# Suicide Prevention in the Psychiatric Hospital

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It is currently impossible to distinguish between patients with depression who will make a suicide attempt and those who will not. Prevention, therefore, must be based on the assumption that any patient with more than mild symptoms of depression is at risk of suicide, and can only be effective if it is applicable to all patients with moderate to severe depression. A treatment strategy that differentiated between regressive and progressive therapeutic measures was developed for patients admitted to a psychiatric hospital. Regressive, as opposed to progressive, treatment meant that the patient was temporarily relieved of virtually all responsibilities for self and others. Progressive measures were strictly avoided for all patients with symptoms of depression, regardless of the primary diagnosis. This strategy was tested on 5,149 inpatients and day patients over a period of 6.25 years and compared with 6,891 patients over the 15.75 years prior to this period. The suicide rate was 97 (per 100,000 admissions) compared with 319 in the previous period. The treatment method appears to be able to reduce the suicide rate. Although this result was achieved with hospital patients, it suggests that a regressive treatment method could be promising if developed for outpatient treatment as well.

A suicide prevention strategy would be at its most effective if it could identify patients with a real suicide risk. Although some factors are known to increase this risk—such as a diagnosis of mood disorder or schizophrenia (Martin, 2000; Sharma, Persad, & Kueneman, 1998), hopelessness (Fawcett et al., 1987), a lengthy period of contemplation of the suicidal act (Birtchnell & Alarcon, 1971), and previous suicide attempts (Powell, Geddes, Deeks, Goldacre, & Hawton, 2000)—

these factors do not narrow down the number of risks sufficient enough to allow targeted preventive measures (Appleby et al., 1999; Eagles, Klein, Gray, Dewar, & Alexander, 2001; Gunnel & Frankel, 1994). Powell et al. (2000), for example, studied 97 suicides of psychiatric hospital inpatients and discovered five significant predictors: recent bereavement, presence of delusions, suicidal ideation, chronic mental illness, and family history of suicide. However, the authors came to the conclusion that only a small minority of patients who are at high risk can be identified by these predictors because all five were present in only one of those 97 patients that committed suicide. If, the threshold of concern (i.e., the number of necessary predictors) is reduced, the false positive rate will soon increase to unacceptable values (90%). In addition, many if not all patients with moderate to severe depression have suicidal thoughts but do not openly express them (Gladstone

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The authors are grateful to Dr. John T. Maltsberger and Dr. David C. Clark for their substantial help in revising the manuscript.

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et al., 2001). Even if a patient is known to be contemplating suicide, the question remains as to which specific therapeutic measures will dissuade him. There are virtually no studies on this and the conduct of a study like this by prospective design would be impossible.

Consequently, as far as therapeutic practice is concerned, one must assume that any patient with moderate to severe symptoms of depression is at risk of suicide. What is required, therefore, is a suicide prevention treatment strategy that is applicable to the many patients with symptoms of depression. One such prevention strategy is described below. It was developed in a psychiatric hospital after all the patients that had committed suicide were analyzed in terms of disease progression. Further discussion also considers how such a program could be applied to outpatients.

#### **METHOD**

# Treatment Procedures

The psychiatric hospital in Cologne, Germany used for this study (for a description of the patients and treatment routine cf. Matakas, 1992) has three inpatient wards with a total of 40 beds. One of these wards is a secure unit. The hospital also has four daypatient wards, each with a capacity of 14 places. Patients have daily appointments with the physician or consultant. As a rule, contact with the family is maintained for patients with a schizophrenic or an affective psychosis. An individual treatment plan is drawn up in consultation with each patient. It specifies the type of drug therapy as well as the social and, if appropriate, psychotherapeutic objec-

tives. Every day there are one to two group sessions on the inpatient wards and three to four on the day-patient wards. These group sessions cover various themes: communal life on the ward, patients' social problems, art and motion therapy, and psychological problems. The latter topic is compulsory for all day patients but is offered only to selected inpatients. Inpatients are often unable to participate in the group sessions owing to their psychic condition. Sometimes they cannot even take part in the group walks or joint meals and thus receive individual care. The average duration of treatment is 25 days for inpatients and approximately 55 days for day patients. In the past, this treatment concept applied regardless of the psychiatric diagnosis.

Beginning on October 1, 1999, the treatment rules were altered for patients in a depressive condition. A depressive condition was diagnosed by the physicians according to the ICD-10 if either (1) moderate to severe depressive mood was present (moderate or severe means that the patient is able only with great difficulty or totally unable to continue performing social, domestic, and work activities) or (2) depressive mood was only light and additionally at least one or more of the following symptoms was clearly evident: (i) lack of interest in virtually any activity, (ii) severe psychomotor agitation or retardation, (iii) intense feeling of worthlessness, or (iv) severely reduced concentration or decisionmaking ability. The new treatment method distinguished between regressive and progressive measures. Under the regressive treatment strategy, the patient was temporarily relieved of responsibility for self and others. In particular, this meant inpatient care, which meant that the patient could leave the ward, but only when accompanied; an ordered daily routine including bed rest, meals, seeing the doctor, and group meetings regulated by ward staff; no visits home; no discussion of family conflicts with the therapists; no dealing with the patient's social problems; and no contact with his/her work environment. At the same time, patients were told that although it was desirable for them to overcome

<sup>1.</sup> We are aware that we do not use the phrase prevention here in the traditional way. It is neither primary nor secondary prevention in a strict sense, because we are considering patients in treatment, and patients of known risk. But it seems to us still an appropriate phrase to apply to the situation where clinical science cannot refine the risk prediction any finer.

their depression quickly, they would be given as much time as they needed.

Regressive does not mean that the patients are under the continuous control of the staff, but that they are free from responsibility. Regressive measures, such as those described here, generally lead most depressive and schizophrenic patients to the point where their subjective condition quickly improves, before the actual depression process is over. It is then often possible to move to the first or second stage of the progressive treatment. How quickly or how far one can go with the progressive measures depends on how far the depressive symptoms recede. Borderline patients often react to treatment measures with a short-term deterioration of symptoms.

Progressive treatment, on the other hand, was based on measures that gave back the patient's responsibilities or aimed to reintegrate the patient into normal life. Progressive measures were gradually introduced only when symptoms of depression had disappeared. The first stage of progressive treatment was to extend the patient's independence within the hospital (unrestricted authorization to go out, participation in psychotherapeutic group sessions). The second stage was to restore normal contact with the family (initially more frequent contact with family members in the hospital, then visits home); and the third stage was to discuss, where appropriate, the patient's social situation, contact with employers if appropriate, planning the patient's life after completion of hospital treatment, conflict-oriented rather than purely supportive psychotherapy, daypatient treatment, and outpatient treatment. Drug therapy with antidepressants, with neuroleptics in cases of psychotic symptoms, and occasionally with tranquilizers was administered for the regressive as well as the progressive treatments. If depressive symptoms recurred under the progressive measures, these measures were discontinued and another attempt was made once the patient's depressive condition had disappeared again. This procedure was repeated until there was a sustained improvement.

The difficulty with day-patient treat-

ment is that it always comprises progressive elements in the sense described above. For this reason, the rules were modified. Patients with a moderate to severe depressive episode were treated purely on an inpatient basis during the acute stage. Day-patient treatment was possible for patients without or with a mild depressive episode, with dysthymia, or whose symptoms of a moderate or severe depressive episode had subsided. If, however, depressive symptoms worsened for 2 weeks or more, treatment was continued on an inpatient basis. If, under day-patient treatment, depressive symptoms developed in patients who originally had neither a depressive episode nor dysthymia, and if these symptoms persisted for longer than 2 weeks, day-patient care was broken off and treatment was continued on an inpatient basis where appropriate. The number of day-patient cases transferred to inpatient care was not recorded, but it is certain that there were fewer than 60 in the period from October 1999 to 2005. These rules applied to all patients, irrespective of the primary diagnosis. The treatment concept described above remained otherwise unaltered, including with regard to the administration of antidepressants, which followed the usual rules.

The fact that the hospital is relatively small made it possible to apply the treatment strategy effectively, particularly since one of the authors (F.M.) has been the Medical Director of the hospital since 1981.

# The Patients

The study covers all patients admitted to the hospital between January 1, 1984, and December 31, 2005 (Table 1). The period before the new therapy was introduced covers 15 years and 9 months and 6,891 patients, of whom nearly two thirds were women. The high proportion of women is due to the low number of alcoholics and the high number of depressive patients treated at the hospital. Three fourths of the patients were between 18 and 44 years of age. Elderly people are also clearly underrepresented because psy-

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TABLE 1
Patients and Main Diagnoses, Jan. 1984-Dec. 2005

A 1	Jan. 1984– Sept. 1999 N = 6,891	Oct. 1999– Dec. 2005 N = 5,149	
Admissions	IV = 0,891	10 = 3,149	
men	35%	35%	
women	65%	65%	
18-44 years of age	76%	73%	
45-64 years of age	22%	25%	
>64 years of age	1%	2%	
day patients	51%	35%	
inpatients	49%	65%	
schizophrenic disorders	21%	18%	
affective disorders	42%	48%	
addiction (alcohol)	6%	10%	
dementia	1%	1%	
others (mainly severe personality disorders,			
in particular borderline disorder)	30%	23%	

chogeriatric patients are only treated at the hospital under exceptional circumstances.

Diagnoses are defined at the hospital according to the DSM-III, III R, or IV and, since the year 2000, the ICD-10 criteria. Before October 1999, 21% of patients in the study were diagnosed with schizophrenia; 42% with affective disorder, 6% with addiction, meaning addiction to alcohol and/or prescription drugs (patients addicted to illegal drugs are not treated at the hospital); 1% with dementia; and 30% with other disorders (mainly severe personality disorders, in particular borderline disorder). These, however, are primary diagnoses. Many patients with a primary diagnosis other than affective disorder showed depressive symptoms upon admission and in the course of the treatment. Exact figures for this are not at hand.

The period after the change in therapeutic strategy covers 6 years and 3 months and 5,149 patients. There was no fundamental change in the distribution of gender, age groups, or diagnoses. The only difference was the proportion of day patients to inpatients, which changed from 51:49% to 35:65%; respectively. The reason for this change is that a third inpatient ward was opened in July 1996.

In order to ascertain whether a reduction in suicides during inpatient treatment was bought at the price of an increase in suicides after discharge, the suicide rate in the first year after discharge was also monitored. This was done by consulting the city of Cologne register, which documents all suicides committed by its residents. This register is relevant since all patients treated at the hospital are residents of the city. It was not possible, however, to monitor the entire period from 1984 onwards. For this reason, the suicide rate 1 year after discharge was compared for the period 3 years before and 3 years after the treatment strategy had been changed, that is, from October 1, 1996, to September 30, 1999, and from October 1, 1999, to September 30, 2002.

#### RESULTS

From January 1, 1984, to September 30, 1999, there were 6,891 admissions, of which 22 (13 women, 9 men) died as a result of suicide. This represents a total suicide rate of 319 suicides for every 100,000 admissions. Of these suicides, 5 patients had been diagnosed with schizophrenia, 16 with depres-

sion, and 1 with depression and chronic alcohol abuse, although the primary diagnosis for that patient was depression (Table 2). Thus the diagnosis-related suicide rate is, respectively, schizophrenia, 345; depression, 552; and alcoholism, 242 per 100,000 admissions of patients with these diagnoses.

Eight of the 22 patients had been treated on a day-patient basis and 14 as inpatients. Eight of the inpatients had been authorized by the physician to go out of the hospital and had committed suicide while they were away. Three of the inpatients had left the hospital without prior permission, and the remaining three committed suicide on the ward. One of the schizophrenics had refused all medication. The other patients with diagnosed schizophrenia received neuroleptics and additional tricyclic antidepressants. The patients with depression all received tricyclic antidepressants.Some also received tranquilizers and additional neuroleptics.

In 19 of the cases, the patient records clearly indicate that the depressive condition

TABLE 2
Suicides and Suicide Rates for Every 100,000
Admissions or Discharges (in brackets)

Suicides During Treatment					
	Jan. 1984– Sept. 1999	Oct. 1999- Dec. 2005			
Total suicides	22 (319)	5 (97)			
Treatment					
inpatients	14 (398)	5 (149)			
day patients	8 (227)	0 (0)			
By Diagnosis					
schizophrenia	5 (345)	1 (107)			
depression	16 (552)	3 (121)			
alcoholism	1 (242)				
Suicides Up to	o 1 Year After 7	reatment			
	Oct. 1996-	Oct. 1999-			
	Sept. 1999	Sept. 2002			
discharges	2,681	2,809			
suicides	5 (187)	5 (178)			

had not improved in the week prior to the suicide. There are references to a continuing depressive mood, paranoid thoughts, or severe agitation. Three patients showed a slight improvement a few days before the suicidal act, and for two patients it was not possible to reliably reconstruct the situation on the basis of their records.

For the 16-year period prior to October 1999—the period before the introduction of the regressive/progressive treatment measures—all 22 patients who died by suicide were on progressive treatment measures at the time of death by retrospective assessment. All but one of the cases denied any suicidal intent in the last few days before their suicide.

From October 1, 1999, to December 31, 2005, there were 5,149 admissions, of which five inpatients (two women, three men) died as a result of suicide. This corresponds to a suicide rate of 97 suicides for every 100,000 admissions. One woman committed suicide while away from the hospital approximately 1 week after her admission. She was diagnosed with alcoholism and her mood had not been good. Three of the patients were admitted because of depression. In the days preceding the suicidal act, all three were assessed as being in poor condition. One committed suicide within 24 hours after admission, the two others while on a leave. The fifth patient, a man, had been diagnosed with chronic schizophrenia. He hanged himself in his room on his very first night. For the three patients that were allowed to leave the hospital it was a clear contravention of the treatment rules described above.

The patient with the diagnosis of alcoholism received a medium dose of tranquilizers. Two of the depressive patients with depression received antidepressives SSRI. The third patient with depression, who committed suicide within 24 hours, came with neuroleptic and tricyclic antidepressive medication on admission. The patient with chronic schizophrenia received neuroleptics. The diagnosis-related suicide rate for this period is,

respectively, schizophrenia, 107; depression, 121; and alcoholism, 194 per 100,000 patients with these diagnoses.

Comparison of the suicide rate before and after October 1999 in a cross table according to the two-sided version of Fisher's exact test reveals a significant difference at a level of 1%. A one-way ANOVA of the suicide rate before and after October 1999 yields a value of p = 0.038 based on the suicide rate per admissions per year (Jan. 1984–Sept. 1999: M = 396; 95% CI: 217, 574. Oct. 1999–Dec. 2005: M = 82; 95% CI: 2, 162). If one takes a rolling average of three years, then p = 0.001 (Jan. 1984–Sept. 1999: M = 391; 95% CI: 295, 486. Oct. 1999–Dec. 2005: M = 103; 95% CI: 46, 160).

The number of suicides, admissions and actual suicide rates per year and with a rolling average of 3 years are shown in Table 3. The last column contains the values predicted on the basis of the trend function. The development of the suicide rate is best described by a logarithmic function ( $R^2 = 0.281$ ) (Fig. 1). The difference between the values of this logarithmic function and the actual values for the period from Oct. 1999 to Dec. 2005 is significant at a level of p < 0.001 according to the Wilcoxon test.

Of the 2,681 patients discharged between October 1, 1996, and September 30, 1999, five died as a result of suicide within 1 year (suicide rate 187 per 100,000 discharges). These patients had all been treated for depression. During this period there were six suicides at the hospital. Of the 2,809 patients discharged between October 1, 1999, and September 30, 2002, five also died as a result of suicide within a year after their discharge (suicide rate 178). One of these had been diagnosed with mania, two with depression, and two with addiction. One patient from each of the two treatment periods committed suicide within the first 2 days after their discharge from the hospital.

The suicide rate for the general population in the city of Cologne was available to us up to the year 2004. From 1984 until 2004 the rate slowly dropped from about 19 to

around 11 per 100,000 inhabitants per year<sup>2</sup> (Fig.2). There was a similar decline in the suicide rate in the hospital. But this decline is clearly different from the sharp drop which occurred after changing therapy strategy in 1999 (Fig. 1). There was a similar movement in all Germany (Felber, 2006).

No significant increase in the average duration of treatment was observed after October 1999. A small number of patients showed no improvement, even after a lengthy treatment period. We have no comparative figures, but we believe that there was neither a fall nor a rise in the number of these patients under the new treatment. There was no change in the rate of readmission.

### **DISCUSSION**

In statistical terms suicides are a rare occurrence and require a great deal of time before comparisons can be made. In our study, the entire observation period covers 22 years and more than 12,000 patients. A randomized study to evaluate dimension scores cannot be done over such a long period of time and with so many patients, quite apart from the ethical considerations that would preclude such an undertaking. In particular, diagnostic methods and the use of psychoactive drugs have been adapted to developments in psychiatric science. But since the suicide rate was calculated on the basis of all patients, regardless of their diagnosis, it is unlikely that any change in diagnostic procedures had a major effect. Moreover, since the hospital has a defined catchment area, one can assume that the type of patient has not changed and that the patients are representative of a Western European city. As regards antidepressants, tricyclic antidepressants have been the drugs of choice since 1984. For various reasons, the new antidepressants are only used in a minority of cases even today.

<sup>2.</sup> In 2000 the U.S. age-adjusted suicide rate was 10.6 completed suicides per 100,000 (De-Martino et al., 2003).

TABLE 3
Suicides and Suicide Rates per 100,000 Admissions per Year, per 3
Years as Rolling Average, and Computed Prediction of Suicide Rate

Year	Suicides	Suicide Rate per Year	Suicide Rate per 3 Years	Logarithmic Prediction Based on Values 84–99
1984	1	633		454
1985	0	0	299	435
1986	. 1	265	376	419
1987	3	865	470	406
1988	1	280	382	395
1989	0	0	191	385
1990	1	292	405	376
1991	3	923	585	368
1992	2	539	566	361
1993	1	237	329	354
1994	1	211	149	348
1995	0	0	267	342
1996	3	589	196	337
1997	0	0	325	332
1998	3	384	231	327
9/1999	2	310	347	322
10/1999	0	0	39	318
2000	1	117	39	314
2001	0	0	78	310
2002	1	119	39	306
2003	0	0	115	302
2004	2	228	112	299
2005	1	108		296

Note. Treatment was changed not at the end of the year but on the first of October 1999.

The treatment philosophy of the hospital has always remained the same, except for the changes described above. No distinction was drawn between regressive and progressive treatment before 1999. However, owing to the nature of the hospital, it was precisely the severely and persistently depressive patients that often received intensive treatment, and this is borne out by the analysis of the suicide cases. It was only after October 1999 that the treatment of patients with depressive symptoms was bound explicitly by the rules described above. Compliance with these rules has been monitored since then, a practice made possible by the size of

the hospital. Nevertheless, at least three of the suicides after 1999 seem to be due to contravention to these rules.

The decisive question is whether the change in the suicide rate from 319 to 97 per 100,000 can be attributed to the change in the treatment strategy. The drop in Cologne (and all Germany) suicide rates from 1984 until 1998 may be regarded as one possible explanation for the inpatient suicide rate decrease. However, Keller and Wolfersdorf (1995), on the basis of a careful statistical analysis, rejected the hypothesis that the suicide rate in German psychiatric hospitals is influenced by the trend in the general popu-

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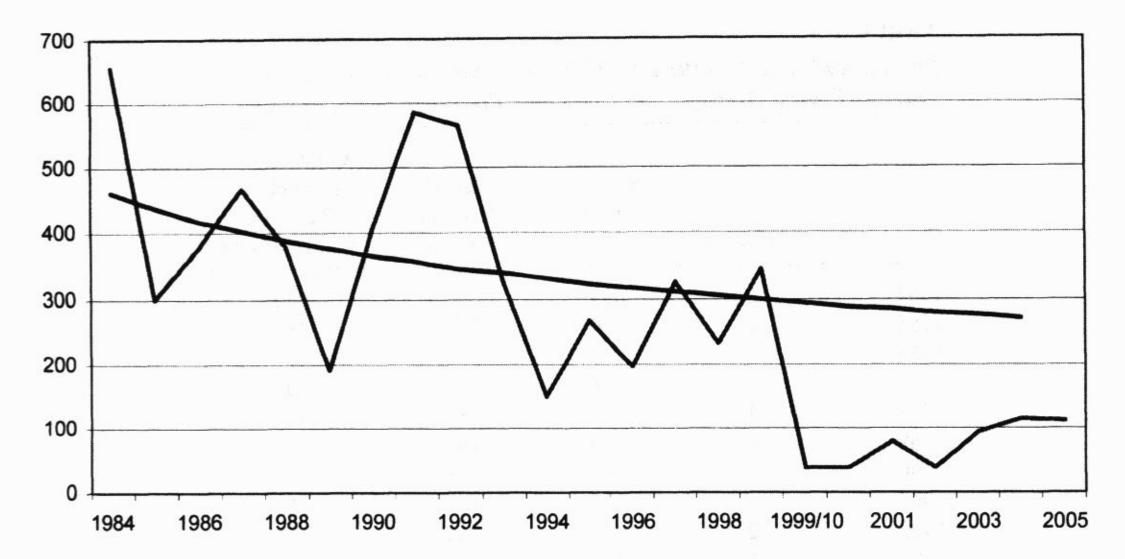


Figure 1. Suicide rate (per 100,000 admissions per 3 years as rolling average) 1984–2005. The trend line (logarythmic) represents prediction of suicides based on values 1984 – 1999.

lation. Moreover, the magnitude of decrease was substantially larger for the psychiatric inpatients with a factor of 3, it was a sudden drop, and the suicide rate in the general population displays a much weaker a trend for a further decrease after 1996 (Felber, 2006). The significance calculations based on an ANOVA were p = 0.038 as an annual value and p = 0.001 as a rolling average for 3 years for the difference before and after 1999. The actual suicide rate after 1999 deviated signifi-

cantly from the predicted rate calculated according to a logarithmic curve. A nonspecific effect would be expected to cause a more gradual change, as can be observed between 1984 and 1999. All this indicates that the difference in the suicide rate before and after the change in treatment is not a matter of chance. The authors think it reasonable to speculate that the treatment intervention accounted for the decrease.

Many publications on the subject of

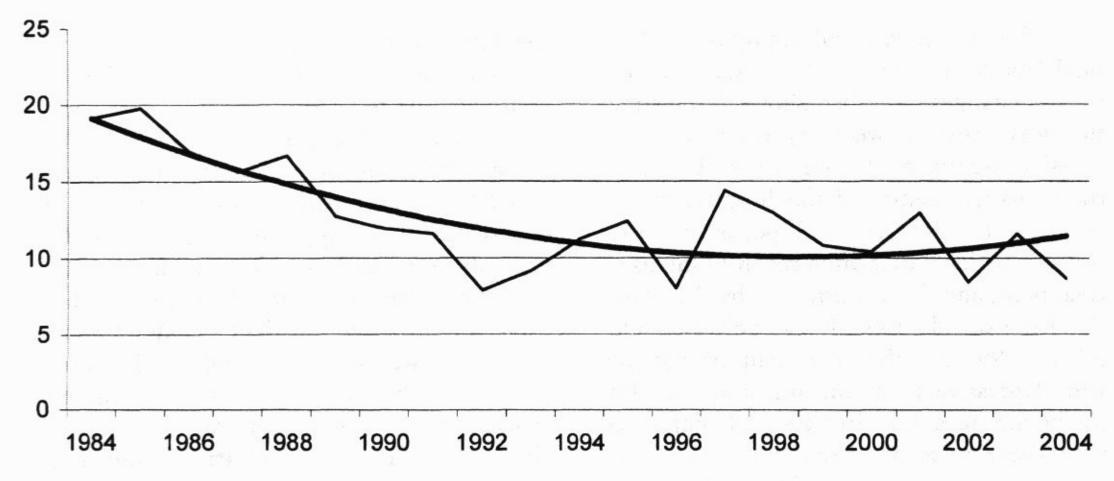


Figure 2. Sucide rate (per 100,000 inhabitants per year) of general population in Cologne City with trend line (polynomic), 1984-2004.

suicide also imply that depressive patients need protection and shielding from certain pressures (Clark, 1995), even though we are not aware of any systematic studies on this. It is comparatively simple for a hospital to implement a regressive treatment strategy, but our findings could form a basis for systematic studies to determine how regressive strategies can be developed and applied in an outpatient setting.

In addition, there are a number of facts that may be deemed to indirectly confirm the results described above. The most likely explanation for the much reported rise in hospital suicides since the 1960s (Wolfersdorf et al., 2000) is that patients were confronted more than before with a form of progressive therapy, in the above-described sense, while psychiatry favored a more regressive approach before this period. Wolfersdorf et al. (2000) who also report a consecutive decline in the suicide rate think that the reason for this may be the fact that psychiatric hospitals returned to a more regressive method of treatment, although they use different terminology for this and have not examined this thesis systematically. It is a well-known fact that suicides are particularly common while patients are on leave at home (Proulx, Lesage, & Grunberg, 1997; Shah & Ganesvaran, 1997). For at least some depressive patients, the home environment seems to be a progressive situation compared with the hospital environment. When treating depressive patients on an outpatient basis, therefore, the psychiatrist should pay particular attention to whether the home setting places a strain on the patient or generates high stress levels and if so, how to relieve these stresses and strains where appropriate.

Suicides are particularly common in the first few months after patients are discharged from the psychiatric hospital (Geddes, Jusczak, O'Brian, & Kendrick, 1997). This may be because they do not yet feel ready to cope with normal life and all its obligations. Hesso (1977) expressed a similar view back in 1977. When this is borne in mind, the constant reduction in the duration of treatment in psychiatric hospitals (King,

2003) appears questionable. The figures in this study do not indicate that the low suicide rate recorded after the change in therapy was achieved in exchange for a higher rate after discharge. The suicide rate in the first year after discharge remained constant at 180 for the 6-year observation period, and this figure applied both before and after the therapeutic change.

Most of the suicide patients in this study were in a poor psychological condition in the days and, in most cases, weeks before the suicide. Before the treatment strategy was changed, the records generally showed that the therapists had intensified treatment for this reason-more or less regularly reinforcing conflict-oriented psychotherapy and involving the family. It is often the patients themselves who ask for their responsibilities to be gradually returned to them, explaining that it makes them feel better, or it is their families who push for patients to be given back their responsibilities. The physician, who feels obliged to alleviate his patients' distressing symptoms and is determined not to miss any opportunity to help them, feels forced to take action and gives in to their demands.

Consider the following case. A 28year-old nurse showed depressive symptoms for the first time at work. When she also developed psychotic symptoms, she was admitted as an inpatient. After several weeks she felt better and visited home a number of times. She expressed doubts about whether she was up to the demands of work. Despite this, she was given the task one weekend of talking to her family about resuming her job. Before the family could get together for this discussion, she hanged herself. A paper by Maltsberger, Hendin, Haas, and Lipschitz (2003) contains an example of how the family can place progressive demands on the patient: "The mother of a 39-year-old man with Bipolar Disorder convinced his therapist to move the patient out of his group home to foster his independence. The patient responded by confiding to other patients a plan to drown himself with the help of ropes and cinderblocks, showing them materials he had acquired. Although the therapist was informed and confiscated the materials, he proceeded with the discharge plan, interpreting the patient's behavior as a resistance to change. . . . Several days later the patient used weights to drown himself" (p. 115).

The physician should not encourage patients to be more active as long as there are no objective indications that it improves a patient's condition. In particular, discussions with the family that touch on family conflicts do not appear helpful for all patients while they are still in a depressive condition (Matakas, Schmitt-Voss, Rohrbach, Voigt-Kempe, & Churan, 1999). Contact with the family is possibly helpful for some or even many patients, but there is no criterion that determines whether this is the case or not. In general, therefore, one should choose the safe option and apply the regressive method until the depression improves.

A regressive treatment is more easily conducted in a hospital setting than as an outpatient situation. Yet, the principle of this treatment is not control, but the temporary release from responsibility. This means, first and foremost, responsibility in profession, followed by responsibility in the social area (e.g., a church community or club), responsibility in the family; and finally responsibility

for the self (i.e., nutrition, hygiene, clothes, etc.). It seems possible, then, to carry out such a treatment principle on an outpatient basis.

Regressive treatment does not mean that patients are left alone to deal with their problems. Suicides may occur because depressive patients have not received adequate help in overcoming their conflicts (Morgan & Priest, 1991). It appears, however, that patients should not work on their conflicts until they have largely overcome their symptoms of depression. Depression, therefore, should be treated in two stages: first, the depressive symptoms should be treated, and second, the patient should be helped to deal with his social, family, and work conflicts.

Before we close this discussion, it is necessary to address the problem posed by patients with therapy-resistant or chronic depression. These patients cannot be burdened with progressive measures under the treatment strategy proposed here, not even after a lengthy period of therapy. One has to accept that in many ways such patients will be quite restricted in their ability to function and will need support even after they have been discharged from hospital. Clearly they are likely to be symptom-free only to a limited extent.

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Manuscript Received: July 26, 2006 Revision Accepted: December 30, 2006