patient is fully compliant with treatment and other suggestions or reasonable requests, but does not actively participate in the treatment plan and occasionally overemphasizes or underemphasizes adverse effects of medication or intercurrent medical illnesses.
2. Moderate impairment. The patient is compliant with most suggestions but occasionally refuses treatment or other reasonable requests. He may often complain of medical problems which have no physiological explanation.
3. Severe impairment. The patient is only selectively compliant with treatment suggestions. Medical illnesses or psychotic symptoms may be exacerbated because of noncompliance with medication or other suggestions.
4. Extreme impairment. The patient refuses to comply with treatment to the extent that severe health problems result. He may need to be restrained or medicated by force or with court intervention.