Developing an efficient clinical information system for a comprehensive psychiatric institute: II. Initial evaluation form

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This paper describes the objectives, design, organization, content, evaluation, and implementation of the initial evaluation form, first component of a comprehensive psychiatric institute's clinical information system. Major features of this effort are the involvement of a large number of clinicians in the form's development, the use of complementary narrative and standardized components, the use of an expanded DSM-III multiaxial diagnostic format, pilot testing with over 1,000 patients, the evaluation of the form's usefulness and interrater reliability, the form's computerization, facilitating data retrieval and coordination with other institutional data bases, and the form's monitoring.

A comprehensive assessment of a patient's condition constitutes the logical basis for the rational formulation of a plan for treatment. Furthermore, since at the Western Psychiatric Institute and Clinic (WPIC), as in many other psychiatric facilities, a patient gains admission to inpatient or outpatient care through a psychiatric evaluation at an entry station, the initial evaluation form (IEF) was selected as the most appropriate starting point for the design and implementation of the institute's clinical information system (CIS). Since work on the design of the IEF has been virtually completed, it will be used here to illustrate the developmental process planned for all components of the CIS.

The planning of the IEF benefited from previous thinking and experience on computerized information systems at the Department of Psychiatry of the University of Pittsburgh, both at WPIC (Dow, 1975; Kupfer,

Levine, & Nelson, 1976) and the Pittsburgh Child Guidance Center (Henderson, Magnussen, Snyderman, & Homann, 1975). Other antecedents included some integral evaluation batteries for general psychiatric patients, such as the KDS system (Kupfer & Detre, 1971) and the Comprehensive Psychiatric Assessment Schedule developed by Mezzich (Note 1), as well as the patient data system developed by Dow and the WPIC information systems program in 1975 for the computerized collection and retrieval of demographic and financial information.

OBJECTIVES

Through questionnaires and discussions with potential users throughout WPIC, a set of user objectives was developed for the initial evaluation procedure. These users can be classified into patient evaluators, educators, treatment program staff, researchers, and administrators.

Objectives identified for patient evaluators include improvement of the patient assessment process through the establishment of guidelines for narrative description and standardized ratings of key clinical data, more efficient retrieval of previous initial evaluation data (via an on-line terminal in the assessment area), speeding up and optimizing a new evaluation, enhancement of the appropriateness and accuracy of treatment program assignment, and obtaining systematic feedback on the quality of the evaluation and the appropriateness of dispositions made.

Objectives for the staff of the treatment program receiving the patient include the availability of reliable and accurate evaluation information useful for making

A number of individuals at the Western Psychiatric Institute and Clinic have contributed ideas and work in the design and implementation of the Initial Evaluation Form. Particularly helpful in the initial planning and design stages were our colleagues on the clinical information system committee: R. Cohen, M. A. Darragh, T. Detre, N. French, P. Henderson, S. Hill, G. Hogarty, G. Huber, M. Kovacs, D. Kupfer, D. O'Donnell, V. Romoff, G. Roy, D. Wagener, and J. Wolford. Essential roles in the implementation of the IEF are being played by our collaborators in the Clinical Information System Group (G. A. Coffman, S. Goodpastor, and L. M. Axelsson) and in the Diagnostic and Evaluation Center (B. Claypoole, D. Cox, S. Dacheille, C. Davis, M. Davis, K. Evanczuk, E. Hazlett, R. Mathias, M. Reffner, S. Repta, R. Ruggieri, L. Sereles, J. Van Dyke, H. Capparelli, M. Ganguli, D. Spiker, and R. Trivus). M. Maloney has provided competent and gracious assistance with the layout and printing of the form.

initial clinical management decisions, determining which additional assessments are necessary, preparing the treatment plan, and serving as a baseline to describe treatment course and outcome.

Objectives for educators involve the provision of structure and guidelines for a comprehensive psychiatric assessment conducted by trainees and the facilitation of supervision and systematic feedback to the clinical evaluators on the assessments made.

Objectives for researchers involve the efficient identification of patients appropriate for research protocols at the time of initial contact through a computerized procedure that obviates a tedious, error-prone manual search through the charts of many patients. Objectives also involve the availability of the IEF data base for clinical and epidemiological studies.

Objectives for administrators include the availability of systematic and readily retrievable data on the number and types of patients applying for care and admitted to the various treatment programs available. This can assist in the planning and monitoring of clinical services, as well as in the preparation of statistical reports required by governmental and other external agencies.

DEVELOPMENT

Selection of Informational Items and Sections

One of the most important aspects of the development of the IEF was determining which data to collect and how to collect them. A questionnaire facilitated the participation of WPIC staff in this process. It contained a brief introduction, samples of narrative and standardized items, and a questionnaire. For each prospective narrative section (e.g., history of present illness), the following questions were formulated: Is it useful? Is it well evaluated currently? And is it easily evaluated in an initial evaluation setting? For each of the prospective standardized items (e.g., age, presence of depressive delusions), the following questions were posed: Is it irrelevant or is it useful as an exclusion or inclusion criterion for your program? Is it useful for making management decisions? And is it useful for providing a concise description of the patient's clinical condition?

Visits were then scheduled with 38 programs, including clinical evaluation, clinical treatment, clinical research, nonclinical research, and administrative groups. The visits were planned to explain the objectives of the CIS and the IEF, invite comments and suggestions, introduce the questionnaire, and answer questions. Typically, each visit lasted 1 h and involved the participation of two or three program members representing various professional backgrounds. A second visit was requested by some programs interested in clarifying aspects of the questionnaire and their relationship to initial patient evaluation.

Seventy-eight complete individual questionnaires (all but one of all questionnaires distributed) were received,

and their structured and narrative responses were analyzed.

Most of the proposed narrative sections were perceived as quite useful in principle. However, several were seen as not well evaluated at that time, especially the sections on personal and social history and the review of systems. Also, some sections (e.g., extensive family history), although useful in general, were seen as not easily assessed at the initial evaluation point, but as more appropriate for a "second phase" of the evaluation of the patient at WPIC.

In regard to the proposed standardized demographic items, it was felt that additional work was needed to make them more readable. Most proposed items were considered useful, and there were a number of suggestions to add additional items (e.g., members of the household) and to modify the scale of some existing items (e.g., assessment of occupation, education, and social class).

Almost all of the proposed symptom checklist items were seen as useful for providing a concise description of the patient. The perceived usefulness of these items for management purposes was only slightly lower. With respect to the purpose of selecting patients for specific programs, most items were seen by fewer than half of the respondents as having such value for their program. Several additional items were suggested, especially to make the symptom checklist more appropriate for the evaluation of children. In regard to historical items, those dealing with length and course of psychopathology were seen as useful by 80% or more of the respondents, and those dealing with previous treatment were considered useful by 70% or so of the respondents. All axes of the comprehensive multiaxial diagnostic formulation proposed were seen as useful by 85% or more of the respondents.

Form Design

On the basis of the comments and suggestions received, preliminary decisions were made on the data to be obtained. Efforts were then concentrated on the design of the IEF.

The standardized forms used by administrative interviewers to collect demographic and financial information under the previously developed patient data system became the demographic and financial sections of the IEF, after the format of some items were changed and some new ones were added.

The previous instrument used in the institute for the clinical evaluation of patients applying for psychiatric care was strictly narrative and could not be computerized in a way that would allow for efficient retrieval of information. It was decided that the clinical section of the IEF would include a narrative component to allow flexibility in the description of the patient's condition, as well as a standardized component to ensure the systematic gathering of key clinical information and its efficient processing and retrieval. Furthermore, an

Table 1
Format of Initial Evaluation Form

Narrative Component	Standardized Component
Reason for referral and evaluation	Demographic information
History of present illness	Financial/insurance information
History of other psychiatric disorders	Psychiatric history markers
Mental status observations	Some problems in the past and in the current episode
Family history	Complementary symptom inventory
Personal and social history and current social support systems and assets	Family history markers
Medical history, systems review, and examination	Personal and social history and social isolation markers
Narrative assessment summary, problem list and recommendations, plans for family members	Presence/absence of positive general medical findings
Evaluators' signatures	Diagnostic summary and disposition
	Evaluator's codes and signature dates

attempt was made to integrate related narrative and standardized subsections to facilitate their completion.

Table 1 presents the basic format of the IEF, including a list of its sections and subsections.

Pilot Testing

Extensive trial runs of successive drafts of the IEF were conducted at the main entry gate to WPIC, the Diagnostic and Evaluation Center, as well as in other units of the institute. These trial runs gave evaluators first-hand, intensive experience with the IEF by using it for over 1 year with more than 1,000 psychiatric patients presenting a wide variety of psychopathological conditions. During the first months, a structured form was completed by the clinical evaluator each time that the IEF was used in order to provide comments and suggestions. From time to time, meetings were held with line clinicians and program directors in which the trial runs were discussed and specific suggestions for improvement of the IEF were requested. This enabled detection of problems in the use of the IEF, collection of data on the operation of the IEF, and the working out of procedures for a smoother initial evaluation process. On the basis of this pilot experience, the original April 1979 draft of the IEF was revised in July 1979 and again in June 1980.

Throughout the process of designing the IEF, a pointed effort was made to maintain the quality of each version. Proof sheets returned from the printers were carefully inspected to be sure that spelling and organization were correct. This step was taken so that a clinician reviewing the form would not be distracted by minor errors. Such errors could result in a bad impression of the IEF, which would be reflected in reduced acceptance of the form.

Some of the most interesting findings of the pilot test included the following: (1) The new, more comprehensive IEF took about the same amount of time to complete as the old narrative form, after the evaluator became familiar with it, and (2) the successive versions of the IEF were increasingly perceived by the clinicians as providing an accurate and useful description of the patient's condition.

CURRENT VERSION OF THE IEF

Figures 1-10 show the current 1980 version of the IEF. The first sections are the demographic and the financial sections, each one page long. These are fully standardized and are completed by an administrative interviewer.

The clinical section has as a main structural feature the mutually complementary arrangement of narrative and standardized components to facilitate completion. A highlight of the form is its inclusion of an expanded DSM-III (American Psychiatric Association, 1980) diagnostic formulation format in its last page (Figure 10). This is addressed to maximize the merits and potential of multiaxial psychiatric diagnosis (Mezzich, 1979, 1980) and to provide sounder grounds for the subsequent preparation of a comprehensive treatment plan. While the last DSM-III axis (V: "Highest level of functioning in the past year") appears to have mainly prognostic value (i.e., prediction of level of functioning after a florid episode of illness has subsided), the added Axis VI ("Current functioning") has considerable management value (e.g., to assist in hospitalization decisions and in planning work and social skills training).

The recording space of the clinical section spans eight pages. Extra blank pages (with patient and evaluation setting identification provided) are available to supplement any of the basic pages. In addition to the version of the form presented here, which provides blank spaces for typing narratives, a lined version is also available for handwriting narratives.

In addition to brief instructions and definitions provided directly on the form for all sections and items included, instructions and a list of terms and codes for Diagnostic Axes I through VI are provided on the back of the last pages of the form.

EVALUATION

In 1980, a copy of the current version of the IEF was sent to clinicians on the full-time faculty and staff of WPIC, along with a questionnaire to assess the perceived quality of the IEF according to five 4-point scales. One hundred and two completed questionnaires

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INITIAL EVALUATION FORM - DEMOGRAPHIC SECTION

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Patient Number _____ Interviewer [INTVWR] _____

Inpatient date of admission _____ Discharge _____ Date [INTDAT] _____, 19____

Status _____ Rate _____ Floor _____ Time [INTTIM] _____

Source ADMITTING / PCGC

Patient Name [PAT] _____ Census Tract [PATCT] _____

Address [PATADD] _____

Prescription type [RXTYPE] _____ MHMRNO [MHMRNO] _____

Telephone [PATTEL] _____ Soc. Sec. [PATSSN] _____

Birthdate [PATBD] _____ Age _____ Sex [PATSEX] MALE / FEMALE

Race-Ethnicity [PATRAC] WHITE / BLACK / ORIENTAL / SPANISH-SPEAKING / AMERICAN INDIAN / OTHER

Marital Status [PATMST] REMARRIED / MARRIED / SEPARATED / DIVORCED / WIDOW(ER) / SINGLE / UNKNOWN

Religion [PATRLG] CATHOLIC / JEWISH / ORTHODOX / PROTESTANT / OTHER / NONE

Education [PATEDU] 1 / 2 / 3 / 4 / 5 / 6 / 7 / 8 / 9 / 10 / 11 / 12
 PARTIAL COLLEGE, TECH. OR BUS. / COLLEGE GRADUATE
 PART. GRAD OR PROFESSIONAL / GRADUATE OR PROF. SCHOOL DEGREE
 SPECIAL 1-3 / SPECIAL 4-6 / SPECIAL 7+ / OTHER / UNKNOWN

Occupation [PATOCC] _____

Coded Occupation [PATCOC] HOMEMAKER / MANAGER, ADMINISTRATOR / ADM. PERSONNEL & SEMI-PRO.
 PROFESSIONAL / SALES / FARMER, FARM MANAGER / OPERATIVE, SEMI-SKILLED MANUAL
 FOREMAN / CLERICAL / LABORER NON-FARM / SERVICE WORKER
 CRAFTSMAN / UNKNOWN / FARM LABORER / PRESCHOOL OR STUDENT

Emp. Status [PATEST] FULL-TIME / PART-TIME / HOMEMAKER / STUDENT / PRESCHOOL / INCARCERATED
 DISABLED / RETIRED / LEAVE OF ABSENCE / UNEMPLOYED / OTHER / UNKNOWN

Employer [PATEMP] _____ [PATGMI] _____

Employer's Address [PATEAD] _____

Employment Date [PATEDT] _____, 19____ Telephone [PATETE] _____

Residing with [PATCOH] SPOUSE / PARENT(S) / RELATIVES(OTH) / FRIEND / FOSTER HOME / OTHER / NONE

Age & Sex of those in household [HAGSX] _____

Head of Household [PATHEA] YES / NO

Education of Head of Household (if not patient) [HHEDU] _____
 (see codes above)

Coded Occupation of Head of Household (if not patient) [HHCOC] _____
 (see codes above)

Spouse/nearest rel/friend [REL] _____

Relationship [RELREL] SPOUSE / MOTHER / FATHER / SON / DAUGHTER / SISTER / BROTHER / FRIEND / OTH

Address [RELADD] _____ Telephone [RELTEL] _____

Name of person who referred patient [REF] _____

Relationship [REFREL] SELF / FAMILY / FRIEND / HEALTH PROFESSIONAL / CLERGY
 SOCIAL AGENCY / MASS MEDIA / COURT / POLICE / OTHER / UNKNOWN

Name of person who accompanied patient [ACC] _____

Relationship [ACCREL] SELF / SPOUSE / RELATIVES (OTH) / FRIEND / HEALTH PROFESSIONAL
 POLICE / PROBATION OFF. / COUNTY ADMIN. / AGENCY (OTH) / OTHER / UNKNOWN

Agency [AGENCY] _____

Remark _____

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Figure 1.

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INITIAL EVALUATION FORM - FINANCIAL SECTION

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Patient Name _____ Patient Number _____

Guarantor (if not self) [GUA] _____

Relationship [GUAREL] SELF / SISTER / FATHER / BROTHER / MOTHER / OTHER
RELATIVE / GUARDIAN / SPOUSE / SON / DAUGHTER

Address [GUAADD] _____ Telephone [GUATEL] _____

Employer [GUAEMP] _____ Telephone [GUAETE] _____

Employer's Address [GUAEAD] _____

Occupation [GUAOCG] _____ GMI [GUAGMI] _____
Mail WPIC bill [MLWPIC] YES / NO
Mail CPP bill [MLCPP] YES / NO

Mail to [ML] _____

Mailing Address [MLADD] _____

Insured (if not self) [INS] _____ Soc. Sec. [INSSSN] _____

Relationship [INSREL] SELF / FATHER / SPOUSE / MOTHER / OTHER / UNKNOWN
GRANDPARENT / STEPFATHER / STEPMOTHER

Personal Liability [PATPL] _____ Effective date [PATPLD] _____, 19____

Number of dependents [GUADEP] _____

BC/BS Gr.No. [BCBSGN] _____ Ag.No. [BCBSAN] _____ Plan [BCBSPL] _____

Blue Cross/Blue Shield Major Medical Coverage [BCBSMN] YES / NO

Medical Assistance Status [MASTAT] _____, 19____

MA No. [MANO] _____ Digit [MADIG] _____ Line [MALINE] _____

MA Resource [MARESC] _____ MA District [MADIST] _____

DPA [DPA] YES / NO Category [MACAT] _____ County [MACTY] _____

Medicare Number [MEDNO] _____ Effective Date [MEDDAT] _____, 19____

Part A [MEDPA] YES / NO / UNKNOWN Part B [MEDPB] YES / NO / UNKNOWN

Commercial Carrier [COM] _____ Number [COMNO] _____

Address [COMADD] _____ Telephone [COMTEL] _____

Commercial Major Medical Coverage [COMMMI] YES / NO

Inpatient % [MMIINP] _____ Outpatient % [MMIOUP] _____

Yearly Maximum [MMIYRM] _____ Lifetime [MMILFM] _____

If hospitalized within last 12 months, where and how long [HOSP] _____

Financial Remark [FINRM1] _____

Financial Remark [FINRM2] _____

Financial Remark [FINRM3] _____

I understand that Western Psychiatric Institute and Clinic (WPIC) is required by Pennsylvania State Law to be a Teaching Hospital, and that supervised students may therefore participate in the treatment provided to me.

I hereby certify that the above statements are true and I approve an investigation by the hospital of my financial status. I agree to assume full responsibility for the expenses incurred by the above patient during hospitalization.

Signature of Informant
(No Financial Responsibility)
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Date

Signature of Responsible Person

Figure 2.

WPIC Number:

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HISTORY OF OTHER PSYCHIATRIC DISORDERS (Manifestations and treatment of currently inactive psychiatric disorders and of personality disorders which preceded present illness, to be used as background information. Include a description of any past problems noted in the checklist below).

PSYCHIATRIC HISTORY MARKERS

(Use question marks for unknown days, months, or years)

1. Regarding present psychiatric illness:

a. Approximate date of onset of current episode:

/	/	
m	d	y

b. Approximate date of onset of first episode of present psychiatric illness:

/	/	
m	d	y

c. Baseline course since first onset of present psychiatric illness:

☐ Improving ☐ Stationary ☐ Worsening

d. Episodicity of present psychiatric illness:

☐ Continuous or single episode
☐ With clear cut episodes
☐ Fluctuating, without clear cut episodes

2. Approximate date of onset of past psychiatric disorders (if any)

/	/	
m	d	y

☐ None

3. Date of first psychiatric hospitalization ever:

/	
month	year

☐ Never hospitalized

4. Number of months of psychiatric hospitalization during the past 12 months: ____

5. Mental Health treatment during the past 3 months (check all applicable):

☐ None	☐ Neuroleptics	☐ Anticonvulsants
☐ Individual psychotherapy	☐ Minor tranquilizers	☐ Other & unspecified medication
☐ Group psychotherapy	☐ Antidepressants	☐ ECT
☐ Family therapy	☐ Lithium	☐ Other modalities

SOME PROBLEMS IN THE PAST AND IN THE CURRENT EPISODE

	Absent	Present in past but not current	Present in current episode	Not known
1. INSOMNIA difficulty falling or staying asleep, and/or early morning awakening	1	2	3	4
2. HYPERSONNIA excessive amount of sleep	1	2	3	4
3. APPETITE LOSS	1	2	3	4
4. APPETITE GAIN	1	2	3	4
5. WEIGHT LOSS	1	2	3	4
6. WEIGHT GAIN	1	2	3	4
7. LOSS OF LIBIDO lack of sexual interest or activity	1	2	3	4
8. HYPEREXCITED LIBIDO	1	2	3	4
9. ALCOHOL USE of concern to individual or significant other	1	2	3	4
10. USE OF OTHER C.N.S. DEPRESSANTS barbiturates, other hypnotics, minor tranquilizers	1	2	3	4
11. USE OF OTHER DRUGS stimulants, narcotic analgesics, marijuana, hallucinogens, cocaine	1	2	3	4
12. VIOLENT BEHAVIOR aggressiveness	1	2	3	4
13. IMPULSIVITY poor impulse control	1	2	3	4
14. OTHER ANTISOCIAL BEHAVIOR cheating, stealing, irresponsibility, callousness	1	2	3	4

Figure 4.

WPIC Number:

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MENTAL STATUS OBSERVATIONS**I. General Appearance and Behavior****II. Speech and Thought Rate and Pattern****III. Mood and Affect****COMPLEMENTARY SYMPTOM INVENTORY**

	Present in the past but not in current episode		Present in current episode but not now		Present during interview	Not known
	Absent	episode				
1 SLOWED MOVEMENTS underactivity	1	2	3	4	5	
2 ACCELERATED MOVEMENTS restlessness, agitation	1	2	3	4	5	
3 SOCIAL WITH-DRAWAL lack of spontaneous interaction, seclusion	1	2	3	4	5	
4 SELF-NEGLECT lack of attention to cleanliness and clothing	1	2	3	4	5	
5 BIZARRE BEHAVIOR idiosyncratic appearance and conduct; mannerisms and posturing	1	2	3	4	5	
6 SLOWED SPEECH AND THOUGHT	1	2	3	4	5	
7 SPEECH PRES-SURE OR FLIGHT OF IDEAS abrupt topic changes based on understandable associations, distracting stimuli or word plays	1	2	3	4	5	
8 THOUGHT PROCESS DIS-ORGANIZATION loose associations, tangentiality, blocking	1	2	3	4	5	
9 GENERAL ANXIETY motor tension, autonomic hyperactivity, apprehensive expectation and scanning	1	2	3	4	5	
10 PANIC ATTACKS discrete periods of sudden onset of intense apprehension or terror	1	2	3	4	5	
11 SITUATIONAL ANXIETY OR PHOBIAS persistent, irrational fear of an object or situation	1	2	3	4	5	
12 DEPRESSED MOOD sadness, dejection, crying	1	2	3	4	5	
13 LOW SELF-ESTEEM	1	2	3	4	5	
14 LABILITY OF MOOD repeated, rapid shifts in mood	1	2	3	4	5	
15 ELATED MOOD euphoria, excitement	1	2	3	4	5	
16 BLUNTED OR INCONGRUOUS AFFECT flat, inappropriate for content of speech	1	2	3	4	5	
17 HOSTILITY belligerence, uncooperativeness	1	2	3	4	5	
18 DISSOCIATIVE SYMPTOMS narrowing of consciousness	1	2	3	4	5	
19 CONVERSION SYMPTOMS functional paralysis, anesthesia, seizures, etc. mentioned or observed during the interview	1	2	3	4	5	

Figure 5.

WPIC Number:

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IV. Thought Content and Perception

	Absent	Present in the past but not in current episode	Present in current episode but not now	Present during interview	Not known
20. SUSPICIOUSNESS feelings that everything is not as it should be, inappropriate interpretiveness	1	2	3	4	5
21. SOMATIC PREOCCUPATION hypochondriasis	1	2	3	4	5
22. SUICIDAL INDICATORS death wishes, suicide ideas or attempts	1	2	3	4	5
23. HOMICIDAL INDICATORS ideation or behavior	1	2	3	4	5
24. OBSESSIONS AND COMPULSIONS repetitive, intrusive thoughts or behavior experienced against conscious resistance	1	2	3	4	5
25. DEPERSONALIZATION experiencing self or surroundings as unreal	1	2	3	4	5
26. SCHNEIDERIAN SYMPTOMS voices arguing, commenting on one's action or speaking thoughts aloud; somatic passivity; thought withdrawal, insertion or broadcasting; "made" feelings, impulses or acts; primary delusional perception	1	2	3	4	5
27. OTHER AUDITORY HALLUCINATIONS	1	2	3	4	5
28. VISUAL HALLUCINATIONS	1	2	3	4	5
29. OTHER HALLUCINATIONS smell, taste, touch	1	2	3	4	5
30. DELUSIONS OF REFERENCE, PERSECUTION, JEALOUSY OR GRANDIOSITY	1	2	3	4	5
31. DEPRESSIVE DELUSIONS OR HALLUCINATIONS derogatory content	1	2	3	4	5
32. OTHER DELUSIONS	1	2	3	4	5
33. IMPAIRED SENSORIUM AND ORIENTATION to time, place and person	1	2	3	4	5
34. RECENT INTELLECTUAL IMPAIRMENT deficit in memory, calculation, knowledge, judgment	1	2	3	4	5
35. DEVELOPMENTAL INTELLECTUAL DEFICIT	1	2	3	4	5
36. POOR CONCENTRATION poor attention span, distractibility	1	2	3	4	5
37. LACK OF INSIGHT about presence and nature of psychopathology	1	2	3	4	5

V. Sensorium, Orientation, Intellectual Functions and Insight

Figure 6.

WPIC Number:

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FAMILY HISTORY

Past and current psychiatric and major general medical disorders and treatment in the family.

	No	Yes	?
1. Psychiatric disorders in the family	1	2	3
2. Psychiatric treatment received	1	2	3
3. Major general medical disorders in the family	1	2	3
4. General medical treatment received	1	2	3

PERSONAL AND SOCIAL HISTORY

Developmental, educational, marital, sexual, military, occupational and legal history. Current social support system and assets useful for treatment planning.

	None	Yes	?
1. Perinatal problems	1	2	3
2. Developmental delays	1	2	3
3. Broken family or serious family problems while growing-up.	1	2	3
4. Difficulties at school	1	2	3
5. Difficulties during military service or less than "honorable" discharge	1	2	3
6. Considerable past periods of unemployment or poor work performance	1	2	3
7. History of marital disharmony or divorce	1	2	3
8. Problems of sexual identification	1	2	3
9. Arrests with convictions	1	2	3
10. Current social isolation	1	2	3

Figure 7.

WPIC Number:

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MEDICAL HISTORY (Major non-psychiatric illnesses, physical complaints and injuries, hospitalizations, operations, obstetric & gynecological history, current physicians and medications, drug sensitivities and allergies)

☐ See separate medical note

Positive history of serious medical problems: ☐ No ☐ Yes ☐ ?

REVIEW OF PHYSICAL SYSTEMS (Positive and pertinent negative physical symptoms)

☐ See separate medical note

Significant positive physical symptoms: ☐ No ☐ Yes ☐ ?

PHYSICAL EXAMINATION

☐ See separate medical note

Vital Signs: Pulse _____ BP _____ / _____ Temp _____ Resp _____

Positive and pertinent negative findings:

Figure 8.

WPIC Number:

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NARRATIVE ASSESSMENT SUMMARY

PROBLEMS

☐ See separate treatment plan form

RECOMMENDATIONS (Further diagnostic studies, treatment modalities)

PLANS FOR FAMILY MEMBERS

☐ See separate social evaluation form

Figure 9.

Name: _____

WPIC Number:

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Date: _____/_____/_____

Evaluation Setting: _____

Codes

I. Clinical psychiatric syndromes (instructions and codes on back of pages 6 and 7):

Main Formulation:

Alternatives to be ruled out:

1. _____
2. _____
3. _____
4. _____

Alternatives to be ruled out:	

11. Personality and specific developmental disorders (Instructions and codes on back of pages 6 and 7):

Main Formulation:

Alternatives to be ruled out:

1. _____
2. _____
3. _____

Alternatives to be ruled out:	

III. Physical disorders (instructions on back of this page):

Main Formulation:

Alternatives to be ruled out:

1. _____
2. _____
3. _____

Alternatives to be ruled out:	

IV. Psychosocial stressors (Instructions on back of this page):

A. Ranked list:

1. _____
2. _____
3. _____
4. _____

B. Overall stressor severity:

1	2	3	4	5	6	7	8
None	Minimal	Mild	Moderate	Severe	Extreme	Catastrophic	Unspecified

V. Highest level of adaptive functioning during the past year (instructions on back of this page):

1	2	3	4	5	6	7	8
Superior	Very Good	Good	Fair	Poor	Very Poor	Grossly Impaired	Unspecified
		Superior	Adequate	Slightly Impaired	Moderately Impaired	Markedly Impaired	Unspecified

VI. Current functioning: (Instructions on back of this page)	A. At work/school	1	2	3	4	5	0
	B. With family	1	2	3	4	5	0
	C. With other indiv. & groups	1	2	3	4	5	0

DISPOSITION

A. Admission or Referrals

Name of program or facility	Date of admission or appointment (month/day/year)	Program code (by coder)	Flow sheet sent (✓)

B. Legal status after evaluation:

- ☐ Voluntary (regular) ☐ Voluntary-302 Commitment discontinued ☐ 302 Commitment in force ☐ 303 Commitment ☐ 304 Commitment ☐ Other Involuntary

EVALUATORS

1.	Signature of first clinician	Code	Date
2.	Signature of second clinician	Code	Date
3.	Signature of third clinician	Code	Date

Figure 10.

Table 2
Ratings (in Percentages) of the Quality of the Initial Evaluation Form as Perceived by 102 Clinicians at WPIC

Question	Rating			
	Very Good	Fairly Good	Rather Poor	Very Poor
(1) Coverage of what should be included in an initial evaluation	79	18	3	0
(2) Organization of the informational sections	74	24	1	1
(3) Clarity of the items included	61	39	0	0
(4) If you have had the opportunity to use this version of the form				
(a) How well did it convey the evaluation of the patient?	52	47	1	0
(b) How convenient and easy was it to use?	30	59	10	1

were received. The ratings are summarized in Table 2. For all items, 89% to 100% of the ratings were at one of the two highest levels ("very good" or "fairly good"), with the large majority of ratings being at the "very good" level.

Additional evidence of the acceptance and usefulness of the form was provided by an independent study conducted by the WPIC patient care audit committee on IEFs completed during the first month of use of the current version of the form. Even during this introductory period, the vast majority of sections and items of the IEF were found to be satisfactorily completed. Furthermore, supporting the diagnostic documentation value of the IEF, it was found that in 83% of the cases there was adequate clinical information recorded in the body of the form to satisfy the criteria required in the DSM-III manual for the diagnoses made.

Preliminary assessments of the interrater reliability for the items of the IEF have found quite high levels of agreement. Agreement appears to increase with the level of training.

IMPLEMENTATION ACTIVITIES

Training of Evaluators

An important aspect of the implementation of the form is the training of clinical evaluators who complete the IEF. This is an ongoing program, so it will involve not only current, but also future evaluators. The training program currently includes the following components.

(1) Demonstration of interview techniques by senior WPIC clinicians: These are invited to conduct a live psychiatric interview of selected patients with IEF clinical evaluators either present in the room or watching through a one-way mirror. After the patient leaves, a discussion of the interview process and the diagnostic formulation takes place.

(2) Individual practice and group discussion of ratings of videotaped diagnostic interviews: Each participating clinician independently completes an IEF upon watching a videotaped diagnostic interview. After the ratings are collated, a group meeting is held to discuss problems encountered and areas of disagreement.

(3) Peer review of routinely completed IEFs: A sample of routinely completed IEFs is selected to be

periodically reviewed by the whole group of initial evaluators in order to monitor the completion and quality of the write-ups.

Data Base Development and Processing

The data obtained with the IEF and checked for completion and clarity by a systems specialist and then are entered into in-house minicomputers at WPIC. These computers already support the institutional patient registration, contact, and billing systems. The data collected with the IEF and other CIS forms are being integrated with these other systems. This should allow an efficient use of computer resources, as well as increased flexibility in obtaining a more comprehensive view of each patient.

Another important aspect of the computerization of the IEF consists of developing procedures and computer programs with which users can retrieve data. The reasons for data retrieval span patient care, clinical/administrative reporting, and research. Data retrieval for patient care mainly involves data from an IEF previously completed for the patient at hand. The retrieval of the narrative information contained in the IEF requires a manual search in the patient's paper chart. In contrast, the standardized sections of the IEF can be retrieved very quickly from the computer through video display terminals.

The standardized information is also retrieved for the purpose of identifying candidates for specific research protocols. Summary reports and data-based research usually require large amounts of data. Since the computer programs required to generate summary reports are relatively simple, these can be generated on the in-house minicomputers. On the other hand, data-based research studies often require special software not available on these computers. These data can be placed on a magnetic tape, with appropriate confidentiality measures taken, and processed on the university's large computer system, which has the software and machine capacity to handle most research needs.

Systems Monitoring

Many computerized information systems work very well for some time after implementation. In other cases, as soon as the designers of the system turn to other projects, the system begins to fall apart. This may

be due to laxity on the part of the operators or to inadequately trained or motivated clinical staff. These problems can be detected if a routine program of monitoring the operation of the system is implemented. Two of the most important elements are reliability and validity.

Monitoring the reliability of the CIS evaluation forms involves having multiple clinicians evaluate the same patient, through either a live or a videotaped interview. In this way, a measure of interrater agreement can be obtained (Bartko & Carpenter, 1976; Mezzich, Kraemer, Worthington, & Coffman, 1981).

Monitoring the validity of the CIS is more difficult than monitoring its reliability. One activity planned for assessing the usefulness of the IEF is to have the staff of the receiving treatment module judge the quality of the evaluation and the appropriateness of the referral made and record this judgment. Another activity involves assessing empirically the value of the clinical information contained in the IEF to substantiate diagnostic formulations and treatment referrals. More generally, the continuous acceptability of the IEF can be assessed through meetings with evaluators and the staffs of the treatment programs, as well as through the circulation of periodic questionnaires throughout the institute.

COMMENT

The IEF now has become the standard form for the initial evaluation of patients at WPIC. The current institutional policy is that the chart of every inpatient and outpatient cared for at the institute must have a completed IEF. However, the form should not be considered fossilized. In fact, it will undergo periodic scrutiny in order to revise it as needed. This process is

facilitated by the flexibility of the design and computerization arrangements.

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