*A study of suicides that succeeded shows that the majority were mentally ill. The individuals concerned suffered from chronic alcoholism or were in the depressive phase of manic-depressive disease. This study indicates that a practical program of prevention involves diagnosis and hospitalization of such cases.*

# SOME CLINICAL CONSIDERATIONS IN THE PREVENTION OF SUICIDE BASED ON A STUDY OF 134 SUCCESSFUL SUICIDES

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SUGGESTIONS concerning the prevention of suicide have arisen chiefly from statistical studies of coroners' records,[1] from studies of patients who have been hospitalized and who commit suicide in the hospital or shortly after discharge,[2-4] from the reports of psychiatrists based on their experiences with their own patients,[5-7] and from studies of attempted suicide.[8-10] These suggestions have, in general, been of value in helping to define more clearly the problem of preventing suicide. In none of these studies, however, have all of the suicides committed within a given geographical area in a specified time period been studied carefully with regard to both the clinical and ecological aspects of suicide. As a result, there are no reported data which can answer the following questions about an unselected (consecutive) group of suicides: (a) What proportion of persons who commit suicide are clinically ill prior to death? (b) What is the nature and frequency of the illnesses from which these persons suffer? (c) Are there other illnesses that, although common, are rarely or never associated with successful suicide? (d) What are some of the factors other than diagnosis that may be helpful in assessing the probability of suicide? (e) In urban United States to what degree is suicide currently a clinical problem, as measured by the proportion of suicides who had been seen by a physician or psychiatrist during their last episode of illness?

Since answers to these questions should be useful in helping to prevent at least some suicides, the present investigation was designed to attempt to gain such information. All suicides occurring in metropolitan St. Louis in a one-year period were studied by means of interviews with relatives, friends, job associates, physicians, and others shortly after each successful suicide.

## Method

In the one-year period between May 15, 1956, and May 15, 1957, the coroners of the City of St. Louis and of St. Louis County[1] returned a verdict of suicide in the deaths of 134 persons.

Of these 134 persons, 119 have been studied by means of a primary interview with close friends or relatives within a few weeks to a few months after the suicide. Of the remaining 15 cases, the relatives refused an interview in 13, and two suicides were transients with no relatives or friends in St. Louis. In addition to the primary interview, interviews were obtained with other relatives, friends, job associates, clergymen, landladies, bartenders, nurses, attorneys, policemen, and physicians. A total of 305 interviews were obtained, including ancillary interviews on the 15 persons for whom no primary interview was obtained. In addition to these interviews, general hospital records, Social Service Exchange records, police records, and mental hospital records were examined.

The primary interview was a systematic one in which over 95 per cent of the responses were scored as yes or no or with a number. Any positive response was pursued with further questions so that there was a minimum of undescribed positive answers. The interview required an average of over two hours to complete. It covered past and present medical and psychiatric history, personal and social history, family history, and details of the successful suicide and the events which lead up to it. The interview will be described in greater detail in other publications.

As will be described later, the great majority of the suicides fell into one or other of two diagnostic groups, manic-depressive depression and chronic alcoholism. For purposes of the present report it is pertinent to describe the way we arrived at these two diagnoses. The diagnosis of manic-depressive depression was based on responses to questions concerning: (a) a previous history of a manic or a depressive episode with complete remission (12 items in the primary interview); (b) discreteness of the present episode (four items); (c) "medical" symptoms, such as insomnia, anorexia, weight loss, and fatigue (37 items); (d) psychological symptoms, such as feeling blue, loss of interest, psychomotor retardation, diminished sexual drive, low expectancy of recovery, and somatic and nihilistic delusions and delusions of poverty and guilt (84 items); and (e) disturbances in social behavior, such as diminished recreational activity and decreased social contacts (20 items). In addition to these items, age of onset and family history of manic-depressive disease were also considered in arriving at the diagnosis. These criteria are based on our clinical experience and on well documented clinical studies.[11,12] The diagnosis of manic-depressive disease as used in this study includes the diagnoses of involutional melancholia and psychotic depressive reaction. This use of the term to include these entities has been justified by both clinical[11,13] and genetic[14] studies. It is our clinical impression that so-called neurotic depressive reaction is in many instances indistinguishable from manic-depressive depression without delusions or grossly apparent retardation, with regard both to symptomatology and clinical course.[15] When the neurotic depression is clinically different from a manic-depressive depression the neurotic depression turns out to be merely an episode in a preexisting neurosis, for example, a conversion reaction. The latter diagnosis would then be the primary one. Such secondary neurotic depressions did not occur in any of the 134 cases.

Chronic alcoholism was diagnosed in accordance with the definition of Keller,[16] "Alcoholism is a chronic behavioral disorder manifested by repeated drinking of alcoholic beverages in excess of the dietary and social uses of the community and to an extent that interferes with the drinker's health or his social or economic functioning."

**Table 1—Numbers of Persons in Each Diagnostic Group**

| Diagnostic Group | Men | Women | Total Group |
|---|---|---|---|
| Manic-depressive depression | 42 | 18 | 60 |
| Chronic alcoholism | 27 | 4 | 31 |
| Miscellaneous diagnoses | 14 | 4 | 18 |
| Chronic brain syndrome | 4 | 1 | 5 |
| Terminal medical illness | 3 | 2 | 5 |
| Schizophrenia | 3 | 0 | 3 |
| Apparently clinically well | 3 | 0 | 3 |
| Drug addiction | 1 | 1* | 2 |
| Undiagnosed but psychiatrically ill† | 20 | 5 | 25 |
| Total | 103 | 31 | 134 |

* Associated with hysteria (conversion reaction).
† Including five patients about whom there was insufficient information.

This definition is in essential agreement with that of the World Health Organization.[17] There were 12 items in the interview that were useful in eliciting a history of family, job, social, and medical difficulties related to alcoholism. In addition to these items, age of onset, defined as the age at which the person first got into difficulty because of drinking, and a family history of alcoholism were also considered in making a diagnosis. It is not germane to this report to discuss whether alcoholism is a symptom of different diseases or is a disease entity.

The diagnoses were made by two psychiatrists who reviewed the records independently. If there was an unresolved disagreement with regard to diagnosis or if neither psychiatrist could make a definite diagnosis the person was placed in the undiagnosed group. For a person to be diagnosed as suffering from manic-depressive disease he had to have positive responses in at least three of the five categories (a through e) previously listed, in addition to having the clinical picture of the illness.[11,12] To be diagnosed as a chronic alcoholic he had to have at least three positive findings among those listed in Table 4.

## Results

Clinical Diagnoses—In this group of 134 suicides, there were 101 persons who were suffering from one of five specific psychiatric illnesses, five who were suffering from a terminal medical illness in whom there was no definite evidence of psychiatric disease, three who were apparently clinically well, and 25 who were probably psychiatrically ill but in whom a specific diagnosis could not be made (Table 1).

In this report only those aspects of clinical diagnosis directly relevant to the possibility of preventing suicide will be discussed. The three most striking findings concerning diagnosis follow. First, 98 per cent of the total group of persons were clinically ill, 94 per cent of them being psychiatrically ill, and 4 per cent only medically ill. Suicide, at least in this urban area, occurs, therefore, almost exclusively in persons who are psychiatrically ill. Second, and more important in so far as prevention is concerned, 68 per cent of all the

suicides were found to be suffering from one of two diseases—manic-depressive disease or chronic alcoholism. Excluding the 25 undiagnosed cases, 83 per cent of the remaining 109 cases belonged to one or the other of these two categories (Table 2). Those with manic-depressive disease were solely in the depressed phase at the time of their deaths. No person committed suicide while in the manic phase. Third, there was no person in the series who had only an uncomplicated "neurosis" (anxiety reaction, conversion reaction (hysteria), or obsessive-compulsive reaction).[2] This finding is in agreement with that of Jameison who studied hospitalized patients.[3] The only person who was given a primary diagnosis of "neurosis" suffered from drug addiction as well as from conversion reaction.

Since the bulk of the suicide problem resides in manic-depressive disease and chronic alcoholism, the first consideration in attempting to prevent suicide is the clinical recognition of these illnesses. Some salient clinical findings among the 60 persons diagnosed as having manic-depressive disease are shown in Table 3. The recognition of manic-depressive disease depends not only upon the elicitation of its symptoms (Table 3, parts d, e, and f and the dagger footnote) but also on the natural history of the disease. Factors in the natural history which are important in making a proper diagnosis include a history of being psychiatrically well, exclusive of attacks of manic-depressive disease[3]; a history of a previous episode of manic-depressive disease[4]; a discrete episode of relatively recent onset (Table 3, part c), characterized by the symptoms listed in Table 3 (parts d, e, and f); a family history of manic-depressive disease[4]; and, in half the cases, an onset after the age of 40.[11,13,14)5.] The importance of this last point is that the other so-called functional psychiatric disorders, anxiety reaction, conversion reaction, obsessive-compulsive reaction, and schizophrenia infrequently or rarely begin after 40.[11,20-22]

The diagnosis of chronic alcoholism may be made when information is obtained that alcohol is used by the patient in such amounts as to interfere with his personal or social relationships, economic welfare, or his health. In attempting to establish this diagnosis it is often important to obtain a history from the family as well as from the patient. In the present series each of these indexes of alcoholism occurred with a high frequency (Table 4).

Factors Other than Clinical Diagnosis —One of the most striking findings of

**Table 2—Proportion of Persons in Each Diagnostic Group**

| Diagnostic Group | Per cent of Total Group | | | Per cent of Diagnosed Group | | |
|---|---|---|---|---|---|---|
| | Men | Women | Total | Men | Women | Total |
| Manic-depressive depression | 41 | 58 | 45 | 51 | 70 | 55 |
| Chronic alcoholism | 26 | 13 | 23 | 32 | 15 | 28 |
| Miscellaneous diagnoses | 14 | 13 | 13 | 17 | 15 | 17 |
| Undiagnosed | 19 | 16 | 19 | — | — | — |
| Manic-depressive depression +chronic alcoholism | 67 | 71 | 68 | 83 | 85 | 83 |

**Table 3—Prevalence of Selected Symptoms and Other Historical Data in Persons Diagnosed Manic-Depressive Disease**

| Item | Per cent |
|---|---|
| (a) Clinically well, exclusive of attacks of manic-depressive disease | 69 |
| (b) Previous episode of manic-depressive disease | 46 |
| (c) Discreteness of present attack | |
| Duration of present attack six months or less | 57 |
| 12 months or less* | 87 |
| (d) "Medical" symptoms† | |
| Insomina | 88 |
| Anorexia | 82 |
| Weight loss | 80 |
| Low energy, weakness | 74 |
| Fatigue | 71 |
| Constipation | 28 |
| (e) Psychological symptoms | |
| Blue, depressed, sad | 97 |
| Diminished motor activity | 77 |
| Loss of interest | 72 |
| Diminished sexual interest and activity | 61 |
| Undertalkative | 59 |
| Low expectancy of recovery; "black" future | 53 |
| Feeling of being a burden | 44 |
| Indecisiveness | 44 |
| Feeling of worthlessness or marked guilt | 40 |
| Agitation | 38 |
| Personal untidiness | 32 |
| Difficulty in thinking and concentration | 31 |
| Delusions | 27 |
| (f) Disturbances in social behavior | |
| Decreased social and recreational activity | 77 |
| (g) Miscellaneous items | |
| Age of onset 40 and over‡ | 75 |
| Family history of manic-depressive disease | 26 |

* Only 13 per cent of the cases had a duration of the present attack greater than one year. The maximum duration (one case) was four years.

† Other "medical" symptoms, such as headache, palpitation, dyspnea, dizzy spells, abdominal pain, and vomiting, which occur with a high frequency in manic-depressive disease,[11,12] are not listed here because they are less specific in helping to differentiate this illness from other psychiatric diseases. They are, however, important in the recognition of and in the total clinical picture of manic-depressive depression.

‡ Age of onset is the age at the time of the first reported attack of manic-depressive disease.

this study was the high frequency with which these persons communicated their suicidal ideas, by specific statements of intent to commit suicide, by statements concerning their preoccupation with death and desire to die, and by making unsuccessful suicide attempts. These statements were made to family, friends, job associates, and many others. Among the manic-depressives, 68 per cent communicated suicidal ideas, 38 per cent specifically stating they intended to kill themselves; the corresponding figures for the alcoholics were 77 per cent and 61 per cent. In the majority of instances, the suicidal communications were of recent onset (months), repeatedly verbalized, and expressed to a number of persons. These communications of suicidal intent have been described in detail elsewhere.[23]

The age of the manic-depressives appears to be an important factor in evaluating the probability of suicide. Only five out of 60 cases (8 per cent) were under 40.[6] This finding appears even more striking when it is remem-

**Table 4—Prevalence of Selected Drinking Behaviors and Complications in Persons Diagnosed Chronic Alcoholism**

| Item | Per cent |
|---|---|
| Informant thought person drank too much | 94 |
| Daily drinking | 94 |
| Benders | 78 |
| Family objected to person's drinking | 78 |
| Arrests related to drinking | 66 |
| Medical and psychiatric complications of alcoholism | 65 |
| Suicidal person thought he drank too much | 62 |
| Job difficulties related to drinking | 56 |
| Automobile accidents related to drinking | 35 |

bered that half of unselected (selected without regard to suicide) manic-depressive patients become ill for the first time before 40,[11] yet only 8 per cent of the suicides in the present series were under this age. The latter finding, coupled with the fact that half the cases of manic-depressive disease begin before 40 indicates that younger manic-depressives have less tendency to kill themselves than do older ones. The finding that only 13 per cent (two out of 15) of the manic-depressives with an age of onset under 40 killed themselves in their first episode of the disease compared with 68 per cent (30 out of 44) of those over 40 suggests that it is not the number of the attack, but age itself, or its concomitants which somehow increases the tendency toward suicide over the age of 40.

In the manic-depressive group there were 42 men and 18 women, a ratio of 2.3:1. Since manic-depressive disease is said to occur more frequently in women than in men—at least in those hospitalized for the illness,[24,25] it appears that there is a special disposition for male manic-depressives to kill themselves.[7] However, the magnitude of the differential rate for suicide between the sexes does not provide additional confidence in predicting the risk of suicide in an individual man or woman.

The duration of the illness in the chronic alcoholics varied from seven to 46 years in the 21 cases where it could be determined with reasonable accuracy, with a mean and median duration of 20 years. The importance of this finding is that suicide infrequently occurs in the early stages of chronic alcoholism. The danger of suicide in alcoholism is, therefore, largely confined to the later periods of the disease. This should not be taken to signify that all these cases were far advanced, in the sense of having serious medical and psychiatric complications or of being completely "down and out." In the 17 cases in whom reasonably definite information was available, 35 per cent did not have any clear evidence of serious complications (Table 4).

Medical and Psychiatric Care—Persons with manic-depressive disease and chronic alcoholism received a substantial amount of medical and psychiatric care in the year preceding their suicides. Almost three-quarters (73 per cent) of the manic-depressives had received care for their manic-depressive disease within one year preceding their suicides and one-half (53 per cent) had received such care within one month of their suicides (Table 5). In contrast, although the chronic alcoholics received substantial care, they received much less than the manic-depressives: 40 per cent had care for their alcoholism within one year and 22 per cent within one month (Table 5). That the care for both groups was not entirely in the hands of physicians without special training in psychiatry is shown by the findings that 29 per cent of the manic-depressives and 11 per cent of the alcoholics had been examined by a psychiatrist. Additional evidence of the quantity and intensity of care is offered by the findings that 15 per cent of the manic-depressives and 10 per cent of the chronic alcoholics had been in a psychiatric hospital within one year of their deaths, and an additional 11 per cent of the manic-depressives and 6 per cent of the alcoholics had been in general hospitals for symptoms of their psychiatric disease (Table 6).

The difficulties in the psychiatric care of these patients are shown by data concerning the number of persons referred to a psychiatric hospital who did not go, and by the number who killed themselves while still in the hospital or shortly after their discharge. There were 12 manic-depressives (20 per cent of the group) who refused to enter a

**Table 5—Kind of Illness for Which Medical and Psychiatric Care Was Given in the Year Preceding the Suicide**

| Diagnostic Group and Kind of Illness | Prevalence of Care, Per cent | | | |
|---|---|---|---|---|
| | Time Prior to Suicide (Months) | | | |
| | <1 | 1-3 | 3–12 | Total Within 1 Year |
| Manic-depressive disease | | | | |
| Psychiatric illness only* | 44 | 8 | 5 | 57 |
| Psychiatric and medical illness | 9 | 7 | 0 | 16 |
| Total care for psychiatric illness† | 53 | 15 | 5 | 73 |
| Medical illness only‡ | 5 | 2 | 5 | 12 |
| Total care for all illness | 58 | 17 | 10 | 85 |
| Chronic alcoholism | | | | |
| Psychiatric illness only* | 11 | 7 | 7 | 25 |
| Psychiatric and medical illness | 11 | 4 | 0 | 15 |
| Total care for psychiatric illness† | 22 | 11 | 7 | 40 |
| Medical illness only‡ | 11 | 0 | 4 | 15 |
| Total care for all illness | 33 | 11 | 11 | 55 |

* The psychiatric illness referred to throughout the table is manic-depressive disease or chronic alcoholism in each of the diagnostic groups, respectively. The medical illness ranges from care for chronic cardiovascular disease to the treatment for the effects of a suicide attempt.

† The following proportions of each diagnostic group were seen by a psychiatrist within the year: manic-depressive disease, 29 per cent; chronic alcoholism, 11 per cent. The remaining 44 per cent of manic-depressives and 29 per cent of alcoholics who had care for their psychiatric illness within the year were seen by the physicians who did not have special training in psychiatry.

‡ It is not definite whether care for the psychiatric illness was to some extent involved here. In every case of chronic alcoholism, the person was suffering from his psychiatric disease as well as from a medical illness.

**Table 6—Hospitalizations in the Year Preceding Suicide**

| Hospitalizations for Psychiatric Disease* | Manic-Depressives | | Alcoholics | |
|---|---|---|---|---|
| | No. | Per cent | No. | Per cent |
| Psychiatric hospital, prior to suicide | 7 | 12 | 3 | 10 |
| Suicide while in a psychiatric hospital | 2 | 3.4 | 0 | 0 |
| General hospital for psychiatric disease, prior to suicide | 5 | 8 | 1 | 3 |
| Suicide while in a general hospital | 2 | 3.4 | 1 | 3 |
| Total hospitalizations for psychiatric disease | 16 | 27 | 5 | 16 |
| Referred to psychiatric hospital but did not go | 12 | 20 | 1 | 3 |
| Total possible hospitalizations for psychiatric disease | 28 | 47 | 6 | 19 |

* Hospitalizations for primarily medical or surgical reasons are not included in these figures.

psychiatric hospital or whose families refused to permit them to enter, shortly before their suicides (Table 6). In contrast, only one chronic alcoholic (3 per cent of the group) was referred to a psychiatric hospital and did not go (Table 6). The last figure is low because only three other alcoholics were referred to a psychiatric hospital, and each of them entered the hospital. It is striking that within the year prior to death 47 per cent of the manic-depressives and 19 per cent of the alcoholics had either been hospitalized for their psychiatric disease or had been referred to a psychiatric hospital (Table 6).

There were 10 persons in the two diagnostic groups under discussion who killed themselves within eight months after discharge from a psychiatric hospital. Seven of these persons were manic-depressives, and three were alcoholics. The dangers of premature discharge from the hospital are emphasized by these findings, since each of these patients was in the same episode of illness for which he had been hospitalized. It should be noted that vigilance in the hospital is also necessary since four additional manic-depressives and one additional alcoholic killed themselves while in the hospital (Table 6). Of these five patients, two were in a psychiatric hospital and three in a general hospital.

## Discussion

It is our impression that the only generally effective means of reducing the suicide rate is to hospitalize in a closed ward the potentially suicidal person.[8] The problem is one of deciding who is the potentially suicidal person. From the data of the present study, two large subgroups of potentially suicidal persons who are recognizable are those suffering from a manic-depressive depression who communicate their suicidal ideas and those with chronic alcoholism who communicate suicidal ideas. These two subgroups constitute 49 per cent of the total group of 134 suicides. If suicides in these two subgroups (manic-depressives and alcoholics who communicate their suicidal intentions) alone could be prevented, the annual number of lives saved in the United States would be 8,212 (49 per cent of 16,760, the number of persons who committed suicide in the United States in the last reported year.)[27]

These findings suggest that, when a person in either of the above two subgroups[9] comes to the attention of a physician, the physician should recommend immediate hospitalization in a closed psychiatric ward. Before physicians should accept this suggestion as a practical recomendation, however, they would need to know the answer to one further question: How many persons with these two diseases communicate suicidal ideas and do not commit suicide, even though they are not hospitalized? That is, how many persons would physicians hospitalize who did not in fact require hospitalization in order to prevent their suicides? The answer to this question is not known and is an area requiring intensive investigation.

It should be pointed out that there appear to be reasons other than potential suicide for hospitalizing manic-depressive patients. These include marked agitation, malnutrition, weight loss, inability to be kept at home, and ill-advised decisions regarding their marital, job, and social lives.[32] A recent study suggests that one-quarter of manic-depressive patients makes such ill-advised decisions regarding their lives during their illness.[11] There are, therefore, fewer patients hospitalized without justification than would appear from assuming that the only reason for hospitalizing manic-depressive patients is the prevention of suicide.

The difficulties of recommending

**Table 7—Death by Suicide in Manic-Depressive Disease: A Summary of Five Follow-Up Studies**

| Investigator | No. Cases | No. Dead | Per cent Dead | No. Dead by Suicide | Per cent Dead by Suicide | Per cent of Deaths Due to Suicide |
|---|---|---|---|---|---|---|
| Langelüddecke[29]* | 341 | 268 | 78.8 | 41 | 12.0 | 15.3 |
| Slater[30] | 138 | 59 | 42.8 | 9 | 6.5 | 15.3 |
| Lundquist[13] | 319 | 119 | 37.4 | 17 | 5.3 | 14.3 |
| Schulz[31]* | 2004 | 492 | 24.5 | 66 | 3.3 | 13.4 |
| Stenstedt[14] | 216 | 42 | 19.4 | 6 | 2.8 | 14.3 |
| Mean‡ | | | | | | 14.5† |

* Original article not consulted, reviewed in Stenstedt.[14]
† The figure of 14.5 per cent in the text is this mean. Since there is so little variation in the proportion of deaths by suicide despite the great variation in the proportion who died from any cause, it is assumed that had all patients been followed until their deaths the proportion dead by suicide would have remained near 14.5 per cent.
‡ Not weighted for the differing numbers of cases.

closed ward hospitalization for all manic-depressives who have communicated their suicidal intentions, without doing a control study of manic-depressives who have not committed suicide, have been discussed above. However, universal hospitalization might nevertheless be considered for the following reasons. First, our results suggest that the elderly male manic-depressive patient who has communicated his suicidal intentions is an especially serious suicide risk, and that perhaps at least all of these patients require hospitalization. Second, there are five studies which indicate that 14.5 per cent of manic-depressives will kill themselves in one or another episode of the disease (Table 7). If the assumption made in the dagger footnote to Table 7 is valid, then it suggests that the risk of suicide in a depressed episode is larger than is usually assumed. Since the mean number of episodes of manic-depressive disease in approximately a 20-year period is 1.8,[13] the chances of suicide are 8 per cent in any given episode. This latter figure may decrease to from 2 to 4 per cent in a given episode if a whole lifetime instead of 20 years is considered. But even the last figures are too high a death rate to be permitted to occur in manic-depressive disease, which otherwise has such a good prognosis.

There are indications that the possibility of preventing suicide in manic-depressive patients may be even better than in chronic alcoholics. In contrast to the chronic alcoholics, manic-depressives receive more medical and psychiatric care (Table 5); have a discrete episodic illness (Table 3) with a marked and relatively acute behavior change, having a high visibility for concerned relatives; have a short-lived (months) illness with the prospect of a spontaneous (or induced) remission in the vast majority of instances[3,28]; and, are generally much more amenable to the necessary closed ward hospitalization than are alcoholics.

Is education of the general public concerning the symptoms of manic-depressive disease a part of the answer to the prevention of suicide? In this urban area (St. Louis) 73 per cent of the manic-depressives went to a physi-

cian within one year of their suicides for the symptoms of manic-depressive disease. This is a high proportion of the cases and suggests that public education is less needed than are better criteria for hospitalization of such patients when they see a physician. However, the present data have shown that for 20 per cent of the manic-depressives hospitalization was recommended and not accepted by the relatives; therefore, public education along these lines must be considered, and perhaps tried on selected populations. Alcoholism presents a different problem. Although its symptoms are recognizable by the general public, only 40 per cent of these patients had medical or psychiatric care within one year preceding their suicides. This low proportion of the alcoholics seen by a physician is probably related to the chronicity of the disease and to the frequent isolation of advanced alcoholics from their families. If this is the case, public education may not be very helpful in preventing suicide in alcoholics. The high frequency of suicidal communications in the manic-depressives and alcoholics suggests that public education concerning the seriousness of this behavior, at least in the two illnesses under discussion, may be helpful in reducing the suicide rate.

Finally, if we had found that suicide was an impulsive, unpremeditated act without rather well defined clinical limits, then the problem of its prevention would present insurmountable difficulties using presently available clinical criteria. The high rate of communication of suicidal ideas indicates that in the majority of instances it is a premeditated act of which the person gives ample warning. Therefore, there is currently available to the physician information he needs to take an active role in preventing suicide. To take this role, he must be able to diagnose the two illnesses from which the majority of the suicides are suffering and must take a careful history from the family and from the patient as to whether or not the person has communicated suicidal ideas.

## Summary and Conclusions

1. A study of 134 consecutive successful suicides has been made by means of systematic interviews with family, in-laws, friends, job associates, physicians, ministers, and others a short time after the suicide.

2. Some of the major findings which may be helpful in planning a program of suicide prevention included: (a) 98 per cent of the suicides were clinically ill, 94 per cent of them psychiatrically ill; (b) 68 per cent of the total group were suffering from one of two diseases — manic-depressive depression or chronic alcoholism; (c) there was no patient found with an uncomplicated "neurosis" (anxiety reaction, conversion reaction or obsessive-compulsive reaction); (d) 68 per cent of the manic-depressives and 77 per cent of the alcoholics communicated their suicidal intentions prior to their suicides; (e) 62 per cent of the manic-depressives and alcoholics had had medical and psychiatric care for the illness associated with their suicides within one year of their deaths. The manic-depressives had had even more care than did the alcoholics, 73 per cent versus 40 per cent, respectively.

3. Closed ward hospitalization is suggested as the only currently available effective means of preventing suicide.

4. The decision as to whom to hospitalize was discussed and it was pointed out that for the present it seemed most useful to concentrate on attempting to prevent suicide in two groups—the manic-depressives and alcoholics who communicate their suicidal intentions. Extension of the present work to include manic-depressives and

alcoholics who have not committed suicide is necessary in order to establish the over-all frequency of communication of suicidal intent in these diseases.

5. It was emphasized that all physicians should know the diagnostic features of manic-depressive disease and alcoholism, and should ask the patient's family as well as the patient concerning suicidal communications.

## Footnotes

1. We wish to thank the coroners for the City of St. Louis (Patrick J. Taylor) and for St. Louis County (Arnold J. Willmann and Raymond I. Harris) and their staffs (Mary Alice Quinn, Mildred B. Saemann, and Rose Marie Algarda) without whose cooperation this study would not have been possible.

2. The 25 undiagnosed persons will be discussed in detail in another report. It is only necessary to state here that in no case was there a serious possibility that one of these three "neuroses" was the primary diagnosis.

3. To make the diagnosis of manic-depressive disease it is not essential that the patient be psychiatrically well prior to the onset of the illness or between attacks. This finding, however, greatly increases the likelihood of the diagnosis of manic-depressive disease being correct. In the present study 69 per cent of the persons had no history of other psychiatric illness, 23 per cent had previously used alcohol to excess, and 8 per cent were reported to have been "nervous" all of their lives. Since this last figure is consistent with the reported prevalence of "neurosis" in the general population,[18,19] it suggests that there is no special relationship to manic-depressive disease. It should be emphasized that the symptoms of lifelong nervousness were not like the symptoms found in the manic-depressive attacks in these "nervous" patients.

4. Although these findings may be expected in only half or less of the cases, their occurrence increases the likelihood of the present episode being manic-depressive disease.

5. In our series, 75 per cent of the cases began after 40. This may be due to some special characteristic of manic-depressives who commit suicide or to the fact that the data were collected in some cases from informants who had not known the suicidal person for his whole life.

6. This difference for the chronic alcoholics was much less striking and therefore of relatively little value in making predictions about individual patients. Nine of the 31 alcoholics (29 per cent) were under 40 at the time they committed suicide.

7. In the present study the ratio of male to female alcoholics is 6.8:1 but this finding is not helpful in deciding about potential suicides in alcoholics, since 6.8:1 ratio is not appreciably different than the estimated 5.5:1 ratio for men to women alcoholics in the United States.[26]

8. There are no critical data in the literature to support the ideas that drugs, electric shock therapy, or psychotherapy are effective in preventing suicide. Until such data are forthcoming hospitalization seems to be the soundest policy. It is not our purpose to discuss the treatment of the suicidal patient once he is hospitalized except to reemphasize the dangers in discharging such patients too soon.

From the data of this study the ideal way to prevent the majority of suicides appears to be the prevention of manic-depressive disease and alcoholism. Since there is no known way to prevent either of these diseases, this point will not be discussed further.

9. From the findings of this study it is highly suggestive that suicidal communications in the "neuroses" (anxiety, conversion and obsessive-compulsive reactions) do not herald a successful suicide, although they indicate a serious disturbance. As a result, once a proper clinical diagnosis is made, the suicidal communication can be evaluated with a great deal more confidence as to its seriousness or lack of it.

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