C.A.P.H. Nursing Documentation
Time Study

The University of Michigan
Industrial and Operations Engineering 481
Special Projects in Hospital Systems

Professor Richard J. Coffey
Project Coordinator: John Gialanella
Client: Amy Perry

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Submitted By:
Braden Farber
Mark Miller
Andy Stenzler
EXECUTIVE SUMMARY

C.A.P.H. Nursing Documentation Time Study

This document is the final report of the Nursing Documentation Time Study. The study was conducted by University of Michigan Industrial engineering students under the auspices of the University Of Michigan Hospitals' Management Systems Department.

The purpose of this study was to quantitatively assess the amount of time spent on documentation by nurses, and to determine if redundancies are present in documents, or documentation procedures in the C.A.P.H.

Parameters of the data collection called for a methodology that would give detailed information on each individual document, and could easily be extrapolated for use on other units in the C.A.P.H. For this reason a work build-up approach was selected. Due to the nature of the unit, traditional "stopwatch" time studies were not feasible. In order to overcome this, a standard was developed for the amount of time spent writing a word, number, or check. This was done by initial limited timing of each document. To ascertain the cumulative time spent filling out a particular document, the words, numbers and checks were counted. The average times spent on these documents per patient was then calculated by using these counts, and the standards earlier
Redundancies in the nursing documentation were present. However, due to the nature of the psychiatric documentation, i.e., progress notes, some of the redundancies could not be truly classified as redundant. Interviews were also conducted in order to try to classify which documents were redundant. These interviews, though helpful in other ways, didn't lead to the answer. In order to find the true answer to which documents are redundant, the assistance of nursing staff members will be needed. A procedure has be developed, for future use, for the purpose of identifying redundancies in the nursing documentation. This procedure will give the nursing staff an outline of how to analyze each document. With this procedure and the nurses' technical knowledge of the documentation, an accurate determination can be made as to which documents are redundant.

Medication documentation was one of the documentation procedures that we were able to classify as redundant. Not only is the medication procedure redundant, but it is potentially dangerous. Through analysis of the medication documentation, and staff interviews it was determined that "the time medication is to be given" was written in more than one place, sometimes with different times. This creates a dangerous situation since not all
nurses use the same document to determine time medication is to be given.

A summary of our data is available in Tables 1, 2, and 3. The figures sited are given in average time per patient. Each document also has another unit associated with it, such as for group progress notes the number sited is average time per patient, per group meeting.

The conclusions of this study indicated that most of the documentation is done during the evening shift. Another conclusion of this study is that redundancies due exist in the C.A.P.H nursing documentation procedures. The most notable being medication procedures.

We suggest that in order to more fully understand the nature of these redundancies, the nursing staff should implement the afore mentioned documentation analysis procedure. Also, immediate attention needs to be given to medication documentation, due to the potential severity of this problem. A possible solution to this problem would be to have "time medication is given" written in one place, such as the medication cardex.
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INTRODUCTION AND BACKGROUND

The Nurse Documentation Time Study Project is associated with the University of Michigan Hospitals' Management Systems Department, the Patient Activity Study, Child Adolescent Psychiatric Hospital (C.A.P.H.), and The Department of Nursing. The Patient Activity Study was a study conducted by the Management System Department that detailed the amount of time spent by nursing personnel on documentation.

The purpose of the Nursing Time Study was to use a work build-up approach in order to quantitatively assess the amount of time spent by nurses on each individual document. Specifically, the data was standardized so that it may be applied when examining other units in the C.A.P.H. Also a documentation analysis procedure (questionnaire) was created so that redundancies in documentation, on any unit, can easily be determined by the nursing staff.

The data obtained from C.A.P.H. was separated into three groups. Table (1) lists the average time spent each day per patient. Table (2) lists the average time spent on documents which are only completed once during a patient 's stay at the hospital. Table(3) lists the average time spent on documentation
for three unique categories; weekend shift, group meeting, and shift. This is necessary because these documents require drastically different amounts of time depending on the time of day or shift.

In our observations throughout the study, the nursing staff appeared to be under stress, and they often verbalized their frustrations over the amount of documentation duties which they were required to perform. This frustration can be potentially dangerous as in the case of medication redundancies which can cause patients to get multiple doses of medication or none at all.
APPRAOCH AND METHODOLOGY

Data collection parameters for this study were clearly defined. A method was needed that would give detailed information on each individual document and could be easily extrapolated for use on other units of the C.A.P.H. Since the project team did have a time constraint, a work build-up approach was used to obtain detailed data for documentation time.

The first step the project team took was to decide how to best acquire timed data from psychiatric documents. It was determined that stopwatches were not feasible and thus, standards were developed for the amount of time spent writing text with thought (sentences), fill-ins no thought, and checks, and boxes. This was accomplished by taking a limited timing of each nursing document. It was found that the average time for writing with thought was 10.8 seconds per word, fill-ins 3.1 seconds per entry, checks—2.1 seconds, and boxes 2.2 seconds. The average times spent on these documents per patient was then calculated by using these standards.

Secondly, redundancies in the nursing documentation did exist. Interviews of nurses were conducted to determine what forms they believed to be redundant. Although useful information was
obtained, the interviews did not provide the project team with "clear-cut" evidence of redundant forms. Because of this, a procedure later discussed was been developed, enabling nurses to identify redundancies within their documentation. This process will give the nursing staff a concise outline to follow.

Data collection for this study lasted approximately three weeks, with one week devoted to counts and two for the actual collection of information. All three shifts were examined: day, evening, and night.
Results and Conclusions

Tables 1, 2, and 3 summarize the findings of this study. Table one shows the average time spent on documents per day per patient. One thing to notice would be that the Seclusion/Mechanical Restraint Record takes on the average 38.42 minutes per day, per patient in a restraint or in seclusion. An interesting note is that often the time the patient stays in seclusion/restraint is less than the amount of documentation time.

Tables 2. shows the documents that are used when a patient is first admitted, and then later discharged. Notable times would include the Nursing Admissions Data Base, and the nursing Discharge/Transfer form. Graph 1. gives a break down of the percentage of the admission procedure per document.

In Table 3. lists the average time spent on documenting different types of progress notes. Weekend progress notes, Problem oriented progress notes (progress), Group Progress notes, documentation times vary throughout the day. These variations can be seen by inspection of Graphs 2, 3, 4.

Inspection of graph 5. shows how the time for recording progress notes is related to the time necessary to write them down on the report board. Report board documenting is higher than tape recording in all three cases, day, eve, and night shift.

The time spent documenting on the recurrent medication record
is captured in Graph 6. It can be seen that most of the time spent on this document is on Monday. The reason for this is because most of the medication changes occur on Mondays. A slight increase is also apparent for Thursdays. A possible explanation for this might be that doctors are issuing new orders before a weekend.

The frequencies for each document are listed in Table 4. These frequencies, along with data on individual document times, allowed us to estimate the time nurses spend documenting per day, per patient. The time nurses spend on documentation per day per patient is approximately **.98 HOURS PER PATIENT.** This number might seem low, but due to the nature of the data collection, time for distractions during documentation was not calculated. This figure hopefully depicts the time it takes to fill out average daily documentation. Variation in the figure given above (.98hrs/patient) could be as high as a factor of 1.
TABLE 1

1. DAILY ACTIVITY RECORD  1.30  MIN/DAY/PATIENT  
2. SHIFT TO SHIFT NOTEBOOK  4.35  MIN/DAY/PATIENT  
3. RECURRENT MEDICATION RECORD  0.77  MIN/DAY/PATIENT  
4. NURSING CARE PLAN  11.85  MIN/DAY/PATIENT  
5. TAPE RECORDINGS  0.61  MIN/DAY/PATIENT  
6. REPORT BOARD  1.94  MIN/DAY/PATIENT  
7. TRICYCLIC ANTIDEPRESSANT SIDE EFFECT RECORD  0.25  MIN/DAY/PATIENT  
8. SECLUSION/MECHANICAL RESTRAINT RECORD  38.42  MIN/DAY/PATIENT  
9. WEIGHT CHART  0.13  MIN/DAY/PATIENT  

TABLE 1 LISTS THE AVERAGE TIME SPENT EACH DAY PER PATIENT. THESE DOCUMENTS ARE ALL COMPLETED DAILY BY C.A.P.H. NURSES.
TABLE 2

1. ADMITTING PROGRESS NOTE 4.23 MIN/PATIENT
2. NURSING ADMISSION DATA BASE 56.31 MIN/PATIENT
3. NURSING CARDEX 5.60 MIN/PATIENT
4. MEDICATION CARDEX 1.87 MIN/PATIENT
5. NURSING DISCHARGE/TRANSFER 35.82 MIN/PATIENT

TABLE 2 LISTS THE AVERAGE TIME SPENT ON DOCUMENTATION PER PATIENT. THESE DOCUMENTS ARE ONLY COMPLETED ONCE DURING A PATIENTS STAY AT THE HOSPITAL.
TABLE 3

1. WEEKEND PROGRESS NOTES 3.72 MIN/WEEKEND SHIFT PER PATIENT
2. GROUP PROGRESS NOTES 1.38 MIN/GROUP MEETING PER PATIENT
3. PROGRESS NOTES 6.27 MIN/SHIFT/PATIENT

TABLE 3 lists the average time spent on documentation for three unique categories; weekend shift, group meeting, and shift. This is necessary because these documents require drastically different amounts of time depending on the time of day or shift.
WEEKEND PROGRESS NOTES

GRAPH 2.

AVG. TIME OF DOC. PER PATIENT (MINUTES)

<table>
<thead>
<tr>
<th>Day</th>
<th>Avg. Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fri Eve</td>
<td>4.09</td>
</tr>
<tr>
<td>Sat Day</td>
<td>2.7</td>
</tr>
<tr>
<td>Sat Eve</td>
<td>3.2</td>
</tr>
<tr>
<td>Sun Day</td>
<td>2.8</td>
</tr>
<tr>
<td>Sun Eve</td>
<td>5.8</td>
</tr>
</tbody>
</table>

- WEEKEND SHIFT -

-11-
GROUP PROGRESS NOTES

GRAPH 3.

AVG. TIME PER PATIENT (MINUTES)

GROUP MEETING NUMBER

-12-
GRAPH 4.

SHIFT

PROGRESS NOTES

AVG. TIME OF DOC. PER PATIENT (MINUTES)

AVG. TIME OF DOC.

DAY

EVE

NIGHT

2.09

15.42

1.3

-13-
REPORT BOARD vs. TAPE RECORDER

AVG. TIME OF DOC. PER PATIENT (MINUTES)

DAY  EVE  NIGHT

0.38  1.3  1.21
0.23  3.64  0.89

- AVG. TIME OF DOC (TAPE)
- AVG. TIME OF DOC (REPORT BOARD)

GRAPH 5.
RECURRENT MEDICATION RECORD

<table>
<thead>
<tr>
<th>DAY OF WEEK</th>
<th>AVG. TIME OF DOC. PER PATIENT (MINUTES)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SUN</td>
<td>0.21</td>
</tr>
<tr>
<td>MON</td>
<td>3.63</td>
</tr>
<tr>
<td>TUES</td>
<td>0.21</td>
</tr>
<tr>
<td>WED</td>
<td>0.21</td>
</tr>
<tr>
<td>THURS</td>
<td>0.71</td>
</tr>
<tr>
<td>FRI</td>
<td>0.21</td>
</tr>
<tr>
<td>SAT</td>
<td>0.21</td>
</tr>
</tbody>
</table>

GRAPH 6.

-15-
**TABLE 4**

**DAILY FREQUENCY/PER PATIENT**

<table>
<thead>
<tr>
<th>1. DAILY ACTIVITY RECORD</th>
<th>2.89</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. SHIFT TO SHIFT NOTEBOOK</td>
<td>2.67</td>
</tr>
<tr>
<td>3. RECURRENT MEDICATION RECORD</td>
<td>.35</td>
</tr>
<tr>
<td>4. NURSING CARE PLAN</td>
<td>.153</td>
</tr>
<tr>
<td>5. TAPE RECORDING</td>
<td>2.8</td>
</tr>
<tr>
<td>6. REPORT BOARD</td>
<td>2.8</td>
</tr>
<tr>
<td>7. TRICYCLIC ANTIDEPRESSANT SIDE EFFECT RECORD</td>
<td>1.64</td>
</tr>
<tr>
<td>8. SECLUSION/MECHANICAL RESTRAINT RECORD</td>
<td>.009</td>
</tr>
<tr>
<td>9. WEIGHT CHART</td>
<td>.36</td>
</tr>
<tr>
<td>10. GROUP PROGRESS NOTES</td>
<td>.48</td>
</tr>
<tr>
<td>11. PROGRESS NOTES</td>
<td>3</td>
</tr>
<tr>
<td>12. WEEKEND PROGRESS NOTES</td>
<td>2.9 (WEEKEND ONLY)</td>
</tr>
<tr>
<td>13. MEDICATION CARDEX</td>
<td>.55</td>
</tr>
<tr>
<td>14. NURSING CARDEX</td>
<td>.05</td>
</tr>
<tr>
<td>15. NURSING ADMISSION DATA BASE</td>
<td></td>
</tr>
<tr>
<td>16. NURSING DISCHARGE/TRANSFER</td>
<td></td>
</tr>
<tr>
<td>17. ADMITTING PROGRESS NOTE</td>
<td></td>
</tr>
</tbody>
</table>
Recommendations

1. Implement the Nursing Documentation Analysis procedure (Questionnaire) into the nursing staff workplace. This would enable management to obtain feedback on nurses' opinions of documentation.

2. The current Medication Procedure should be reviewed. The following measures need to be taken:
   A. The time medication is given should only be written in one place, preferably the medication cardex.
   B. Medication dispensing cards should be eliminated. Nursing staff rarely uses these cards. These cards create a situation where errors in transfer of medication information can occur. They also add to the problem of wrong dosage times.

3. Review specific forms of nurse documentation. Particularly the Seclusion/Mechanical Restraint Record, Nursing Care Plan, Progress Notes, and Daily Activity Record.

4. Establish a specific documentation room where all nursing documents can be catalogued and nurses can document more effectively without interruptions.

5. Vital signs seem to be recorded on a wide variety of documents with no consistency. Some days vital signs will be will be on progress notes, some days they won't. We recommend that recording of vital signs should be done in one single centralized place.
DOCUMENTATION ANALYSIS PROCEDURE*

1. Is this document required by law (Federal, state, regional and/or municipal law or statute)?
   
   NO   YES

2. Is this document required by hospital policy?
   
   NO   YES

3. If document is not required by law and/or policy, should it be?
   
   NO   YES

3a. If it is required, by which law and/or policy?

3b. List requirements of law and/or policy.

4. Who needs this document?

5. Why do they need this document?
6. What information goes on to this document?

7. Is this information contained anywhere else, in part or in whole? If yes, where?
   
   NO   YES

7a. If yes, can these documents be combined?

   NO   YES

8. How is the information in this document interpreted? (i.e. subjective, objective)?

9. Can this information be condensed or rewritten in any other way? (i.e. fillins, checks, text)

   NO   YES

9a. Which documentation structure is most applicable to this document? [use answers from above to determine this]

10. Is this document used as a convenience tool?

    NO   YES
11. Is this document wanted by any particular person? If yes, who, why?
   NO                   YES

12. Is this document preferred over another document? If yes, which one?
   NO                   YES

13. What is the historical nature of this document?

14. Does the present purpose of the document differ from the historical purpose?
   NO                   YES

15. How does the present purpose differ from the historical one?

Using the above answers as a guide, is this document redundant, can it be replaced, restructured, or combined with any other document?

*Developed through the use of the Resource Allocation Model:2
**Nursing Documentation Time Study, April 27, 1989
MARCH 9-MARCH 23 1989

9th -14
10 -14
11 -14
12 -14
13 -14
14 -14
15 -14
16 -14
17 -14
18 -12
19 -13
20 -14
21 -13
22 -13
23 -13

SOURCE: UMH BED UTILIZATION AND AVAILABILITY REPORT