Reporting Process for Hospitals' Quality Assurance Program

Final Report

By:
Kent Felgner
David Karp
Victoria Vogel
Management Systems Department

3 May 1990
# Table of Contents

**Executive Summary**  
1

**Introduction**  
3

**Approach & Findings**  
4

**Recommendations**  
6

**Action Plan**  
13

**Appendices**

A. Quality Assurance Organization and Information Flow

B. Draft Standard Initial and Follow-Up Report Formats

C. Recommended Quality Assurance Reporting Groups

D. Quality Assurance Scheduling Process

E. Quality Assurance Database System Specifications

F. Report Codification and Data Entry Process

G. Checklists for Tracking/Trending/and Coding Initial and Follow-Up Reports

H. Oral Presentation Slides
EXECUTIVE SUMMARY

The University of Michigan Medical Center implements a Quality Assurance Program, under the guidance of the Hospital Quality Assurance Committee (HQAC), to enhance patient care through the continual assessment of care and discoveries of opportunities for improvement. As part of the continual assessment, the program requires HQAC to collect quarterly and/or annual reports from approximately 75 departments/services/committees and then summarize the reports in one quarterly hospital-wide report for various governing bodies. Unfortunately, HQAC's ability to process all the information received is hampered by a number of factors. The Management Systems project team analyzed these factors and made various recommendations to increase the information processing ability of the Quality Assurance Program.

The team discovered that the major factors hindering HQAC were the number of reports submitted, length and completeness of the submitted reports, unmanageable scheduling of report due dates, and the ineffectiveness of the quality assurance database system.

Under the current system, more reports were submitted to HQAC than were necessary. Since all submitted reports were being reviewed, unnecessary reports simply reduced the amount of staff time available for other jobs. The system was also extremely labor intensive due to the varying lengths of reports. Some of the extremely lengthy quarterly reports were submitted in three inch binders, requiring hours of staff time to review and extract the important information. There were also a large number of reports that lacked some of the important information. As a consequence, in 1989, of the 500 submitted reports, only approximately 25 were useable for HQAC in preparing its quarterly report summarizing hospital quality assurance efforts.

The scheduling of report submission dates led to an unmanageable flow of reports to HQAC on the four quarterly due dates, even though only 20 percent of the expected reports were submitted. With all the reports arriving during one day, timely review and feedback was impossible. The quality assurance database system, into which report data was entered, also seemed inadequate for HQAC needs. The primary objection was that the system is not user-friendly, thereby preventing necessary tasks like analyzing and retrieving stored data. This also made the system ineffective at tracking the status, trends, and commonalities of the reports. All of these factors offer significant opportunities for improvement of the information processing ability for the Quality Assurance Program.
The five recommended improvements are the following:

1. Collect only those reports that are necessary
   This step will cut the number of reports submitted per year to approximately 360, a 40% decrease over 1989 levels, leading to a corresponding reduction in staff time to review the reports.

2. Finalize and implement a standardized report format
   Such a form would greatly reduce the amount of time required to interpret the report, ensure completeness of the report by specifying exactly what information is required, and make it easier to track report status and content.

3. Implement a schedule with a manageable, uniform report flow
   A recommended schedule is shown in Figure 2 of the report. It provides a flow of reports that would allow accurate and timely feedback from HQAC to the reporting groups and from the governing bodies to HQAC regarding its quarterly hospital-wide summary report.

4. Create a new Quality Assurance Database System using ORACLE
   This system would be user friendly and have all possible options required by HQAC including the ability to track trends and commonalties in the reports. Complete system specifications are contained in Appendix E.

5. Review Staffing Needs
   With these recommendations, the anticipated average time to review and interpret a quarterly report is 20 minutes, a 300 percent reduction in staff time from the current system. This time savings, coupled with the 40 percent reduction in the number of reports, may offer an opportunity for different staffing allocations.

   These improvements should be made as soon as possible, definitely completed within one year. For as soon as these changes are made, the staff hours required to monitor the program will decrease, there will be timely and accurate feedback, and the system will allow for efficient tracking of the trends and commonalties within the reports.
INTRODUCTION

In September 1989, the University of Michigan Hospital revised the Quality Assurance Program. The program was designed to enhance patient care through the continuing assessment of care and the promotion of improvements based on the opportunities discovered by the assessments. The specifications providing the framework for the program are documented in the "Hospitals’ Quality Assurance Program" (September 1989).

As the documentation specifies, program implementation is the responsibility of the Hospitals’ Quality Assurance Committee (HQAC) with administrative assistance from the Quality Assurance & Information Services Unit of the Medical Information Department. A sketch of the program organization and information flow is provided in Appendix A. As the Appendix shows, there are approximately 75 departments, committees, and services that submit various reports to HQAC. These reports can be categorized into four types:

1. Annual Quality Assurance (QA) Plans
2. Quarterly QA Reports
3. Annual QA Reports
4. Follow-Up Reports.

As the administrative support for HQAC, the Quality Assurance & Information Services Unit is responsible for the collection of the reports, the central documentation of the reported patient care activities, and the creation of HQAC's quarterly report for review and evaluation by the appropriate hospital administration shown in Appendix A. It was the ability to do these activities, the information processing ability of the Quality Assurance Program, that this project attempted to improve. The goal being to increase the efficiency in monitoring report status, create efficient and timely feedback and information flows, and track trends and commonalties within the reports.
The project team began by reviewing the Hospitals’ Quality Assurance Program through:

1. Weekly discussions with the client group, 3 members of Hospital Quality Assurance Steering Committee:
   Roseanne Whitehouse, Staff Associate Ambulatory Care Services
   Ingrid Flemming, Assistant Director, Medical Information Services
   Linda Creps, Director, Medical Information Services

2. Research of pertinent documents including the Hospitals’ Quality Assurance Program, and Medical Staff By-laws.

With this background information, the team visited the current system to view the process, flowcharted the system, and collected relevant data regarding the reports and staff time. These activities led to an understanding of program requirements and the tracking and analysis of QA operations.

The program requirements are displayed in Appendix A, which shows the groups that must report and the types and frequency of reports they submit. Upon discussions with the client group, it was clear that under the current system more reports were submitted to HQAC than were required or necessary. In 1989, for example, there were approximately 500 quality assurance reports submitted, from the only 20 percent of participants who actually reported. As Appendix A shows, however, only approximately 360 reports per year, from all participants, are actually required and necessary.

Tracking QA operations, through discussions with the client group, also pointed to other opportunities for improvement of the QA Program’s information processing ability. With the current system, submitted reports often lacked information or contained excessive amounts of unnecessary information. Once again, 1989 data shows that roughly 25 of the 500 reports collected were useable by HQAC. Report due dates also frequently were not met, with approximately 80 percent of the groups failing to report in 1989. When the dates were met, the number and size of submitted reports were unmanageable, making timely review and feedback impossible.
Quarterly report sizes averaged from 4 to 22 pages in length, thus requiring approximately 45 minutes to 2.5 hours to review.

Once reports were received, the Quality Assurance & Information Services unit entered the report into their dBase III database. The database was used to store important report data, but rarely, if ever, was the stored data retrieved or analyzed due to the complications involved. This made the database ineffective at tracking the status, trends, and commonalities of the reports.
RECOMMENDATIONS

To improve the information processing ability, we present five recommendations which will result in an implementation of the Quality Assurance Program that is both manageable and efficient for all groups involved. A summary of the recommendations follows:

1. Collect only necessary reports
2. Finalize standardized report formats
3. Implement a Quality Assurance Scheduling Process
4. Utilize a user-friendly database system for data manipulation
5. Review staffing requirements given the potential for improvement

COLLECT ONLY NECESSARY REPORTS

The first recommendation is that HQAC collect only those reports, shown in Appendix A, that are necessary. This change will allow the number of reports received by HQAC to drop by approximately 40% this year and will account for complete reporting from all groups. The difference that will result can be seen in Figure 1, below.

![Bar chart showing changes in estimated number of reports before and after implementation of Recommendation 1.](image-url)
FINALIZE STANDARDIZED REPORT FORMATS

The second recommendation is that a standardized report format be finalized and then implemented. Appendix B shows the current draft version of the recommended standardized form. The finalized version should contain blank space to simplify the task of fitting responses on the form and to increase the readability of the form once it is filled out. This will probably require a two sided form. The content of the form, however, should remain as shown in Appendix B, since the information that is asked is precisely the necessary and sufficient information for HQAC's purposes.

The time required to interpret and codify the standard report should be under 20 minutes, well below the 45 minute to 2.5 hours that it currently requires. The benefits that HQAC and the Quality Assurance and Information Services Unit will see as a result of the report standardization are:

1. Adherence to the Quality Assurance Program
2. Complete reporting
3. Assignment of responsibility for reports
4. Easier tracking of report status and report content
5. 300% Time savings in the interpretation of the report.

IMPLEMENT A QUALITY ASSURANCE SCHEDULING PROCESS

The third recommendation is to implement a Quality Assurance Scheduling Process to provide a manageable, uniform flow of information to HQAC. Our proposed process, shown in Figure 2 (next page), involves seven weeks of report collection, two weeks of HQAC's report preparation, and ten weeks for the review of the HQAC report.

Allocating seven weeks to collect reports is based on Ingrid Flemming's suggestion to have weekly report collection with a maximum of ten reports due per week, which allows timely and accurate feedback. Additionally, Quality Assurance requirements mandated keeping all services within a department together and assigning each group a specific week to report. The recommended breakdown into groups is shown in Appendix C. By observing the above constraints, seven groups and therefore seven weeks are required.
The next two weeks of the process are allocated for the preparation of the HQAC report. This task will involve summarizing the collected data and then, based on the summary, writing the report. Once completed, the report is subsequently submitted for review and feedback, involving revision if necessary. This last part of the process is designed with flexibility for adapting to the schedules of the groups that receive the report and to also allow necessary time for feedback from these groups. The resulting process is a nineteen week cycle. To help clarify these results, Appendix D contains a flowchart that diagrams the scheduling process from a HQAC and Quality Assurance & Information Services perspective.

In order to satisfy the requirements of the Quality Assurance Program the reporting process must occur four times a year. Our recommended scheduling to fulfill this requirement is shown in Figure 3 (following page). As this figure shows, we recommend beginning the process at the beginning of February, May, September and November. The May collection process would also include the Annual Plan and Annual Report collection. Thus, scheduling prevents August and late December reporting, periods when it would be difficult for the groups to satisfy the deadline because of new residents and/or vacation time. Note that this schedule also places a heavy workload on Quality Assurance & Information Services during the months of April, July, October/November, and late December/January, with the heaviest workload during July.
We recommend setting each group's quarterly report due dates using a spreadsheet package like Excel. This will require the user to enter the process starting dates and will then generate the group due dates. Once the initial yearly quality assurance schedule is determined, as in Figure 3 for example, report due dates can be generated.

Figure 3. Recommended Yearly Quality Assurance Schedule

A yearly schedule, such as that in Figure 3, would provide:

1. A smooth flow of information to HQAC and Quality Assurance & Information Services
2. An accountability mechanism for departments, services, and committees
3. Continuity of reporting by departments, services, and committees
4. Increased awareness of everyone's role and responsibility

UTILIZE A USER-FRIENDLY DATABASE SYSTEM FOR DATA MANIPULATION

The fourth recommendation regards the database used by Quality Assurance & Information Services to store the data from the
submitted reports. In order to develop the ability to track report
trends and commonalities in a user friendly database system, we
recommend using the application "ORACLE" to create a new Quality
Assurance Database Management System. The specifications for the
recommended system, which were written with suggestions from
Ingrid Flemming and Roseanne Whitehouse, are presented in
Appendix E. The specifications may be given directly to a
programmer who could, with minimal time commitments from
outside sources, create the database system that we recommend.

This database system would have a total of seven options.
Depending on the type of access granted a user: Professional, Data
Entry Clerk, or Departmental; only some or all of the options would
be shown. The list of options, their description, and the type of user
that could use each option is given in Table 1 (following page).

Table 1. Database Options

<table>
<thead>
<tr>
<th>OPTION</th>
<th>FUNCTION</th>
<th>ACCESS LEVEL REQUIRED</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Maintain Reports</td>
<td>Add, Modify, Delete, or Print Reports</td>
<td>Professional Data Clerk</td>
</tr>
<tr>
<td>2. Maintain Scheduler</td>
<td>Set, or View Due Dates View Status of Reports</td>
<td>Any - but departmental can only view its own dates and status</td>
</tr>
<tr>
<td></td>
<td>View Status of Reports</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Print Upcoming Report Reminders or Late Notices</td>
<td></td>
</tr>
<tr>
<td>3. Maintain Data Summary</td>
<td>Sort, or View Records based on any field</td>
<td>Professional Data Clerk</td>
</tr>
<tr>
<td>4. Maintain Passwords</td>
<td>Add, Modify, or Delete users, user identifications, passwords, or access levels</td>
<td>Professional</td>
</tr>
<tr>
<td>5. Maintain Tracker System</td>
<td>Add, Modify, or Delete the Tracking/Trending/ and Coding elements</td>
<td>Professional</td>
</tr>
<tr>
<td>6. Back-Up</td>
<td>Copy data to storage mechanism such as floppy or hard disk drive</td>
<td>Professional Data Clerk</td>
</tr>
<tr>
<td>7. Exit</td>
<td>Leave System</td>
<td>Any</td>
</tr>
</tbody>
</table>
With the database, the recommended process of codifying and entering a report is shown in Appendix F. When the report is given to Quality Assurance & Information Services, it will be date stamped, assigned a report number, interpreted by a professional and then coded onto a tracking/trending/coding checklist similar to the one in Appendix G. The checklist and the report, the latter is needed for basic information, will then be given to a data entry clerk who will enter the data onto the database system exactly as it appears on the checklist and report.

As mentioned earlier, we recommend ORACLE be used to build this database system. Several IBM PC compatible database applications were reviewed, including Lotus, dBase III, dBase IV, Paradox, RBase, and ORACLE. The criteria for acceptance was that the application be user-friendly, menu-driven, table relational and allow custom designed help screens. dBase III, which is currently in use, failed to meet all of these criterion and therefore the possibility of modifying the current system was rejected. The two database applications that met these criteria were RBase and ORACLE. ORACLE’s ability to roll up on to the mainframe without any additional programming far outweighed the additional disk space, approximately 2 Mb, required, since the long term plan is to put the Quality Assurance Database System onto the mainframe. If necessary, because of the disk space required by ORACLE, a 40 Mb hard drive could be purchased for approximately $400 (wholesale cost). With the archiving of the current dBase III database system and data onto floppy disks, it’s very likely, however, that enough space for a new ORACLE system would be freed on the existing hard drive.

The database system as specified in Appendix C would allow record sorting on a variety of keys to track the trends and commonalties in the reports, a primary goal of the implemented Quality Assurance Program. Its basic design characteristics would also make the database system both powerful and user-friendly.

REVIEW STAFFING GIVEN THE POTENTIAL FOR IMPROVEMENT

The fifth recommendation is to review the staffing requirements after the database management system is completed. Originally, Medical Information Services required between 45 minutes and 2.5 hours to review and interpret a QA quarterly report.
With the recommendations in place, the average time needed to review, interpret and enter a QA quarterly report should be no more than 20 minutes, an average time reduction of 300 percent per report. Given the magnitude of reports received by HQAC, this would result in a substantial time savings and consequently, it may be advisable to allocate staffing differently.
ACTION PLAN

The Hospital Quality Assurance Steering Committee can improve the information processing ability of the Quality Assurance Program in three stages outlined below.

1. Finalize standardized report formats and schedule. Present Detailed Specifications to programmer to build IBM PC Quality Assurance database system.

   Begin Planning with Hospital Information Systems for upgrade to Mainframe.

2. Monitor and Record all Quality Assurance Activities using database system.

3. Upgrade database system to hospital mainframe.

Figure 4 shows the advised, realistic time frame for completion of these stages.

Time Frame for Project Usage:

Present Time → Six Months to One Year → One to Two Years from Now

GOAL:

Finalize Standardized Report Formats
Finalize Schedule
Begin Building QA Database

Use Scheduling System and PC Database for all QA Activities
Move Entire System to Hospital Mainframe

Figure 4. Time Frame for Action Plan
As the figure shows, within six months Hospital Quality Assurance Steering Committee should oversee the finalizing of the report format and schedule. The main focus should be on the scheduler, since it appears that the standardized format will be passed on to UARCO (professional form developers). Therefore, as mentioned in Recommendations, a final decision needs to be made on the yearly schedule, and then the schedule dates need to be chosen and groups notified of their yearly due dates.

During this time, the creation of the database system also ought to be started, so that within one year the system will be operational. Once operational, Quality Assurance & Information Services should switch from their present database system to the new one. This will greatly improve their efficiency in monitoring reports' status and tracking the trends and commonalties in reports. The planning for the move to the mainframe should also begin as soon as possible.

Overall, implementation of these recommendations will significantly improve both the quality and efficiency of QA reporting. The better quality of QA reporting will allow HQAC to produce more accurate summary reports. The increased reporting efficiency will improve HQAC's ability to monitor reports and reduce costs through time savings. The end result being an increase in the quality of implementing the Quality Assurance Program.
Appendix A

Quality Assurance Organization and Information Flow
Appendix C

Recommended Quality Assurance Reporting Groups
Group 1
8 Clinical Departments:
Anesthesiology
- Pediatrics
Dentistry
Dermatology
Family Practice
Neurology
Obstetrics/Gynecology
Ophthalmology
Otolaryngology

Group 3
2 Clinical Departments:
Pathology
- Anatomical
- Clinical
- General
Pediatrics
- Cardiology
- Endocrinology
- General
- Genetic
- Hematology/Oncology
- Infectious Disease
- Neonatology
- Neurology

Group 4
1 Clinical Department:
Surgery
- Emergency
- General
- Neurosurgery
- Orthopaedics
- Pediatrics
- Plastic & Reconstructive
- Thoracic
- Urology
- Vascular

Group 5
4 Clinical Departments:
Physical Medicine & Rehab.
Psychiatry
- Adult
- Child
Radiation Oncology
Radiology
- Pediatric

Office of Clinical Affairs

Group 6
Hospital Departments:
Dietetics
Nursing
Social Work
Laboratories
Pharmacy
Physical Therapy
Respiratory Therapy
Patient-Staff Relations
Patient Services
Occupational Therapy

Group 7
Medical Staff Committees
Ambulatory Care
Credentials
Infection Control
Pharmacy & Therapeutic
Tissue & Invasive Procedures
Transfusion

Adjunct Participants
Appendix D

Quality Assurance Scheduling Process
Set Group Due Dates for year

Notify each Dept./Service of Dates

Send Reminder Notices 1 month prior to Due Date

Dept./Service submits report by Due Date

Yes

Codify Report & Enter in Database (See Appendix F)

No

Send Late Notice within 1 week

Collect Late Report

Summarize Database Data

**WEEK 8**

Report Review

Submit to QA Committee

**WEEK 14**

Revise

Submit to Steering Committee

**WEEK 10**

Submit to:

- ECCA **WEEK 15**
- Medical Staff **WEEK 15**
- CA&F **WEEK 16**
- Executive Board and Regents through ECCA and CA&F **Week 16/17**

Report Preparation

Write Summary Report

**WEEK 8/9**

End of third scheduling process for year
Appendix E

Quality Assurance Database System Specifications
The purpose of this appendix is to list and explain the specifications of the University of Michigan Hospitals' Quality Assurance Program's computer database management system and to serve as a basis for the construction of the computer database management system.

The database system stresses a menu-driven, table-relational design; that is, the system is composed of several tables, each containing necessary attributes for quality monitoring. There are seven tables in this system (Log, Report, Report Data, Follow-up Report, Follow-up Report Data, Contact and Department) and each is interconnected through a common key (usually the record #). The specific variables in each table are listed in Figure 1 (following page).

In order for the system to operate efficiently, it is necessary to minimize the worker-hours required to enter the report information into the computer system. Through the examination of the quality monitoring process, our project team has determined that the Quality Assurance Program reports and follow-up reports must first be reviewed by professionals who will interpret the report and fill out the tracking/trending/coding checklist (see Appendices G and H). The checklist is divided into four sections: important aspect of care, indicator, problems identified and actions to be taken. This checklist will then be given to data entry clerks who will in turn enter the data as it appears on the checklist into the database system. An explanation of how the data will be entered will follow later in this document.

To sign onto the system, an executable batch file must be run through a simple statement (i.e. run quality system). Immediately, the user will be prompted to enter his/her user identification and password (both of which are assigned to every user or department by a professional). If the user identification and password match a row in the log table, access will be given to the user based upon a pre-determined security level. If the two entries do not match, the user will be given the opportunity to reenter the appropriate user identification and password or exit the system. Depending upon the level of access given the user a menu with various actions will appear.

Due to the nature of this system, there are three distinct types of access within the system: professional access, data clerk access and departmental access. Professional access gives the user seven
Log Table
Name: Name of user (usually a personal name or a department); basic variable
Userid: Unique user identification code; key variable
Password: Unique user password; basic variable
Access: User access level; basic variable

Report Table
Report Number: Unique coding number for each report; key variable
Report Type: Type of report (i.e. quarterly report); basic variable
Multidisciplinary: States whether the report is multidisciplinary; basic variable
Due Date: Date on which the report is due to Medical Information; Derived
Date Received: Date on which the report arrives at Medical Information; basic variable
State: Status of report (either active or inactive); basic variable
State Date: Date on which state was established; basic variable
Userid: see Log Table; foreign key
Follow-up Status: States whether the report involves a follow-up report; basic variable
Follow-up Number: Unique coding number for each follow-up report; foreign key
Follow-up Date: Due date of follow-up report; virtual basic variable

Report Data Table
Report Number: see Report Table; foreign key
Contact Number: Code number of contact person; foreign key
Department Code: Code of department submitting the report; foreign key
Important Aspect of Care: see checklist; basic variable
Indicator: see checklist; basic variable
Problem 1: see checklist; basic variable
Problem 2: see checklist; basic variable
Problem 3: see checklist; basic variable
Action 1: see checklist; basic variable
Action 2: see checklist; basic variable
Action 3: see checklist; basic variable

Department Table
Department Code: see Report Data Table; key variable
Department Name: Name of department submitting report; basic variable
Department Type: Type of department (i.e. Clinical); basic variable
Liaison Name: Name of quality assurance liaison within department; basic variable
Liaison Address: Address of liaison name; basic variable
Liaison Phone: Phone number of liaison name; basic variable

Contact Table
Contact Number: see Report Data Table; key variable
Contact Name: Name of contact person; basic variable
Contact Title: Title of contact person; basic variable
Contact Address: Address of contact person; basic variable
Contact Phone: Phone of contact person; basic variable

Follow-up Report Table
Follow-up Number: see Report Table; key variable
Report Type: same as in Report Table; basic variable
Due Date: same as in Report Table; derived (from scheduler) variable
Date Received: same as in Report Table; basic variable
Department Code: same as in Report Table; foreign key
State: same as in Report Table; basic variable
State Date: same as in Report Table; basic variable
Userid: see Log Table; foreign key
Follow-up Status: same as in Report Table; basic variable
Next Follow-up Number: Follow-up number of remonitoring; basic variable
Follow-up date: Remonitor due date; basic variable

Follow-up Report Data Table
Follow-up number: see report table; foreign key
Problems resolved: Were problems resolved (yes/no); basic variable
Improvement: Were there improvements (yes/no); basic variable
Remonitor Date: Date of next remonitoring; basic variable
Disposition: Status of report; basic variable
Remonitor number: Next follow-up number; basic variable.

Figure 1. Seven Table System
options: maintain reports, maintain scheduler, maintain data summary, maintain passwords, maintain tracker system, back-up system and exit. The professional menu is listed in Figure 2 (below). Data clerk access gives the user five options: maintain reports, maintain scheduler, maintain data summary, back-up system and exit. The data entry clerk menu is listed in Figure 3 (following page). Departmental access gives the user limited options of maintain scheduler and maintain data summary and the exit option. The departmental menu is listed in Figure 4 (following page).

PROFESSIONAL ACCESS MENU

MAIN MENU

QUALITY ASSURANCE

TRACKER OPTIONS

(1) Maintain Reports
(2) Maintain Schedule
(3) Maintain Data Summary
(4) Maintain Passwords
(5) Maintain Tracker System
(6) Back Up
(7) Exit

PROFESSIONAL ACCESS MENU

Maintain Reports
Add Modify Delete Print Report or Follow-up Report

Maintain Scheduler
Set Due Dates View Due Dates Summarize Future Notices Summarize Late Notices
Generate Future Notices, Generate Late Notices
Print

Maintain Data Summary
View Print

Maintain Passwords
Add Modify Delete

Maintain Tracker System
Add Elements Delete Elements Modify Elements

Figure 2. Professional Access Menu
Figure 3. Data Entry Clerk Access Menu

DEPARTMENTAL ACCESS MENU

Figure 4. Departmental Access Menu
The following is a list and explanation of the various menu options mentioned above:

1. Maintain Reports

This options allows the user to add, modify, delete and print reports (initial and follow-up). If selected, the maintain reports options prompts the user to another menu with eight options: add report, add follow-up report, modify report, modify follow-up report, delete report, delete follow-up report, print report and print follow-up report. Each option does the following:

a. add report or follow-up report: This allows the user to add a report or follow-up report by producing a complete report or follow-up checklist identical to the list used by data clerks, thus allowing the user to enter the information by selecting the appropriate choices on the computer tracking/trending/coding checklist via arrow keys or a short number/key code.

b. modify report or follow-up report: This allows the user to change the checklist answers on the computer within a report or follow-up report. A particular report or follow-up report is selected by the user via report number or the combination of department and due date. The checklist mentioned above then appears on the computer screen with the original selections highlighted. The user then changes the selections through use of the arrow keys or a short number/key code.

c. delete report or follow-up report: This allows the user to delete a report from the database system. The report is selected either by report number or by department and due date. Before deleting the report, the user is given an opportunity to prevent the deletion. When the user fails to prevent the deletion, the report is deleted from the database.

d. print report or follow-up: This allows the user to print out a report or follow-up report by record number or department and due date. The print out appearance is shown in Figure 5 (following page).

Note: These options are given to those users with professional or data clerk access only.
<table>
<thead>
<tr>
<th>Record Number</th>
<th>100001</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contact Number</td>
<td>101</td>
</tr>
<tr>
<td>Report Type</td>
<td>Clinical</td>
</tr>
<tr>
<td>Contact Name</td>
<td>John Doe</td>
</tr>
<tr>
<td>Due Date</td>
<td>04-23-1990</td>
</tr>
<tr>
<td>Contact Title</td>
<td></td>
</tr>
<tr>
<td>Multidisciplinary</td>
<td>no</td>
</tr>
<tr>
<td>Contact Address</td>
<td></td>
</tr>
<tr>
<td>Status</td>
<td>Active</td>
</tr>
<tr>
<td>Status Date</td>
<td></td>
</tr>
<tr>
<td>Contact Phone</td>
<td>936-4040</td>
</tr>
<tr>
<td>Userid</td>
<td></td>
</tr>
<tr>
<td>Follow-up Status</td>
<td>yes</td>
</tr>
<tr>
<td>Follow-up Number</td>
<td>1001</td>
</tr>
<tr>
<td>Follow-up date</td>
<td>04-23-1991</td>
</tr>
</tbody>
</table>

**Important Aspect of Care:**
- Type of care: Diagnostic
- Priority: High-risk by omission

**Indicator:** Elements of Quality
- Continuity of Care, Transfer of Information
- Structure

**Problem 1:** Type of Problem: Diagnosis
- Category of Problem: Systems
- Severity of Problem: Risk to patients
- Impact of Problem: Hospital

**Action 1:** Type of Action: Knowledge, Orientation, In-service training
- By Whom: 
- By What Date: 

**Problem 2:** Type of Problem:
- Category of Problem:
- Severity of Problem:
- Impact of Problem:

**Action 2:** Type of Action:
- By Whom:
- By What Date: 

**Problem 3:** Type of Problem:
- Category of Problem:
- Severity of Problem:
- Impact of Problem:

**Action 3:** Type of Action:
- By Whom: 
- By What Date: 

Figure 5. Sample Record Entry
2. Maintain Scheduler

This option allows the user to set due dates for future reports, view current due dates, summarize future notices (report or follow-up report), summarize late notices (report or follow-up report), generate future notices, generate late notices and print due dates or summaries. Each of the options are defined below:

a. set due dates for future reports: This option allows the user to set the due dates for future reports. As mentioned earlier in the project scheduling section of this document, the reports are spread out over a wide time period to even out the workload for Medical Information. This option sets the due dates for reports due during the next year by calling a project scheduling program which when run will produce the list of due dates up to a user specified future time.

b. view current due dates: This option allows the user to view but not change the due dates of both reports and follow-up reports. If the user access is departmental, the user may only view the due dates of that department (this is ensured by the initial user sign-on and is one of only three options in this section open to departmental access).

c. summarize future notices: This option gives the user a summary, on the computer screen, of upcoming reports or follow-up reports based on due date or department.

d. summarize late notices: This options gives the user a summary, on the computer screen, of late initial or follow-up reports ordered by due date or department.

e. generate future and late notices: These two options produce standardized forms addressed to particular department liasons whose departments have either a report or follow-up report due in a time frame specified by the user or have failed to submit a report or follow-up report.
f. print due dates and summaries: This option allows the user to print either the list of report or follow-up due dates in a user specified time window or the summaries generated above. Departmental access allows the user to print both due dates and summaries for that particular department only. Note: Departmental access gives authorization to view or print the same departmental due dates or summaries only.

3. Maintain Data Summary

This option allows the user to sort and then view records based on indicator, aspects of care, departments or actions to be taken. This is the trending aspect of the database system which will aid Quality Assurance & Information Services in the production of Hospitals' Quality Assurance Committee's quarterly report. Note: This option is given to Professionals and Data Entry Clerk users only.

4. Maintain Passwords

This option allows the user to add, modify or delete users, user identifications, passwords and access levels. The specific options are listed below:

a. add user: This option allows for the addition of a new user. The user identification and passwords are entered twice to ensure accuracy. Assuming the two entries of user identification and password match, the computer systems asks for the access level required by the new user.

b. modify user: This option allows for the changing of a user identification, password or access level. The user will be prompted to enter the old user identification and password and assuming a match, will be given the option of changing a user identification, a password, an access level or any combination of the three. Should either the user identification or password need to be changed, the user will be asked to enter the new user identification or password twice to ensure accuracy. A new access level must be entered only once. The new user identification and/or password does not become active until typed twice identically.
c. delete user: This option allow for the deletion of a user. In order to prevent accidental deletion, confirmation by the current user is necessary before deletion is possible.
Note: Only users with Professional access are given this option

5. Maintain Tracker System

This option allows the user to add, modify or delete tracking, trending and coding elements from the computer database system checklist. This option increases the future flexibility of the computer database management system. The specific selections are listed below:

a. add elements: This option allows the user to add additional elements to the computer checklist. The user is asked through a menu driven process to show the location of the new element (i.e. important aspect of care, indicator, problems identified or actions to be taken).

b. modify elements: This option allows the user to change an element on the computer checklist. Through a simple menu driven process, the user selects the element to be altered. The user then types the replacement element.

c. delete elements: This option allows the user to remove an element from the computer checklist. The process of deletion is similar to modification, accept for the fact that the element is deleted instead of altered.

All previous reports and follow-up reports may be affected by any of these three structure changes.
Note: Only users with Professional access are given this option
6. Back-up

This option allows the user to create a back-up version of the computer database management system onto either a hard drive, floppy disk or other storage mechanism. Note: Access levels of professional and data entry clerk may perform this function.

7. Exit

This allows the user to exit the system and is usable by all access levels.
Appendix F

Report Codification and Data Entry Process
Data Entered into Database

Checklist and Original Report Given to Data Entry Clerk

Report Number Assigned and Checklist (see Appendix G&H) Filled Out by a Professional

Date/Time Stamped by Quality Assurance on Arrival

Report Submitted

Report Complete? NO

Report Sent Back to Contact Person or Department Liaison with Documentation Detailing Missing Information (within one week)
Appendix G

Checklists for Tracking/Trending/and Coding Initial and Follow-Up Reports
UNIVERSITY OF MICHIGAN HOSPITALS QUALITY ASSURANCE PROGRAM

TRACKING/TRENDING/CODING ELEMENTS FOR HQA INITIAL REPORTS

STUDY NUMBER: _______________________

Multi-disciplinary and/or integrated study: Yes____ No____

Participants:

1. Submitting area.
   a. Important Aspect of Care
   b. Clinical Indicator

2. Important Aspect of Care
   a. Type of Care
      1.) Diagnostic
      2.) Therapeutic
      3.) Preventive
      4.) Rehabilitative
      5.) Supportive
      6.) Palliative
   b. Priority
      1.) High-volume
      2.) High-risk by:
         • omission
         • commission
      3.) Problem-prone for
         • patients
         • providers

3. Indicator
   a. Elements of Quality
      1.) Effectiveness
         • Practitioner Performance/Competence
         • Support Staff Performance/Comp.
         • Medical Record System
         • Risk Minimization
         • Identification of Patient Needs
         • Achievement of Desired Outcome
      2.) Acceptability to Patient
         • Responsiveness to perceived needs
         • Level of communication, concern, courtesy
         • Timeliness of Care
         • Achievement of Desired Outcome
      3.) Accessibility/Availability
         • Access to Care
         • Availability of Care
         • Emergency and After-hours Care
      4.) Efficiency/Appropriateness
         • Timeliness of care
         • Identification of patient needs
         • Appropriate use of resources
      5.) Continuity of Care
         • Coordinated/continuous care
         • Transfer of Information
         • Treatment follow-up
   b. Type of Indicator
      1.) Structure
      2.) Process
      3.) Outcome
<table>
<thead>
<tr>
<th>4. Problems Identified</th>
<th>a. Type of Problem</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.) Diagnosis</td>
<td>2.) Treatment</td>
</tr>
<tr>
<td>3.) Patient Care Decisions</td>
<td>4.) Patient Care Process</td>
</tr>
<tr>
<td>5.) Hospital Policies</td>
<td>6.) Hospital Systems</td>
</tr>
<tr>
<td>7.) Hospital Personnel</td>
<td>8.) Equipment or Supplies</td>
</tr>
<tr>
<td>b. Category of Problem</td>
<td></td>
</tr>
<tr>
<td>1.) Knowledge</td>
<td>2.) Behavior</td>
</tr>
<tr>
<td>3.) Systems</td>
<td></td>
</tr>
<tr>
<td>c. Severity of Problem</td>
<td></td>
</tr>
<tr>
<td>1.) Threat to patients' lives</td>
<td>2.) Risk to patients</td>
</tr>
<tr>
<td>3.) Compromise of patient or staff safety</td>
<td>4.) Significant effect on hospital staff</td>
</tr>
<tr>
<td>5.) Lack of compliance with standards, policies, or procedures</td>
<td></td>
</tr>
<tr>
<td>d. Impact of Problem</td>
<td></td>
</tr>
<tr>
<td>1.) Patient/s</td>
<td>2.) Provider/s</td>
</tr>
<tr>
<td>3.) Hospital</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>5. Actions To Be Taken</th>
<th>a. Type of Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.) Knowledge</td>
<td></td>
</tr>
<tr>
<td>• Orientation</td>
<td></td>
</tr>
<tr>
<td>• In-service training</td>
<td></td>
</tr>
<tr>
<td>• Continuing education</td>
<td></td>
</tr>
<tr>
<td>• Policies &amp; Procedures changes</td>
<td></td>
</tr>
<tr>
<td>• Provision of reference material</td>
<td></td>
</tr>
<tr>
<td>2.) Behavior</td>
<td></td>
</tr>
<tr>
<td>• Informal counselling</td>
<td></td>
</tr>
<tr>
<td>• Formal counselling</td>
<td></td>
</tr>
<tr>
<td>• Assignment /duty changes</td>
<td></td>
</tr>
<tr>
<td>• Disciplinary actions</td>
<td></td>
</tr>
<tr>
<td>3.) Systems</td>
<td></td>
</tr>
<tr>
<td>• Changes in communication</td>
<td></td>
</tr>
<tr>
<td>• Use of consultant services</td>
<td></td>
</tr>
<tr>
<td>• Changes in organizational structure</td>
<td></td>
</tr>
<tr>
<td>• Changes or additions to staffing</td>
<td></td>
</tr>
<tr>
<td>• Budget considerations</td>
<td></td>
</tr>
<tr>
<td>• Inventory considerations</td>
<td></td>
</tr>
<tr>
<td>• Equipment considerations</td>
<td></td>
</tr>
<tr>
<td>• Revisions to job descriptions</td>
<td></td>
</tr>
<tr>
<td>• Policies &amp; procedures changes</td>
<td></td>
</tr>
<tr>
<td>• Environmental/facility changes</td>
<td></td>
</tr>
</tbody>
</table>

| b. By Whom |                   |
| c. By what date. |   |

<table>
<thead>
<tr>
<th>6. Remonitor Date</th>
<th>a. m/d/y</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>b. Time from initial report to remonitor in months.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>7. Disposition of Report</th>
<th>a. Accepted as submitted.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>b. Returned to Submitting area for revision.</td>
</tr>
<tr>
<td></td>
<td>c. Expected date of re-submission.</td>
</tr>
</tbody>
</table>

RW: 3/30, 4/12/90, 4/23/90
UNIVERSITY OF MICHIGAN HOSPITALS
QUALITY ASSURANCE PROGRAM

TRACKING/TRENDING/CODING ELEMENTS FOR HQA FOLLOW-UP REPORTS

STUDY NUMBER: ______________________

(The following information is added to the previous tracking document)

8. Problem Resolved
   a. Yes
   b. No
   1.) Corrective Actions have not been fully implemented.
   2.) Corrective Actions have not been implemented as planned.
   3.) Corrective Actions taken were insufficient for resolving problem.
   4.) Corrective Actions taken did not result in expected outcome.
   5.) Corrective Actions could not be implemented as defined due to unidentified factors and/or barriers encountered.
   6.) Corrective Actions have been implemented but more time will be needed before improvement/resolution will be achieved.
   7.) Corrective Actions will require modification.
   8.) Other

9. Improvement
   a. Yes
   b. No
   1.) Corrective Actions have not been fully implemented.
   2.) Corrective Actions have not been implemented as planned.
   3.) Corrective Actions taken were insufficient for resolving problem.
   4.) Corrective Actions taken did not result in expected outcome.
   5.) Corrective Actions could not be implemented as defined due to unidentified factors and/or barriers encountered.
   6.) Corrective Actions have been implemented but more time will be needed before improvement/resolution will be achieved.
   7.) Corrective Actions will require modification.
   8.) Other

10. Remonitor Date
    a. m/d/y
    b. Time from follow-up report to remonitor in months.

11. Disposition of Report
    a. Accepted as submitted.
    b. Returned to Submitting area for revision.
    c. Expected date of re-submission.

RW: 3/90, 4/12/90, 4/23/90
Reporting Process for Hospitals' Quality Assurance Program

by

Victoria Vogel

David Karp

Kent Reigerer

for:

The University of Michigan Hospitals' Quality Assurance Committee

for:

A.ureance Program

Hospital's Quality

Reporting Process
Major Points for Presentation:

1) Information & Report Formats
   - by Victoria Vogel

2) Scheduling System
   - by Kent Felgner

3) Database Specifications
   - by David Karp
Information & Report Formats

Three Major Points:

1) Why was the Project Needed?

2) Goals of the Project

3) Benefits from Standard Reports
Appendix II

Oral Presentation Slides
Multidisciplinary and/or Integrated Study: Yes:____ No:____
Participants: ____________

QUARTERLY REPORT FOR: Jan - March 1990 Due: ____________
(Please complete one form per indicator)

SUBMITTED BY: ____________
- Clinical Department________________
- Division/Section/Service________________
- Hospital-Based Department________________
- Medical Staff By-Laws Committee________________
- Other________________
- Services/Providers involved________________

CONTACT PERSON: ____________
- Name:________________
- Title:________________
- Address:________________
- Phone:________________

IMPORTANT ASPECT OF CARE:

INDICATOR:

PROBLEM/S IDENTIFIED AND/OR OPPORTUNITIES FOR IMPROVEMENT:
1. Impact of the problem:
   Action/s to be taken:
   Who or what is expected to change?
   Who is responsible for implementing action?
   What action is appropriate?
   When is change expected to occur? (Date) ____________ Remonitor Date: ____________

2. Impact of the problem:
   Action/s to be taken:
   Who or what is expected to change?
   Who is responsible for implementing action?
   What action is appropriate?
   When is change expected to occur? (Date) ____________ Remonitor Date: ____________

3. Impact of the problem:
   Action/s to be taken:
   Who or what is expected to change?
   Who is responsible for implementing action?
   What action is appropriate?
   When is change expected to occur? (Date) ____________ Remonitor Date: ____________

rev: 4/10/90 CODE NUMBER: ____________
hqa1rep 1.0 DATE RECVD: ____________

QUALITY ASSURANCE DOCUMENT CONFIDENTIAL MOLA 333.21515, 20175
Comparison of Changes in the Estimated Number of Reports for University of Michigan Hospitals Quality Assurance

Effect of Changes

Estimated Number of All Quality Assurance Reports

(Based on 1989-1990 Figures)

For an Average Year

Estimated Number of All Changes

Before

After

Changes

Changes
Benefits of Standard Report Forms:

1) Create Adherence to Process

2) Ensure Complete Reporting

3) Assign Responsibility

4) Enable Tracking Capability

5) Save Time
Collection Ideas

- Weekly Reporting

- 10 Reports/Week Maximum
Recommended Guidelines

- No August Collection

- No late December Collection
Proposed Schedule

- Given recommendations

MONTH

- Prep. and review HQAC
- Collect reports
- Report

Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec Jan Feb Mar
SAMPLE CHECKLIST

Important Aspect of Care

a. Type of Care
   1.) Diagnostic
   2.) Therapeutic
   3.) Preventative
   4.) Rehabilitative
   5.) Supportive
   6.) Palliative

b. Priority
   1.) High-volume
   2.) High-risk by:
      • omission
      • commission

Problem-prone for
   • patients
   • providers
Record Number [100001] Contact Number [101]
Report Type [Clinical ] Contact Name [John Doe]
Due Date [04-23-1990] Contact Title [ ]
Multidisciplinary [no ] Contact Address [ ]
Status [Active ] Contact Phone [936-4040]
Status Date [ ] Follow-up Status [yes]
Userid [ ] Follow-up date [04-23-1991]
Follow-up Number [1001]

Important Aspect of Care: Type of care [Diagnostic ]
Priority [High-risk by, omission ]

Indicator: Elements of Quality [Continuity of Care, Transfer of Information ]
Type of Indicator [Structure ]

Problem 1: Type of Problem [Diagnosis ]
Category of Problem [Systems ]
Severity of Problem [Risk to patients ]
Impact of Problem [Hospital ]

Action 1: Type of Action [Knowledge, Orientation, In-service training ]
By Whom [ ]
By What Date [ ]

Problem 2: Type of Problem [ ]
Category of Problem [ ]
Severity of Problem [ ]
Impact of Problem [ ]

Action 2: Type of Action [ ]
By Whom [ ]
By What Date [ ]

Problem 3: Type of Problem [ ]
Category of Problem [ ]
Severity of Problem [ ]
Impact of Problem [ ]

Action 3: Type of Action [ ]
By Whom [ ]
By What Date [ ]
Plan of Action for Implementation:

Now:

1) Revise Forms Per Feedback

2) Set Schedule

3) Present Specifications to Programmer
   Possibilities:
   ? RBase, Oracle, Paradox  ?

4) Finalize Checklist Format for Follow-up
   for Tracking Report

Future:

1) Implement Database

2) Train Personnel for Mainframe Upgrade
**Goal:** Begin Implementation of New QA Plan

- **Time Frame for Project Usage:**
  - Present Time
  - Six Months to One Year from Now
  - One to Two Years from Now

**Mainframe Hospital System to:**
- Move Entire System and Database
- Use Scheduling System for all QA Activities

**Time Frame for Project Usage:**
- Present Time
- Six Months to One Year from Now
- One to Two Years from Now
In Summary:

Why Accept?

Increase the Ability of Quality Assurance to Monitor Reports

- Standardize Methods for Reporting Studies

- Reduce Number of Reports by about 40%

- Provide Manageable Flow of Reports

- Ability for Trending/Tracking Important Data