Computer Diagnosis in an Automated Record Keeping System:

A Study of Clinical Acceptability

Robert L. Spitzer, M.D. and Jean Endicott, Ph.D.

Dr. Spitzer is Director, Evaluation Section, Biometrics Research, New York State Department of Mental Hygiene, New York State Psychiatric Institute; and Assistant Clinical Professor, Department of Psychiatry, Columbia University. His address is 722 West 168th Street, New York, New York 10032.

Dr. Endicott is Co-Director, Evaluation Section, Biometrics Research, New York State Department of Mental Hygiene; and Research Associate, Department of Psychiatry, Columbia University.


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This paper describes our initial experience with a computer program for psychiatric diagnosis, DIAGNO III, which has been developed for routine use in an automated psychiatric information system, the Multi-State Information System for Psychiatric Patients.

BACKGROUND

The original impetus for using computers to make psychiatric diagnoses arose from the well known limitations of the clinical method for arriving at a psychiatric diagnosis, especially its unreliability. The computer seemed an ideal instrument for integrating the raw data of clinical judgment. First of all, there is the value of necessarily perfect reliability in the sense that given the same data, a computer program will always yield the same diagnosis. Secondly, a computer program can utilize rules developed from a larger and more diverse sample of actual patients than any single clinician can command.

The earliest work in psychiatric computer diagnosis (1, 2, 3, 4) utilized data collected in specific research studies that were designed to explore the potential of various models for computerized psychiatric diagnosis rather than to demonstrate their practical value as part of an automated psychiatric information system. Most investigators in computer diagnosis have used various statistical models, such as Bayes and discriminant function. These statistical procedures require data on a sample of patients for each of whom the diagnosis is known and for each of whom a series of measures are available. From this sample, generally referred to as the "developmental" sample, an empirical classification scheme is devised. Using each subject's observed series of scores, the scheme quantifies (as a probability by the Bayes method and as a distance by the discriminant function method) how "close" the subject is to each diagnostic group. The subject is assigned the diagnosis to which he is "closest."

A third model, called the logical decision-tree approach, has been employed by the authors (3, 4). In this model the computer program consists of a sequence of questions, each of

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which is either true or false. The truth or falsity of each question rules out one or more diagnoses and determines which question is to be examined next. Some questions may specify the presence of a single sign or symptom, others may specify that a numeric score is in a certain range, and still others may specify a complex pattern of both signs and scores. In our use of this model for psychiatric diagnosis, even seemingly simple decisions, such as whether there is evidence for an organic brain syndrome, take into account ratings on several different items and rule out other possible diagnoses which could account for disturbances which suggest an organic brain syndrome. Thus, a mild degree of orientation or memory disturbance in the presence of hallucinations or delusions in a young person who is not abusing alcohol or drugs, is deemed more likely indicative of a functional psychosis than an organic brain syndrome. However, the same picture in an older person, is considered better evidence for an organic brain syndrome due to cerebroarteriosclerosis.

Thus the logical decision tree approach is similar to the differential diagnostic method used by clinicians in making a psychiatric diagnosis. It also has the obvious advantage over the two statistical models in that it does not require a data base and is not dependent upon the specific characteristics of a developmental sample. Furthermore it does not make the assumption that the diagnostic categories are mutually exclusive and that a patient can have only one diagnosis. In a previous study (5), these three models for computer diagnosis were compared using the same data all collected with a research scale. All three models performed equally well (in terms of agreement with clinical diagnosis) on a large cross-validation sample which was sampled from the same population as the developmental sample (5). However, the logical decision tree method performed better than the two statistical approaches on a sample drawn from a totally new population.

The logical decision tree approach has been used by us in two earlier computer programs, DIAGNO I (3), and DIAGNO II (4), with rating scales primarily designed
for research studies. DIAGNO I was limited to current status information and only made one of 27 standard diagnoses. DIAGNO II utilized current status as well as some historical information and made one of 46 diagnoses. For both programs, the agreement between the computer diagnoses and the clinical diagnoses made by experts using the rating scale protocols, was as good as that between the diagnoses of the experts. The successful use of these two programs in various research projects for describing samples of subjects, selecting subjects for experiments, and in epidemiological and cross-cultural studies led us to employ the same model in DIAGNO III, using data collected routinely in the Multi-State Information System.

DEVELOPMENT OF DIAGNO III

DIAGNO III was developed to assist the three main consumers of automated record keeping systems: the clinician who supplies a good deal of the input and wants help in the understanding, management, and treatment of his patient; the administrator who needs summary information on patient characteristics for planning, reporting, and evaluation; and the researcher who wants standardized procedures for selecting homogeneous or stratified subgroups for special studies. We were particularly concerned with the needs of the clinician, as in our day to day work at the New York State Psychiatric Institute we found the psychiatric residents who supplied mental status and psychiatric history information were quite dissatisfied with the output that they were then receiving. This output was limited to an English language narrative which rendered their precoded ratings into awkward and stilted, if correct, English statements, and a graphic portrayal of 20 factor analytically derived summary scale scores from the mental status form. Our hope was that the computer diagnosis would be of aid to them in their differential diagnosis of their patients and that this in turn would increase their motivation to make
careful ratings that describe their patients.

The first version of DIAGNO III used data from the two major clinical intake forms of the Multi-State Information System: the Mental Status Examination Record (MSER) (See Appendix), and the Psychiatric Anamnestic Record (PAR). The MSER is a four-page form designed to enable a rater to record the results of a mental status examination. Its coverage is divided into the following sections: attitude toward rater, reliability and completeness of information, appearance, motor behavior, general attitude and behavior, mood and affect, quality and content of speech and thought, somatic functioning and concern, perception, sensorium, cognitive functions, judgment, potential for suicide or violence, insight and attitude toward illness, overall severity of illness, and change in condition during the past week. The rater is encouraged to consider all of the items on the MSER when conducting his examination. The evaluation covers behavior and symptoms which occurred during the week prior to, and including the day of evaluation, whether the evaluation is done on admission or at a later time.

The PAR is a four-page form designed to cover the information that is generally included in a psychiatric case history. Its coverage includes the following: characteristics of current condition, psychiatric disturbance in family, previous treatment for psychiatric disturbance, childhood problems, adolescent and adult friendship patterns, education and intellectual capacity, occupational history, adolescent and adult heterosexual adjustment, marital history, physical health, personality traits, and history of arrests.

Because of the extensive coverage of these two documents, the program is sufficiently complex to make as many as 75 discrete psychiatric diagnoses listed in the American Psychiatric Association’s Diagnostic and Statistical Manual, Second Edition. The program is also capable
of making multiple diagnoses on a given patient, when appropriate. The output lists the
most likely diagnoses as well as other diagnoses for which there is some evidence and which
should also be considered. Within the "most likely" category, multiple diagnoses may appear
with the following limitations: Transient Situational Disturbance, Conditions without Manifest
Psychiatric Disorder, Nonspecific Condition and No Mental Illness each excludes all other con-
ditions; at most, one functional psychosis, personality disorder, or neurosis is noted; when
a functional psychosis and/or a personality disorder is diagnosed, neurotic disorders are
excluded (but still may appear in the category "some evidence").

In outputting the diagnoses, the conditions are listed in the following order, which roughly
corresponds to decreasing degrees of severity: Organic Brain Syndromes, Functional Psychosis,
Sexual Deviations, Alcoholism and Drug Addictions, Personality Disorders (arranged in order
of decreasing severity), Neurotic Disorders (arranged in order of decreasing severity), Psycho-
physiologic Disorders, Mental Retardation, Conditions without Manifest Psychiatric Disorder
Nonspecific Conditions and No Mental Illness.

The DIAGNO III program is written in Fortran IV, for the IBM 360 system. The initial
version was developed on an ad hoc basis by expanding the logic of DIAGNO I and II. The
program was modified successively using data from over 300 newly admitted inpatients to the
Washington Heights Community Service. For each case, the clinical diagnosis, the raw data
of the MSER and PAR, and the DIAGNO III output were examined and changes made whenever
we felt that the data in the MSER and PAR justified a modification in the logic. With each
successive revision we again looked at the data for the 300 developmental cases until we
concluded that further changes would be of little use.
It soon became apparent, that while all of the facilities in the system were using the MSER, only a few of the facilities decided to use the PAR. We therefore modified the program so that it would be possible to go through the decision tree with the MSER data alone. Many diagnoses, particularly the personality disorders, cannot be made without the historical information contained in the PAR. Also, brain syndromes could no longer be divided into acute versus chronic. And finally, some of the subtypes of schizophrenia had to be combined into "Schizophrenia, Unspecified type" and some specific affective illnesses combined into "Psychotic Depressive Mood Disorder." The modified program, called DIAGNO III-MSER, thus makes only 42 diagnoses. A schematic flow chart of the logic of the program with the 42 diagnoses is shown in Figure 1.

The diagnoses made by the modified program were compared with those made by the full DIAGNO III program, on several groups of newly admitted inpatients. The agreement between the two sets of diagnoses was extremely high and to our surprise the agreement between diagnoses of the modified program and the therapists' diagnoses was as high as that between the full program and the therapists' diagnoses. Apparently, for newly admitted inpatients, most of the diagnostic variance is accounted for by the mental status findings and the historical information contained in the PAR contributed as much error as useful information. The relative unimportance of historical information for diagnosis on newly admitted inpatients was also reported by Simon, et al (6) in a study of contrasting diagnostic practices in this country and the United Kingdom.

**CLINICAL ACCEPTANCE OF DIAGNO III-MSER OUTPUT**

The reaction of clinicians to the initial computerized diagnostic output was considerably less than enthusiastic, at least at our own facility. In discussions with clinicians, they repeatedly indicated that merely having the computer's diagnoses, without any understanding
of how the computer arrived at its diagnoses, was not very helpful. We therefore further modified the program so that following the diagnostic output, the program indicates the logic that it used to arrive at the main diagnosis. The logic is presented in terms of the actual ratings made by the clinician. Thus, if a functional psychosis is suggested because of ratings of delusions, hallucinations, and moderate incoherence, the output notes this under a statement, "FUNCTIONAL PSYCHOSIS IS STRONGLY SUGGESTED BY RATINGS OF DELUSIONS, AND HALLUCINATIONS (IN THE ABSENCE OF DRUG ABUSE OF A HALLUCINOGEN) AND AT LEAST MODERATE INCOHERENCE." Similarly, when a calculated index, such as an index of depressive syndrome, is the basis for a diagnosis, the output notes the items included in the index, the critical value, and the patient's score on that index. An example of the DIAGNO III-MSER output with the logic for the main diagnosis is shown in Figure 2.

The final program utilizing the MSER alone and with the added computer rationale for making the diagnosis has been evaluated in a study of 77 consecutive admissions to the Washington Heights Community Service of the New York State Psychiatric Institute. The clinicians responsible for completing the MSER and making the clinical diagnoses included eight first year residents, four psychology interns, three social workers and one medical student. This study was conducted prior to the program becoming operational throughout the Multi-State System and none of the clinicians had seen examples of the output prior to the study. The purpose was to determine the level of agreement with therapists' diagnoses, the sources of disagreement, and whether or not the output was judged by the clinicians to be of assistance in differential diagnosis.

Each clinician was personally interviewed regarding each of his patients by a research
assistant, rather than one of the senior authors, in an effort to reduce any tendency that the
therapist might have to avoid criticizing the work of the authors. She first determined the
clinician's current main diagnosis (which sometimes was changed from the initial diagnosis)
and then showed him the computer output from his MSER completed on admission. The
clinician was asked to indicate the level of diagnostic agreement between his main diagnosis
and the computer's main diagnosis using one of the following five levels: "exactly the same;"
"same major diagnosis (e.g., Schizophrenia, Neurosis);" "just as reasonable as mine;"
"wrong but not completely unreasonable;" "and "wrong and practically nothing to support it."
Whenever the clinician judged that the computer diagnosis was wrong, he was asked to study
the logic used by the computer and then to specify why the computer gave an incorrect
diagnosis using the following categories: "I knew things about the mental status that could not
be recorded on the MSER;" "I had historical information that the computer didn't get;" "I
made an error in filling out the MSER (e.g., omitted something or rating too high);" "I
obtained additional mental status information after I filled out the MSER;" and "I disagree with
the logic of the computer." He was asked to give details when he noted one of those
categories.

Finally, the clinician was asked to indicate if he found the computer output helpful in
assisting in the differential diagnosis of the patient.

RESULTS

As can be seen in Table 1, in 71% of the cases the computer diagnoses were judged to be
either in "exact agreement," "agreement for the same major diagnosis," or "just as reasonable
as mine." Twenty eight percent were judged as being "clearly wrong."

In examining the cases judged "just as reasonable as mine," the only disagreement in half
TABLE 1
Clinician’s Judgment of Degree of Agreement Between His Main Diagnosis and that of the Computer (N=77)

<table>
<thead>
<tr>
<th>%</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>45</td>
<td>Exactly the same</td>
</tr>
<tr>
<td>71</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>Same major diagnosis</td>
</tr>
<tr>
<td>13</td>
<td>Just as reasonable as mine</td>
</tr>
<tr>
<td>22</td>
<td>Wrong but not completely unreasonable</td>
</tr>
<tr>
<td>28</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Wrong and practically nothing to support it</td>
</tr>
</tbody>
</table>
of them was in the order given to the primary and the secondary diagnosis. For example, the clinician in one case diagnosed the patient as having a Neurotic Depression with a secondary diagnosis of Alcoholism. The computer, because of its rules for ordering diagnoses, reversed the order.

In examining sources of disagreement for those cases where the clinician judged the computer clearly wrong there was often more than one possible reason. However, in no case was it because the MSER form itself did not contain an essential item descriptive of the current mental status. In 43% of the cases judged "clearly wrong," the clinician attributed the disagreement, at least in part, to his knowledge of historical information not available to the computer. This information was often of a previous psychotic episode, such as schizophrenic or manic-depressive psychosis, or of such a nature that it would probably not have been recorded on any standardized history form, such as psychosis following cardiac surgery. In 18% of the cases judged "wrong," the clinician readily admitted that he had made an important error in filling out the form. The most common errors were failure to record critical information that he knew at the time. In only 14% of the cases did the clinician attribute the disagreement, in part, to having obtained additional information after he completed the MSER, e.g., knowledge that the patient had been abusing a drug. In 21% of the cases, the clinician questioned the logic that the computer used to arrive at its diagnosis. Examples include the computer diagnosing a psychotic depression based on marked psychomotor retardation when the clinician limited his use of that diagnosis to when a patient is "overtly psychotic," and the computer diagnosing an organic brain syndrome when the clinician considered the disorientation to be secondary to a dissociative state.

For 71% of the cases, the clinician stated that the output was helpful in differential
diagnosis. Reasons given included such comments as, "Helped demonstrate a logical and structured approach to diagnosis," "Confirmed my suspicion of an organic brain syndrome," and "Intellectually interesting to see how a computer could approach this data." Several therapists commented favorably on the listing of diagnoses to be considered, particularly when evidence for a possible organic brain syndrome was noted. Some clinicians found it helpful when their diagnosis was confirmed, while other clinicians found it useless under the same circumstances as it offered no additional information. There was great variability between the clinicians. Some clinicians found it helpful for all of their cases, even when it disagreed with them, whereas some clinicians found it of little value in any of their cases. In one instance, a therapist expressed a generally negative attitude towards the use of computers in diagnosis and in psychiatry in general, and stated that they were not helpful at all even though in all of his cases there was very good agreement between his diagnoses and the computer's.

**ADMINISTRATIVE AND RESEARCH USE OF DIAGNO III-MSER**

To date we can only report on the potential uses of the DIAGNO III-MSER output for administrative and research use.

For planning or reporting purposes, administrators often are required to compare the characteristics of patients being treated in different facilities or within subunits of a given facility. Despite the well known limitations of the standard psychiatric nomenclature, it is still the main method used for summarizing patients' clinical characteristics. However, the discrepancies in diagnostic practice, even between well trained clinicians, severely limits the usefulness of such comparisons. Programs are now operational which tally the diagnostic frequency distribution for an entire facility for the computer diagnosis. A
comparison of the computer distribution of diagnoses (including multiple diagnoses) with the clinical distribution for a group of unselected consecutive admissions to two facilities in the Multi-State System provides some evidence that the uniform criteria applied by the computer program gives a more meaningful description of the relative diagnostic frequencies than do the clinical diagnoses. (Table 2).

Facility A is a community mental health center in an urban area whereas facility B is a voluntary hospital in an urban area that specializes in the treatment of young adult patients with intensive psychotherapy. A comparison of the distributions in facility A shows that there is remarkable similarity between the clinical and the computer diagnoses. On the other hand, the same comparison in facility B shows greater discrepancy, particularly for Drug Dependence where the clinicians never reported that diagnosis. If an administrator had to rely on the reported clinical diagnoses in facility B, he almost certainly would seriously underestimate the prevalence of drug problems. If he were interested in a comparison of the prevalence of schizophrenia in the two facilities, he might well exaggerate the true difference if he relied on the clinical difference of 29% (60-31) as compared with the computer difference of only 9 percent (48-39).

Administrators interested in supervising the diagnostic practices of clinicians in their facilities must now rely on having a more senior clinician supervise or review every case to detect biases or gross errors in judgment. It has been suggested that cases in which the computer diagnosis was markedly discrepant with the clinical diagnosis could be flagged so that a supervisor could focus on those cases in which the recorded mental status and the recorded clinical diagnosis are at variance according to the computer diagnosis rules. This kind of monitoring could lead to better teaching of diagnosis as well as to information which would be of value
<table>
<thead>
<tr>
<th>Condition</th>
<th>Facility A</th>
<th></th>
<th>Facility B</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Computer %</td>
<td>Clinical %</td>
<td>Computer %</td>
<td>Clinical %</td>
</tr>
<tr>
<td>Brain Syndrome</td>
<td>33</td>
<td>37</td>
<td>8</td>
<td>5</td>
</tr>
<tr>
<td>Schizophrenia</td>
<td>39</td>
<td>31</td>
<td>48</td>
<td>60</td>
</tr>
<tr>
<td>Affective Psychoses</td>
<td>1</td>
<td>4</td>
<td>4</td>
<td>7</td>
</tr>
<tr>
<td>Alcoholism</td>
<td>11</td>
<td>7</td>
<td>5</td>
<td>1</td>
</tr>
<tr>
<td>Drug Abuse</td>
<td>9</td>
<td>6</td>
<td>17</td>
<td>0</td>
</tr>
</tbody>
</table>
in improving the computer algorithms for diagnosis.

Some potential research uses for this program include studies of the diagnostic practices of clinicians, and selection of patients for drug studies or for studies of social or physiological correlates of different diagnostic groups. Yet another research use which we have discussed elsewhere (7), which might be of great value to the clinician, is the development of computer programs for treatment-relevant typologies which would use modifications of the standard nomenclature.

DISCUSSION

With the data presented in this paper, one might well ask whether the computer generated diagnoses have sufficient validity to warrant their use as an aid in differential diagnosis or by administrators and researchers. In the study of the clinical acceptance of the 77 cases reported here, there is no way of determining how often both computer and clinician, although they agreed, perhaps made an incorrect diagnosis. However, in another study reported elsewhere (8), we examined this problem by having an independent assessment of the patient made by the senior author. Of the 100 cases studied, the computer and the clinician were in substantial agreement on 65 cases, and in 56 of these cases, the senior author concurred. In four of the other nine cases, the computer and therapist diagnoses seemed clearly wrong due to a poor judgment made by the clinician. Of the five remaining patients a good case could be made for either of the three diagnoses. Of the remaining 35 cases where the computer did not agree with the clinician, it seemed that in 20 of these cases the computer diagnoses would have been helpful to the clinician in his differential diagnosis. Thus, there is some evidence to suggest modest overall validity of the computer generated diagnoses if one uses an expert's clinical judgment as the criterion measure.
On the other hand in the above study as well as in others (9), we have found that there is considerable variability in the validity for different diagnostic groups. There was good agreement for the broad categories of schizophrenia, organic brain syndrome, alcoholism, and drug dependence. The agreement for all of the depressive disorders (including neurotic depression) was lower and there was hardly any agreement on the psychotic affective disorders (including all of the manic depressive illnesses).

How can the validity of a program such as DIAGNO III-MSER be improved? First of all, like any other program, it can do no better than the data it receives. Training in good clinical examination and proper use of descriptive terminology will eliminate a number of the sources of error in the eventual output. Secondly, the addition of some critical historical information, more selective than that in the PAR, would undoubtedly help. In our view, the most essential requirement for significant improvement in the output, however, requires greater clarification of the criteria for classifying patients. Explicit criteria for making diagnoses are rarely taught in this country. An example of an attempt to specify explicit criteria for diagnoses for research purposes, that lends itself readily to computerization, is the work of the Renard Hospital group in St. Louis (10).

One of the stated goals of all of the automated record keeping systems in psychiatry is to assist the clinician in his understanding and treatment of his patients. Unfortunately, it is easier to provide output which is of interest and help to administrators and researchers than it is to provide output to the clinicians who supply much of the input. We believe that we have demonstrated that the computer can be of some assistance to the clinician by suggesting alternative diagnoses along with the rationale for the suggestions. The emphasis on differential diagnosis is timely as there has been a revival of interest in clinical diagnosis in recent years in this
country, particularly with the advent of specific treatments, such as the phenothiazines for schizophrenia, lithium for manic depressive illness, and the antidepressants for the non-manic affective disorders.

It is unlikely that many readers of this paper have a generally negative view of computers and their potential contribution to psychiatry. However, it should be noted that many people view with alarm the applications that we have been discussing, fearing that it will inevitably lead to stifling of creativity, imposition of external controls, and the creation of new medical legal questions that will only complicate rather than assist us in the treatment of the mentally ill. Certainly the diagnostic recommendations made by the computer, which in DIAGNO III-MSER are clearly labelled as "INTENDED TO SERVE AS AN AID IN THE DIFFERENTIAL DIAGNOSTIC PROCESS" should in no way relieve the clinician of the ultimate responsibility of making the official diagnosis himself.
REFERENCES


(2) Smith W: A model for psychiatric diagnosis. Arch Gen Psychiatry 14: 521-529, 1966


Schematic Flow Chart for Diagno III Mser Program
THE INFORMATION CONTAINED ON THE MENTAL STATUS EXAMINATION RECORD WAS ANALYZED BY MEANS OF A COMPUTER PROGRAM, DIAGNOIII-MSER, VERSION 2, NOVEMBER 1972. THE RESULTS OF THIS ANALYSIS ARE GIVEN BELOW AND ARE INTENDED TO SERVE AS AN AID IN THE DIFFERENTIAL DIAGNOSTIC PROCESS. BECAUSE THIS PROGRAM DOES NOT HAVE HISTORICAL INFORMATION, SOME DIAGNOSES CANNOT BE MADE (E.G., PERSONALITY DISORDERS). ALSO, ALL BRAIN SYNDROMES ARE CALLED ACUTE. IN ADDITION, SOME SCHIZOPHRENIC SUBTYPES ARE CLASSIFIED AS 'SCHIZOPHRENIA, UNSPECIFIED TYPE' AND SOME SPECIFIC AFFECTIVE ILLNESSES ARE CLASSIFIED AS 'PSYCHOTIC DEPRESSIVE MOOD DISORDER'. A MORE DETAILED AND ACCURATE DIAGNOSTIC EVALUATION IS POSSIBLE BY SUBMITTING A PSYCHIATRIC ANAMNESTIC RECORD ON THIS PATIENT, WITHIN TWO WEEKS, PROVIDING THIS MSER IS STORED ON THE DATA BASE.

PATIENT IDENTIFICATION NUMBER- 13125

THE MOST LIKELY DIAGNOSIS IS-

295.3 SCHIZOPHRENIA, PARANOID TYPE

HOWEVER, THE FOLLOWING CONDITION(S) SHOULD ALSO BE CONSIDERED-

293.0 PSYCHOSIS WITH CEREBRAL ARTERIOSCLEROSIS

SUMMARY OF BASIS FOR COMPUTERIZED MAIN DIAGNOSIS BASED ON MSER RATINGS

A MAIN DIAGNOSIS OF SCHIZOPHRENIA IS MADE BECAUSE

NO DEFINITE DIAGNOSIS OF AN ORGANIC BRAIN SYNDROME COULD BE MADE; HOWEVER AN ORGANIC BRAIN SYNDROME SHOULD BE CONSIDERED BECAUSE OF RATINGS OF

-ATTENTION DISTURBANCE
-TOO DISTURBED TO TEST MEMORY OR ORIENTATION

FUNCTIONAL PSYCHOSIS IS STRONGLY SUGGESTED BY RATINGS OF
-DELUSIONS
-MARKED INAPPROPRIATE BEHAVIOR
-AT LEAST MODERATE FLATNESS OF AFFECT
-AT LEAST MODERATE INAPPROPRIATE AFFECT
-AT LEAST MILD INCOHERENCE
-MARKED IRRELEVANCE
-A SCORE ON AN INDEX WHICH COMBINES UNCOOPERATIVE, WITHDRAWN, INAPPROPRIATE, SUSPICIOUS AND ANGRY BEHAVIOR, AND INABILITY TO FUNCTION IN GOAL DIRECTED ACTIVITIES, IN A PERSON OVER AGE 20, CRITICAL VALUE = 19, PATIENT'S SCORE = 29
-A SCORE ON AN INDEX WHICH COMBINES WITHDRAWN BEHAVIOR, FLATNESS OF AFFECT, INAPPROPRIATE BEHAVIOR, INAPPROPRIATE AFFECT, INCOHERENCE, IRRELEVANCE, LOOSENING OF ASSOCIATIONS, CONCRETENESS OF THOUGHT, IDEAS OF REFERENCE, BIZARRE THOUGHTS, DEPERSONALIZATION AND DEREALIZATION, CRITICAL VALUE = 25, PATIENT'S SCORE = 39

AN AFFECTIVE DISORDER IS RULED OUT BECAUSE SCORES ON INDICES OF THE DEPRESSIVE AND MANIC SYNDROMES ARE TOO LOW

PARANOID TYPE BECAUSE OF RATINGS OF
-DELUSIONS OF PERSECUTION
-MARKED SUSPICICUSNESS

*******************************************************************************
Appendix, Copy of the Mental Status Examination Record (both sides)
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