NAVY MENTAL HEALTH INFORMATION SYSTEM (NAMHIS): A PSYCHIATRIC APPLICATION OF COSTAR

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BETHESDA, MARYLAND

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NAVY MENTAL HEALTH INFORMATION SYSTEM (NAMHIS):
A PSYCHIATRIC APPLICATION OF COSTAR

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SUMMARY

The Navy Mental Health Information System, NAMHIS, is a comprehensive, automated recordkeeping and reporting system designed to meet the needs of clinicians and administrators in Outpatient Navy Mental Health Clinics. The public domain version of the Computer Stored Ambulatory Record, COSTAR, was extensively modified to fulfill the software requirements of NAMHIS and covers the five system functions: Patient Registration, Encounter Data, Patient History, Mental Status Examination and Reporting capability. Data collection forms have been developed, along with standardized reports of individual patient/clinician consultations.
Introduction

A standardized outpatient mental health recordkeeping and reporting system has been developed by the Naval Health Research Center (NHRC), San Diego to serve as the basis for a comprehensive, automated Navy Mental Health Information System (NAMHIS). NAMHIS has been designed to meet the information requirements of clinicians and administrators in Navy mental health, including timely reports of patient consultations, management data, and medical audit and utilization review procedures prescribed by medical quality assurance and accreditation programs. NAMHIS captures, stores, displays and prints relevant, complete, and standardized information so that it is immediately and perpetually accessible. Further, the system has the capability to generate required reports in a timely manner, tabulate population statistics, and answer research queries far more accurately and efficiently than any of these tasks can be accomplished manually. The Computer Stored Ambulatory Record (COSTAR) software has been adapted to serve as the vehicle for automation of NAMHIS and accommodates the specific data requirements of Navy outpatient mental health.

Background

Clinicians in outpatient Navy Fleet Mental Health Support Units (FMHSUs) typically engage in triage, brief assessment, and crisis intervention. Most outpatient FMHSU patients are only seen for a single visit from which the referral source desires a report in a timely manner to use in making decisions concerning the patient's status. Efficient and effective performance of these tasks depends upon the prompt acquisition and availability of specific patient information that is not routinely included in Navy medical records in an organized, complete fashion. The patient must be identified, the presenting problem described, fitness for duty must be determined and documented, and recommendations for subsequent clinical management and disposition made. To accomplish all of this, information must be collected from service records, medical records, telephone conversations with the referral source, the clinician's evaluation, and results of any medical or psychological tests. A report of consultation then is generated, using the information gathered, which is sent back to the referral source, and a copy is retained at the FMHSU. Coincidentally, the information must be documented on patient visits that facilitates systematic and comprehensive reporting and that satisfies the requirements of medical audit utilization review procedures. The importance and complexity of these data requirements has exceeded the capability of the Navy's manual mental health recordkeeping procedures. Before the design and development of NAMHIS, no comprehensive system existed within Navy mental health services for collecting and processing administrative and clinical information obtained from individual patients or from patient visits.

NAMHIS Design and Development

The NAMHIS project began with two pilot studies investigating Fleet Mental Health Support Units in the San Diego region. The first study analyzed reporting requirements and documented the need for a standardized Navy outpatient mental health reporting system. The second study involved the design and pilot testing of a prototype recordkeeping system at a single Fleet Mental Health Support Unit. Data collection instruments developed for the recordkeeping system were utilized over a nine-month period. Based on the data collected and the results of the pilot study, the forms were revised and used to collect data at all four FMHSUs in the San Diego region over a ten-month period.
A subsequent study analyzed these data to compare patient characteristics, diagnostic patterns, referral sources, and dispositions among the four FMHSUs.

At this point in the project, it was decided to formalize and expand the outpatient mental health recordkeeping and reporting system, and then to automate it to form the Navy Mental Health Information System (NAMHIS). The pilot studies had provided a great deal of information on the workings of the Navy outpatient mental health system. However, a more detailed understanding of this system was a necessary basis for the development of the comprehensive NAMHIS. Consequently, a systems analysis of the four San Diego region FMHSUs was performed. It was learned that the content of the patient information collected and the procedures used to record, process, and report this information were somewhat different for each clinic. The resulting strategy for the development of NAMHIS was to provide a system which would standardize procedures as much as possible and further the early implementation of quality assurance guidelines. At the same time, the necessary flexibility would be retained to accommodate the variability noted in patient populations and presenting problems from clinic to clinic.

Phase I of the NAMHIS project—needs assessment and systems analysis—was now complete. The next step was to design NAMHIS and to generate specifications for software development. Data collection forms and an efficient system utilizing these instruments in data collection had to be developed, along with standardized reports of individual patient/clinician consultations and summary statistical reports involving the entire clinic population. Thus, Phase II consisted of system design and specifications generation.

In Phase III, the actual development of NAMHIS took place. The Computer Stored Ambulatory Record (COSTAR) software was chosen as the vehicle for automating NAMHIS because of its suitability, flexibility, and adaptability in outpatient settings. The public domain version of COSTAR served as a starting point for the development of NAMHIS. This basic software has been extensively modified for use in Navy psychiatric outpatient settings through a team effort representing psychiatry, clinical psychology, mental health administration, and computer science. Every effort was made to make the system easy to use. A users' reference manual was prepared and tailored to NAMHIS characteristics along with a set of job aids that facilitate the work flow in a fleet mental health support unit.

NAMHIS System Description

The system description of NAMHIS covers the following five system functions: Patient Registration, Encounter Data, Patient History, Mental Status Examination, and Reporting Capability.

Patient Registration

Before any encounter data can be entered into the patient's medical record in NAMHIS, the patient must be registered. Each new patient completes the Patient Registration Form shown in Figure 1. The Patient Registration Form contains basic identifying information and demographic data. Only two registration data items require assistance from staff—the Suffix to Social Security Number and the patient's Enlisted Rating or Officer Category. The Suffix is a 2-digit CHAMPUS code that defines the patient's position in his or her family structure. For example, 20 means Uniformed Service Member (Sponsor). It is the sponsor's Social Security Number (SSN) that is recorded. The SSN and Suffix constitute a unique patient identifier and is used as the unit number in COSTAR.
MENTAL HEALTH CARE
PATIENT REGISTRATION FORM

THIS FORM TO BE COMPLETED BY THE PATIENT. RESPOND TO ALL ITEMS. PLEASE PRINT.

1. PATIENT NAME
   LAST NAME: ___________________________  FIRST NAME: ___________________________ M.I.: ___________________________

2. SEX
   □ (M) Male  □ (F) Female

3. DATE OF BIRTH
   MONTH / DAY / YEAR

4. DUTY STATION  IF DEPENDENT OR CIVILIAN, print home address.

5. SOCIAL SECURITY NUMBER (SSN)
   SSN SUFFIX

6. TODAY’S DATE (Date of Registration.)
   MONTH / DAY / YEAR

7. ETHNIC BACKGROUND
   □ (W) White  □ (F) Filipino or Malayan
   □ (O) Oriental  □ (N) Native American
   □ (H) Hispanic  □ (O) Other
   □ (B) Black

8. MARITAL STATUS
   □ (N) Never married  □ (S) Separated
   □ (M F) Married first time  □ (D) Divorced
   □ (M D) Married other than first  □ (W) Widowed

9. PATIENT STATUS
   □ (A) Active duty  □ (R) Retired
   □ (D S) Dependent spouse  □ (O) Other
   □ (D C) Dependent child

10. BRANCH OF SERVICE
    □ (USN) USN or USNR  □ (USCG) USCG
    □ (USM) USMC  □ (O) Other/Does not apply

11. PAYGRADE or RANK
    Enter on chart, check appropriate box.
    If Dependent, check here  □ (D)  If Nondependent Civilian, check here  □ (O)
    □ E1  □ E2  □ E3  □ E4  □ E5  □ E6  □ E7  □ E8  □ E9
    □ W1  □ W2  □ W3  □ W4  □ O1  □ O2  □ O3  □ O4  □ O5  □ O6  □ O7  □ O8  □ O9  □ O10

12. DATE FIRST CAME ON ACTIVE DUTY
    MONTH / DAY / YEAR

13. IN RECRUIT TRAINING?
    □ (Y) Yes  □ (N) No

14. ENLISTED RATING or OFFICER CATEGORY
    Enter one from chart with assistance from staff. Ignore if Dependent or Civilian.

NMRC 6220-30.1A (01-86)

Figure 1
A table of all Navy Enlisted Ratings and Officer Categories has been constructed in NAMHIS and tied to the COSTAR code for Item 14 on the Patient Registration Form. This feature makes it possible to selectively retrieve patient data for occupations considered at risk for psychiatric stress, an important capability for conducting Navy mental health research. If data on enlisted ratings and officer categories were to be stored in NAMHIS as free text entries, standardized data retrieval would be virtually impossible.

The COSTAR registration prompt sequence in NAMHIS follows the sequence of data items shown on the Patient Registration Form, making data entry straightforward, easy, and fast. The characters in parentheses next to each box on the Patient Registration Form are what the data entry clerk types into NAMHIS. The usual COSTAR help features have been incorporated, and customized user documentation and job aids are also available.

**Encounter Data**

Two forms are used in NAMHIS for collecting and entering encounter data—an Initial Encounter Form (see Figure 2) and a Follow-Up Encounter Form. The Follow-Up Encounter Form contains a subset of the data items collected at the initial encounter. Some data items (e.g., referral source and precipitating problems and symptoms) need only be collected during the first visit, and never again. Consequently, these items do not appear on the Follow-Up Encounter Form.

The Encounter Forms are divided into two sections: the Technician Section and the Clinician Section. Items in the Technician Section are those that do not require a high level of clinical expertise to complete. This leaves the clinician (psychiatrist or psychologist) free to address only those items necessitating the use of trained clinical judgment (e.g., diagnosis and disposition). With the patient completing the Registration Form, the responsibility for data collection is divided three ways. This efficient procedure maximizes the "labor resources" available to a fleet mental health support unit.

It is mandatory for the clinician to record a primary diagnosis on the Encounter Forms. This diagnosis is taken from the Diagnostic and Statistical Manual of Mental Disorders published by the American Psychiatric Association (DSM-III). All of the DSM-III diagnoses have been added to the COSTAR Directory, and the corresponding DSM-III codes have been entered in the Directory as abbreviated names, thus facilitating data entry. A translation directory containing all of the DSM-III diagnoses and codes has also been incorporated into NAMHIS.

The standard COSTAR header prompts in encounter data entry have been modified in NAMHIS to segregate patient history data and mental status examination data according to either type. This segregation makes it possible to retrieve and print either class of data by themselves as a separate encounter report.

**Patient History**

Criteria for the patient history module in NAMHIS were established through a review of existing standardized patient history forms and by consultation with Navy clinicians. Emphasis was placed on thoroughness and relevance for use in a Navy outpatient mental health facility. The NAMHIS Patient History Form (see Figure 3) is divided into 11 sections typically considered important to a clinical interview: family history, childhood history, school history, interpersonal adjustment history, civilian arrests, past vocational history, drug/alcohol history, current marriage...
### MENTAL HEALTH CARE

**INITIAL ENCOUNTER FORM**

**THIS SECTION TO BE COMPLETED BY THE TECHNICIAN. ANSWER EACH ITEM. PLEASE PRINT.**

**PATIENT NAME**

<table>
<thead>
<tr>
<th>LAST NAME</th>
<th>FIRST NAME</th>
<th>M. L.</th>
</tr>
</thead>
</table>

**SEX**  
- [ ] (M) Male  
- [ ] (F) Female

**DATE OF BIRTH**  
- [ ] MONTH / DAY / YEAR

**DATE OF ENCOUNTER**  
- [ ] MONTH / DAY / YEAR

**CLINICIAN No. 1**  
- [ ] CODE: — — —

**CLINICIAN No. 2**  
- [ ] CODE: — — —

**SITE CODE**  
- [ ] (A) NAS North Island  
- [ ] (B) Naval Station San Diego  
- [ ] (C) Naval Training Center San Diego  
- [ ] (D) NAS Miramar  
- [ ] (E) San Diego Naval Hospital  
- [ ] (O) Other

**TYPE OF PRINCIPAL SERVICE PROVIDED (Evaluation/Psychotherapy)**  
- [ ] (A) Suitability or fitness for duty  
- [ ] (B) Special program screening  
- [ ] (C) Psychometric testing  
- [ ] (D) Fit for confinement  
- [ ] (E) Medical Board  
- [ ] (F) Sanity hearing  
- [ ] (G) NAB or RAB  
- [ ] (H) Individual therapy  
- [ ] (I) Group therapy  
- [ ] (J) Couple/family therapy  
- [ ] (K) Relaxation therapy  
- [ ] (L) Other screening  
- [ ] (O) Other

**VISIT CLASSIFICATION**  
- [ ] (1) Routine initial visit  
- [ ] (2) 72 hr. initial visit  
- [ ] (3) Emergency initial visit (clinical)  
- [ ] (4) Emergency initial visit (admin.)

**DATE CONSULT RECEIVED OR APPOINTMENT REQUESTED (OCR)**  
- [ ] MONTH / DAY / YEAR

**WHO REFERRED PATIENT TO PSYCH?**  
- [ ] (A) Dispensary sick call  
- [ ] (B) Other medical service/Hospital  
- [ ] (C) Command/Command sick call  
- [ ] (D) Brig/Brig sick call  
- [ ] (E) Chaplain  
- [ ] (F) Self  
- [ ] (G) Legal Officer  
- [ ] (O) Other

**SPECIAL PROGRAM SCREENING**  
- [ ] (A) None  
- [ ] (B) Submarine duty  
- [ ] (C) UDT, SEAL or Diving  
- [ ] (D) PRP  
- [ ] (E) Deepfreeze  
- [ ] (F) Company Commander or Drill Instructor  
- [ ] (O) Other

NYPC D2/0 30/18 (02, 84)

[CONTINUE ON REVERSE]
### THIS SECTION TO BE COMPLETED BY THE CLINICIAN. PLEASE RESPOND TO ALL ITEMS.

4. **PRECIPITATING PROBLEMS AND SYMPTOMS**
   - Rate each problem or symptom on a 7-point scale, indicating the degree of severity:
     - 1 = Mild
     - 2 = Moderate
     - 3 = Severe
   - If a problem or symptom is of **Short Duration**, write "**S**" to the left of the letter code corresponding to the item.

<table>
<thead>
<tr>
<th>Item Code</th>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>DFP</td>
<td>LN</td>
<td>1 2 3 Loneliness</td>
</tr>
<tr>
<td>AXW</td>
<td>SCID</td>
<td>1 2 3 Suicide Ideation</td>
</tr>
<tr>
<td>DLP</td>
<td>SGES</td>
<td>1 2 3 Suicide Gesture</td>
</tr>
<tr>
<td>ALCA</td>
<td>SCAT</td>
<td>1 2 3 Suicide Attempts</td>
</tr>
<tr>
<td>DGB</td>
<td>HCID</td>
<td>1 2 3 Homicidal Ideation</td>
</tr>
<tr>
<td>ETO</td>
<td>HBR</td>
<td>1 2 3 Homicidal Behavior</td>
</tr>
<tr>
<td>SLDP</td>
<td>MDN</td>
<td>1 2 3 Moodiness</td>
</tr>
<tr>
<td>SKP</td>
<td>NRV</td>
<td>1 2 3 Nervousness</td>
</tr>
<tr>
<td>MFP</td>
<td>TMP</td>
<td>1 2 3 Temper Outbursts</td>
</tr>
<tr>
<td>IPM</td>
<td>EXW</td>
<td>1 2 3 Excess Worry</td>
</tr>
<tr>
<td>PNL</td>
<td>CSP</td>
<td>1 2 3 Crying Spells</td>
</tr>
<tr>
<td>JP</td>
<td>LSE</td>
<td>1 2 3 Loss of Energy/Interest</td>
</tr>
<tr>
<td>WD</td>
<td>SLP</td>
<td>1 2 3 Sleep Impairment</td>
</tr>
<tr>
<td>BB</td>
<td>APT</td>
<td>1 2 3 Appetite Impairment</td>
</tr>
<tr>
<td>SOP</td>
<td>PPD</td>
<td>1 2 3 Other</td>
</tr>
<tr>
<td>HSK</td>
<td>NPL</td>
<td>Non Applicable</td>
</tr>
</tbody>
</table>

**CODE:** COMMENTS:

---

5. **SERVICE RECORD REVIEWED (SRR)**
   - Y | Yes
   - N | No
   - L | Lost or not accessible

6. **HEALTH RECORD REVIEWED (HRR)**
   - Y | Yes
   - N | No
   - L | Lost or not accessible

7. **CONSULT FORM REVIEWED (CFR)**
   - Y | Yes
   - N | No
   - L | Lost or not accessible

8. **PRIMARY DIAGNOSIS**
   - AXIS 1
   - AXIS 2

**CODE:** COMMENTS:

---

9. **DISPOSITION**
   - (F) Fit for full duty
   - (U) Unfit for duty
   - (R) Unsuitable
   - (D) Deferred
   - (L) Limited duty
   - (T) Temporary
   - (I) Dependent - does not apply

**COMMENTS:**

---

10. **RECOMMENDATION**
    - Check **ALL** that apply:
    - ALCR | Alcohol rehabilitation
    - DRGR | Drug rehabilitation
    - CAAC | CAAC
    - HSF  | Admit to hospital
    - OTX  | Return for outpatient treatment
    - FEVL | Return for further evaluation

**CODE:** COMMENTS:

---

11. **SPECIAL PROGRAM SCREENING RESULTS**
    - Check **ONE** only:
    - (A) Qualified
    - (C) Deferred
    - (B) Disqualified
    - (D) Does not apply

**BRIEF COMMENTS (BRC)** For comments pertaining to particular items, list **code/associated comment.**

---

**Figure 2 (Cont'd)**
NAMHIS PATIENT HISTORY FORM

NAVY MENTAL HEALTH INFORMATION SYSTEM (NAMHIS)
NAVAL HEALTH RESEARCH CENTER
SAN DIEGO

PATIENT'S NAME: ____________________________  LAST  FIRST  M.I.

Sex:  a) Male  Date of Birth: (MM DD YY) ___/___/___
      b) Female

Date of Encounter: (MM DD YY) ___/___/___

Clinician #1 Code: ___________  Clinician #2 Code: ___________

Site Code: ___________  Type Code: ___________

Visit classification:
(1) Routine initial visit
(2) 72-Hour initial visit
(3) Emergency initial visit (clinical)
(4) Emergency initial visit (admin.)

FAMILY HISTORY

Sibling Order (e.g., 1st of 3) ___ of ___

Adopted? Yes  No

Family background (check all that apply)

Intact  Marked by divorce
Stable  Marked by death of mother
Disruptive  Marked by death of father
Marked by separation  Suicide

Comments: ___________________________

Parents: (Check all that apply)

<table>
<thead>
<tr>
<th></th>
<th>Mother/Female Guardian</th>
<th>Father/Male Guardian</th>
</tr>
</thead>
<tbody>
<tr>
<td>Warm</td>
<td>___</td>
<td>___</td>
</tr>
<tr>
<td>Loving</td>
<td>___</td>
<td>___</td>
</tr>
<tr>
<td>Cold</td>
<td>___</td>
<td>___</td>
</tr>
<tr>
<td>Aloof</td>
<td>___</td>
<td>___</td>
</tr>
<tr>
<td>Physically abusive</td>
<td>___</td>
<td>___</td>
</tr>
<tr>
<td>Sexually abusive</td>
<td>___</td>
<td>___</td>
</tr>
<tr>
<td>Alcoholic</td>
<td>___</td>
<td>___</td>
</tr>
<tr>
<td>Mentally ill</td>
<td>___</td>
<td>___</td>
</tr>
</tbody>
</table>

Comments: ___________________________

Figure 3
CHILDHOOD HISTORY

Childhood Behavior Problems: (Check all that apply)
- Sleepwalking
- Bedwetting
- Tantrums
- Hyperactivity
- Nightmares

Comments:

SCHOOL HISTORY

Academic Performance in School: (Check one)
- Poor
- Good
- Average
- Excellent

History of learning problems: (Check all that apply)
- Learning disability
- Repeated grade
- Special education classes
- No history of learning problems

Comments:

Education level: (check highest level completed)
- Ninth grade or below
- Tenth or eleventh grade
- High school graduate
- GED
- College graduate

Reason for leaving school (if other than graduation):

History of: (Check all that apply)
- Rebellious behavior
- Authority conflicts
- Expulsions
- Good adjustment
- Participated in extracurricular activities
- Rarely participated in extracurricular activities

Comments:

ADJUSTMENT HISTORY

Interpersonal Adjustment/Relationships: (Check all that apply)
- Good social adjustment
- Poor social adjustment
- Healthy
- Unhealthy
- Stable
- Unstable
- Intense
- Transient
- Lasting relationships
- Stable

Comments:

Figure 3 (Cont'd)
10
Personality Characteristics: (Check all that apply)

Shy
Withdrawn
Avoidant
Outgoing
Friendly
Dependent
Independent
Oversensitive
Confident
Lacking confidence
Low self-esteem
Passive aggressive
Stubborn
Perfectionistic
Moody
Emotional

Unemotional
Unable to relax
Suspicious
Sensitive to criticism
Demanding
Egocentric
Empathetic
Lack of empathy
Patient
Impatient
Easy going
Impulsive
Honest
Dishonest
Decisive
Indecisive

Comments:

CIVILIAN ARRESTS

Arrests: (Check one)

History of arrests
No history of arrests
Current civilian charges pending

PAST VOCATIONAL HISTORY

Stability: (Check one)

Stable
Reasonably Stable
Unstable

Job History Reflects: (Check all that apply)

Ambition
Lack of ambition
Conflict with peers
Good relationships with peers
Conflict with authority
Good relationships with authority figures

Comments:

Figure 3 (Cont'd)

11
PRIOR PSYCHIATRIC HISTORY

History of: (Check all that apply)
- Outpatient psychiatric care
- Psychiatric hospitalized
- Suicide thoughts
- Suicide gesture
- Suicide attempt

Comments: ________________________________________________________________

============================================================================

RELEVANT MEDICAL HISTORY

CURRENT MEDICAL PROBLEMS:
- No
- Yes

PAST MEDICAL PROBLEMS:
- No
- Yes

If "Yes" explain: __________________________________________________________

Current Medications:
- No
- Yes

If "Yes" list medications: __________________________________________________

History of head trauma:
- No
- Yes, no loss of consciousness
- Yes, loss of consciousness

If "Yes", explain: __________________________________________________________

============================================================================

DRUG/ALCOHOL HISTORY

Degree of Involvement: (Check one from each category)

<table>
<thead>
<tr>
<th>Alcohol Use</th>
<th>Drug Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current</td>
<td>Past</td>
</tr>
<tr>
<td>None</td>
<td>______</td>
</tr>
<tr>
<td>Mild</td>
<td>______</td>
</tr>
<tr>
<td>Moderate</td>
<td>______</td>
</tr>
<tr>
<td>Excessive use</td>
<td>______</td>
</tr>
</tbody>
</table>

Figure 3 (Cont'd)
Related Problem: (Check all that apply)

<table>
<thead>
<tr>
<th></th>
<th>Alcohol Related</th>
<th>Drug Related</th>
</tr>
</thead>
<tbody>
<tr>
<td>Military discipline</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Civilian arrests</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Motor vehicle accidents</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other accidents</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Blackouts</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Treatment</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(Specify Treatment) ____________________________________

Comments: ____________________________________________

CURRENT MARRIAGE AND FAMILY HISTORY

Length of Marriage ___ years
Number of children ___

Current relationship with family: (Check all that apply)

<table>
<thead>
<tr>
<th></th>
<th>Stable</th>
<th>Chaotic</th>
<th>Supportive</th>
<th>Unsupportive</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Close</td>
<td>Distant</td>
<td>Loving</td>
<td>Destructive</td>
</tr>
</tbody>
</table>

Comments: ____________________________________________

MILITARY HISTORY

Overall Performance: (Check one)

<table>
<thead>
<tr>
<th></th>
<th>Poor</th>
<th>Above average</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Average</td>
<td>Exceptional</td>
</tr>
</tbody>
</table>

Comments: ____________________________________________

Combat Duty:

<table>
<thead>
<tr>
<th></th>
<th>No</th>
<th>Yes</th>
</tr>
</thead>
</table>

Disciplinary Problems: (Check one in each category)

<table>
<thead>
<tr>
<th></th>
<th>NJP</th>
<th>Court Martial</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td></td>
<td></td>
</tr>
<tr>
<td>One</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Two</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Three or more</td>
<td></td>
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</tbody>
</table>

Current Disciplinary Action Pending:

<table>
<thead>
<tr>
<th></th>
<th>No</th>
<th>Yes</th>
</tr>
</thead>
</table>

Reason for Enlisting: ____________________________________

Figure 3 (Cont'd)
and family history, and military history. By responding to specific items and adding textual comments, the form allows the clinician the flexibility to easily and rapidly produce a complete patient history.

**Mental Status Examination**

A primary objective of the NAMHIS project was to develop a standardized mental status examination (MSE). A review of existing mental status examinations revealed no instrument that met the required functional specifications. However, due to its organization and content, the Missouri MSE was deemed suitable to use as a starting point. A number of studies had shown its predictive validity, and it could be tailored to fit Navy needs by adding to the content and making revisions to the format.

The development of the NAMHIS MSE module took place in two stages. First, the items in the Missouri MSE were reviewed for their relevance and contribution to the desired instrument. It was determined that all of the items were appropriate, but the MSE was considered incomplete for the intended purpose. Therefore, in the second stage, these sections were augmented. There were two primary reasons for adding items—to make the MSE more comprehensive and to provide the clinician with alternatives which described more adequately the clinical situations encountered in the military environment.

The NAMHIS MSE Form (see Figure 4) is divided into 14 sections: general appearance, motor activity, speech, interview behavior, flow of thought, mood and affect, suicide, homicide, content of thought, orientation, memory, intellect, insight and judgment, and comments. Each section is designed to encompass aspects of behavior found in the customary mental status report and to adequately describe observations of the patient. An index of severity was achieved by assigning a modifier of 1, 2, or 3. If all items within a section are within normal limits, the clinician can select the "Normal" alternative and continue to the next area being evaluated. If the items within a section do not adequately describe the clinical situation, the "other" category can be selected and the appropriate term or narrative description added.

The NAMHIS MSE provides a standardized and thorough protocol for evaluating and documenting the mental status of patients seen in mental health clinics. It is comprehensive yet concise, easy to administer, and includes items relevant to the Navy, allowing clinicians the flexibility to record and report unique and subtle characteristics of an individual's mental status.

**Reporting Capability**

NAMHIS has an extensive reporting capability consisting of both standardized and user-defined reports. The standardized reports fall into two categories—individual patient reports and statistical reports aggregated across multiple patients.

Individual patient reports include a display of patient registration data, a Report of Consultation, a printout of the patient's history, and a Mental Status Examination report. The Patient history and Mental Status Examination report are attached to the Report of Consultation and become a permanent part of the patient's medical record. These latter three reports can be produced for an initial visit or for a follow-up visit.

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### Instructions

For each section, check (X) box, or circle number for most appropriate answer(s).

If "NORMAL" is checked, simply go to the next section.

If not normal, rate (on the following scale) pertinent items only.

1 = MILD / TO A SMALL EXTENT
2 = MODERATE / TO SOME EXTENT
3 = SEVERE / TO A GREAT EXTENT

#### General Appearance (Normal)

<table>
<thead>
<tr>
<th>Item</th>
<th>Rating</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Push of Speech</td>
<td>1 2 3</td>
<td></td>
</tr>
<tr>
<td>Slowed</td>
<td>1 2 3</td>
<td></td>
</tr>
<tr>
<td>Hesitant</td>
<td>1 2 3</td>
<td></td>
</tr>
<tr>
<td>Loud</td>
<td>1 2 3</td>
<td></td>
</tr>
<tr>
<td>Soft</td>
<td>1 2 3</td>
<td></td>
</tr>
<tr>
<td>Mute</td>
<td>1 2 3</td>
<td></td>
</tr>
<tr>
<td>Slurred</td>
<td>1 2 3</td>
<td></td>
</tr>
<tr>
<td>Stuttering</td>
<td>1 2 3</td>
<td></td>
</tr>
<tr>
<td>Incoherent</td>
<td>1 2 3</td>
<td></td>
</tr>
<tr>
<td>Echolalia</td>
<td>1 2 3</td>
<td></td>
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</table>

#### Facial Expression

<table>
<thead>
<tr>
<th>Item</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Angry Outbursts</td>
<td>1 2 3</td>
</tr>
<tr>
<td>Irritable</td>
<td>1 2 3</td>
</tr>
<tr>
<td>Poor Grooming</td>
<td>1 2 3</td>
</tr>
<tr>
<td>Impulsive</td>
<td>1 2 3</td>
</tr>
<tr>
<td>Sensitive</td>
<td>1 2 3</td>
</tr>
<tr>
<td>Agitated</td>
<td>1 2 3</td>
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<tr>
<td>Defensive</td>
<td>1 2 3</td>
</tr>
<tr>
<td>Aggressive</td>
<td>1 2 3</td>
</tr>
<tr>
<td>Naive</td>
<td>1 2 3</td>
</tr>
<tr>
<td>Overly Dramatic</td>
<td>1 2 3</td>
</tr>
<tr>
<td>Manipulative</td>
<td>1 2 3</td>
</tr>
<tr>
<td>Dependent</td>
<td>1 2 3</td>
</tr>
<tr>
<td>Cooperative</td>
<td>1 2 3</td>
</tr>
<tr>
<td>Uncooperative</td>
<td>1 2 3</td>
</tr>
<tr>
<td>Demanding</td>
<td>1 2 3</td>
</tr>
<tr>
<td>Negativistic</td>
<td>1 2 3</td>
</tr>
<tr>
<td>Callous</td>
<td>1 2 3</td>
</tr>
</tbody>
</table>

#### Motor Activity

<table>
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<tr>
<th>Item</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interview Behavior (Normal)</td>
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</tr>
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<td>1 2 3</td>
</tr>
<tr>
<td>Irritable</td>
<td>1 2 3</td>
</tr>
<tr>
<td>Tense</td>
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</tr>
<tr>
<td>Impulsive</td>
<td>1 2 3</td>
</tr>
<tr>
<td>Hostile</td>
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<tr>
<td>Aggressive</td>
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<tr>
<td>Cooperative</td>
<td>1 2 3</td>
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<tr>
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<tr>
<td>Negativistic</td>
<td>1 2 3</td>
</tr>
<tr>
<td>Callous</td>
<td>1 2 3</td>
</tr>
</tbody>
</table>

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**Figure 4**

Page 15
| 76 | FLOW OF THOUGHT (NORMAL) | 1 | 1 |
| 77 | GOAL-DIRECTED | 1 | 2 | 3 |
| 78 | BLOCKING | 1 | 2 | 3 |
| 79 | SPONTANEITY | 1 | 2 | 3 |
| 80 | CIRCUMSTANTIAL | 1 | 2 | 3 |
| 81 | TANGENTIAL | 1 | 2 | 3 |
| 82 | PERSEVERATION | 1 | 2 | 3 |
| 83 | FLIGHT OF IDEAS | 1 | 2 | 3 |
| 84 | RAMBLING | 1 | 2 | 3 |
| 85 | LOOSE ASSOCIATION | 1 | 2 | 3 |
| 86 | INDETERMINATE | 1 | 2 | 3 |
| 87 | DISTRACTIBLE | 1 | 2 | 3 |
| 88 | ILOGICAL | 1 | 2 | 3 |

### Mood and Affect (Normal)

| 90 | MOOD AND AFFECT (NORMAL) | 1 | 2 | 3 |
| 91 | DEPRESSED MOOD | 1 | 2 | 3 |
| 92 | ANXIOUS MOOD | 1 | 2 | 3 |
| 93 | EXPANSIVE MOOD | 1 | 2 | 3 |
| 94 | ELEVATED MOOD | 1 | 2 | 3 |
| 95 | BAD AFFECT | 1 | 2 | 3 |
| 96 | INAPPROPRIATE AFFECT | 1 | 2 | 3 |
| 97 | FLAT AFFECT | 1 | 2 | 3 |
| 98 | CONSTRICTED AFFECT | 1 | 2 | 3 |
| 99 | BLUNT AFFECT | 1 | 2 | 3 |
| 100 | SHALLOW AFFECT | 1 | 2 | 3 |
| 101 | EUPHORIC AFFECT | 1 | 2 | 3 |
| 102 | Labile Affect | 1 | 2 | 3 |
| 103 | OTHER | 1 | 2 | 3 |

### Suicide (Absent)

| 104 | SUICIDE (ABSENT) | 1 | 2 | 3 |
| 105 | THOUGHTS | 1 | 2 | 3 |
| 106 | PLANS | 1 | 2 | 3 |

### Homicide (Absent)

| 108 | HOMICIDE (ABSENT) | 1 | 2 | 3 |
| 109 | THOUGHTS | 1 | 2 | 3 |
| 110 | PLANS | 1 | 2 | 3 |

### Other

| 111 | OTHER | 1 | 2 | 3 |
| 112 | CONTENT OF THOUGHT (NORMAL) | 1 | 2 | 3 |
| 113 | ASSAULTIVE IDEAS | 1 | 2 | 3 |
| 114 | ANTISOCIAL ATTITUDES | 1 | 2 | 3 |
| 115 | SUSPICIOUSNESS | 1 | 2 | 3 |
| 116 | POVERTY OF CONTENT | 1 | 2 | 3 |
| 117 | THOISAS | 1 | 2 | 3 |
| 118 | OBSESSION/CUMPLIIONS | 1 | 2 | 3 |
| 119 | FEELINGS OF UNREALITY | 1 | 2 | 3 |
| 120 | FEELS PERSECUTED | 1 | 2 | 3 |
| 121 | THOUGHTS OF RUNNING AWAY | 1 | 2 | 3 |
| 122 | SOMATIC COMPLAINTS | 1 | 2 | 3 |
| 123 | IDEAS OF GUILT | 1 | 2 | 3 |
| 124 | IDEAS OF HOPESNESS | 1 | 2 | 3 |
| 125 | IDEAS OF WORTHLESSNESS | 1 | 2 | 3 |
| 126 | EXCESSIVE RELIGIOUSITY | 1 | 2 | 3 |
| 127 | SEXUAL PREOCCUPATION | 1 | 2 | 3 |
| 128 | BLAMES OTHERS | 1 | 2 | 3 |
| 129 | DEPERSONALIZATION | 1 | 2 | 3 |
| 130 | Derealization | 1 | 2 | 3 |
| 131 | ILLUSIONS PRESENT | 1 | 2 | 3 |
| 132 | AUDITORY HALLUCINATIONS | 1 | 2 | 3 |
| 133 | VISUAL HALLUCINATIONS | 1 | 2 | 3 |
| 134 | TACTILE HALLUCINATIONS | 1 | 2 | 3 |
| 135 | OTHER HALLUCINATIONS | 1 | 2 | 3 |

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**Figure 4 (Cont’d)**
The Report of Consultation serves at least two purposes: (1) it provides hard copy documentation of the patient's visit for clinic files and for the patient's medical record; and (2) it serves as a report to the referral source by presenting an essential distillation of the mental health consultation. This eliminates the need for clinicians to write out the report by hand. The standardized report and the concomitant data entry process insure that a core of critical data are presented and that the clinical evaluations necessary to arrive at that information were performed. Thus, adherence to quality assurance guidelines is virtually automatic. At the same time the flexibility needed to accommodate individual patient characteristics and circumstances is built into the report by allowing the insertion of textual comments at several locations.

Besides these individual patient reports, NAMHIS has the capability to generate summary statistical reports involving the entire patient population of a clinic. It was concluded that information concerning each clinic's patient population characteristics (e.g., demographics, presenting problems, treatment needs) would be helpful to clinic managers in deciding policy, selecting personnel, and designing treatment programs. Therefore, existing reporting requirements were met, and additional management information capabilities were developed. The three statistical reports used by Navy administrators of mental health care services are the Monthly Managerial Report, the Monthly Quality Assurance Report and the Monthly Outpatient Morbidity Report.

In addition to these seven standardized reports, the COSTAR Report Generator can be used to produce user-defined special reports. These might consist of lists of patients seen each day by a mental health clinic showing patients' work location (duty station), cross tabulations of problems and diagnoses by occupational groups or work environments, percentage of patients evidencing suicidal ideation or gestures, or percentage of patients recommended for discharge from the Navy. A whole host of research questions in mental health can be addressed by use of the Report Generator.

**Future Plans**

A software package of approximately 50 psychodiagnostic tests written in the MUMPS language has been developed by the Veterans Administration and is available from the VA. It is planned to interface this psychological testing module with NAMHIS so that selected psychological tests can be rapidly scored by computer and reports generated for use by clinicians in the mental health clinic setting.

NAMHIS will be implemented initially in one clinic in the San Diego region. After test and evaluation of the system in this operational environment, any needed modifications will be made to insure that NAMHIS functions as intended. Following this milestone, implementation of NAMHIS will be considered for all clinics in the San Diego region. Ultimately it is expected that NAMHIS will be recommended for Navywide implementation.
References


(U) NAVY MENTAL HEALTH INFORMATION SYSTEM (NAMHIS): A PSYCHIATRIC APPLICATION OF COSTAR

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The Navy Mental Health Information System, NAMHIS, is a comprehensive, automated recordkeeping and reporting system designed to meet the needs of clinicians and administrators in Outpatient Navy Mental Health Clinics. The public domain version of the Computer Stored Ambulatory Record, COSTAR, was extensively modified to fulfill the software requirements of NAMHIS and covers the five system functions: Patient Registration, Encounter Data, Patient History, Mental Status Examination and Reporting capability. Data collection forms have been developed along with standardized reports of individual patient/clinician consultations.