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Introduction
In January of 1988 our project group was given the task of obtaining detailed documentation of the activities performed by inpatient unit clerks in Mott/Women's/Holden (M/W/H) Hospitals. There are three main reasons this documentation is needed:

1. To aid Management Systems in their project to reassign tasks among the nurses, clerks, and volunteers.

2. To aid Unit Support Services in evaluating the appropriateness of the position's salary grade.

3. To assist Hospital Information Systems in evaluating the impact of increased computerization on the clerical position.

The activities performed by the clerks were to be recorded and quantified. Any notable inter-unit or inter-shift differences were to be noted. Several of the tasks were to be broken down and timed in detail.

The purpose of this report is to present our results and make appropriate recommendations.
Summary
Three methods of study were used to attain the goals of our project: work sampling, written surveys, and observation. Work sampling enabled us to quantify the clerical activities. The surveys helped us see how the clerks perceive their job as well as what differences exist between units and/or shifts. Finally, our observation enabled us to obtain specific breakdown times for several activities.

The results form the work sampling data are presented in the Results section of this report.

The survey results can be found in Appendix IV. The clerk's perception of the time spent on activities proved to be quite accurate for some activities and over or underestimated for others. Based on this information, the data was standardized (see Appendix IV). Inter-unit/inter-shift differences are presented in the Results section.

Flowcharts located in Appendix V give specific breakdown times of several activities as they were obtained by our study.

Although the goal of this report was to present our data, we also developed some recommendations while analyzing this data. The three main recommendations are: 1) Receptionists hired for the busier units, 2) Further computerization of communication throughout M/W/H Hospitals, and 3) Interviewing of the clerks before their activities are computerized for trouble-shooting purposes. These recommendations are presented in detail in the Conclusions and Recommendations section of this report.
Methodology
What is presented in this section is a brief summary of the methods used to perform our study. If a more detailed description of our methodology is desired, please see Appendix I.

Before the data collection began, we obtained a list of tasks the unit clerks perform. These tasks were divided into thirteen activity categories. A list of these categories and what tasks were included in each can be found in Appendix II.

Three tactics were used to obtain the information necessary to achieve the goals of our study: 1) work sampling, 2) written surveys, and 3) observation on the units.

Work sampling is a technique used to show the percentage of time that the clerks devote to various activities. In order to facilitate data collection within our time and personnel constraints, three representative units were chosen to be studied in this manner. The units chosen were 5 East Mott (General Care for Toddlers and Adolescents), 5 West Mott (Cardiology), and 4 Women's (Ante Partum/Post Partum and Nursery). Each unit had two shifts: a day shift (7:30 A.M.-4:00 P.M.) and an evening shift (3:45 P.M.-12:15 A.M.). 5 East and 5 West Mott each have one clerk per shift. There is also a relief clerk (middle clerk) that works from 12:00 P.M. to 8:30 P.M. This clerk helps out as needed on both 5E and 5W. On 4 Women's, there are two clerks per shift due to the size of the unit.

Each clerk on each of the representative units was equipped with a random alarm (or "beeper") which delivers audible signals at random throughout each shift. Every time the alarm sounds, the clerk records the type of activity he/she is performing. The clerks were given prepared data sheets to record the data on as well as a reference sheet to identify and describe the various categories (see Appendix II).

The written survey of the clerks (see Appendix III) was designed to obtain the clerk's estimate of the time they devote to each category of activities. The survey was distributed across all units in M/W/H hospitals. The survey was given to serve two purposes. The first was to compare the clerk's perception of how his/her time is spent with what was shown by the work sampling. The second was to obtain rough estimates of the time spent on various activities in units where we did not perform work sampling. This data will enable us to compare units and note any major differences in time commitments.

Actual observation of clerks during their shifts served a two-fold purpose. First, it provided valuable insight into what the different clerical duties actually entail. Second, it enabled us to obtain specific time breakdowns of various tasks to aid in determining the impact of computerizing portions of these tasks. The units we chose to observe were the same representative units we studied with work sampling, 5E and 5W Mott, and 4 Women's.

The various methods of data collection took place through the month of March, 1988.
Results
1. Work Sampling

1.1 Presentation of Results

The data obtained from the work sampling (random alarm) study was used to calculate percentages of time devoted to the various clerical activities. The results are shown in Figures 1-7.

![Pie chart showing time distribution]

- Medical Records: 4.93%
- Orders: 20.65%
- Medical Records: 4.93%
- Inpatient Appts.: 3.7%
- Fixed Activities: 10.19%
- Order Supplies: 6.48%
- Admissions: 8.94%
- Transfers: 2.78%
- Discharges: 12.33%
- Receptionist: 29.93%

Figure 1 5 Middle - Afternoon Shift
Figure 2  5 East - Day Shift

Figure 3  5 West Day Shift
Figure 5  5 East Evening Shift

Figure 5  5 West Evening Shift
Figure 6 4 Women's Day Shift

Figure 7 4 Women's Evening Shift
1.2 Interpretation and Analysis

It is apparent that receptionist duties are the most time consuming of all clerical activities in all cases. Usually either processing physician's orders or processing medical records (charts) was the second largest time consumer. The least time-consuming activities included scheduling inpatient appointments, referrals, off-unit errands, and miscellaneous which included things such as training new clerks, moving beds, and other tasks not formally included in the clerk's job description.

Some of the data may be slightly biased for two reasons: 1) Often the beepers were left at the work station while the clerk was on break or running an errand. This led to an underestimation of time spent on these two activities. This type of error was more prevalent on units 5E and 5W Mott. 2) Sometimes the beepers were not heard or were ignored during particularly busy periods on the unit. Because of this, we had less actual data to interpret, leading to less accuracy.

Part of the goal of the study was to note any significant differences between units and/or shifts. When comparing 5E day and 5W day, there is no notable difference. Therefore, these two units were combined for the remainder of the analysis. The same was done with the 5E evening and 5W evening shifts.

A graph comparing 5 day shift and 5 evening shift is shown in Figure 8.
The most evident difference is the increase in receptionist activities that occurs on the evening shift. This can be explained by several factors: 1) During the day shift, the general level of activity is higher on Unit 5. Since the clerks are often occupied with other things, the nurses often answer the phones and pagers. 2) The majority of phone calls to 5 Mott are for the parents of the children. Often there are more parents on the unit after 5:00 P.M. when regular working hours end. 3) During the evening shift, we found there was less activity on the unit, giving the clerk more time to devote to receptionist duties instead of doing them simultaneously with other duties.

Because there is less activity on the evening shift, there is an increase of breaks and a decrease of discharges, transfers, admissions, referrals, appointments, and ordering supplies.

As the graph shows, there is a decrease of fixed activities during the evening shift. This is expected simply because most defined fixed activities are required to be done in the morning.

The increase in time spent on medical records during the evening shift is simply because the clerk now has the time to do the filing and closing of charts which may have been put aside during the day shift.

The comparison graph of 4 Women's day vs. evening is shown in Figure 9.

Figure 9 4 Women's Day vs. 4 Women's Evening
As seen by the graph, there are few significant differences between these two shifts. The increase in discharges on the evening shift is because discharges are generally scheduled, while transfers and admissions are totally unpredictable on this floor. This also explains why there is no general decrease in activity on the evening shift like there was on Unit 5. There is more miscellaneous activity on the day shift because most of the clerical training was occurring during this shift and this accounted for a majority of the miscellaneous category.

The increase in medical record activity is due to the fact that much of the filing and closing of charts is left for the evening clerk to do late at night.

There is slightly more processing of physicians orders done on the evening shift. There is no logical explanation for this fact, except that perhaps since there are more patients entering the unit at night, there are more orders to process.

The graphs showing the differences between Unit 5 and Unit 4 are shown in Figures 10 and 11.
Receptionist duties are generally more time consuming on Unit 5 because there are no phones in the patient's rooms. Therefore, all calls to patients on 5 come to the clerk's station. The clerks must page the patient's room and find out if the parent is there, then transfer the call to the hall phone. This process can be very time consuming.

Transfers require a larger percentage of time on 4 Women's because the majority of their patients are transferred from Labor & Delivery, while on 5 Mott they are admitted directly to the unit more often. This also accounts for the greater number of admissions on 5 Mott.

During the day shift, there are more orders processed on 5 Mott. This is because 5 Mott has more orders to process during their Day shift, and also because on 4 Women's the nurses process their own orders for the nursery.

The higher turnover rate of patients on 4 accounts for more work to be done on medical records.

There are more fixed activities to perform on Unit 4, which accounts for the higher percentage of time devoted to this category on Unit 4.

Finally, the increase in miscellaneous activities on Unit 4 is simply because there was a clerical training program going on on Unit 4 at the time of our study.
2. Survey

2.1 Presentation of Results

The purposes of our survey were to compare the clerk's perception of their time spent on activities to what the work sampling showed, and to obtain an estimation of the differences between units in the percentage of time spent on the various activities.

The data on the units which we received surveys from is presented in Table 1 of Appendix IV.

2.2 Interpretation

Unfortunately, although we distributed approximately 50 surveys, only 28 were returned to us. Some units returned no surveys and therefore we are unable to estimate any data for these units. Some units returned only 1 survey. Therefore, any data we obtained from this portion of the study is only an estimate and a very general one at that. A much more in depth study is required for any definite conclusions.

In order to determine the clerk's perception of their job vs. the work sampling data, we made graphs comparing the survey results vs. the work sampling results for units 5 East-day shift, 5 West-day shift, 4 Women's-day shift, and 4 Women's-evening shift (Survey results were unattainable for Unit 5 evening shifts). The graphs are shown in Figures 12 - 15 and are summarized by activity as follows:

Receptionist - No definite trend could be determined. Sometimes the perception was an overestimate, sometimes an underestimate.

Admissions Transfers - Generally the perception was accurate.

Discharges Orders - The clerks overestimated this activity by an average of 1.69%.

Referrals & Appointments - Generally these were overestimated by an average of 4.39%.

Medical Records - No definite trend could be determined.

Order Supplies - Overestimated by an average of 3.34%.

Off-unit Errands - Overestimated by an average of 1.81%.

Meal/Break - Underestimated by an average of 3.81%.

Fixed Activities - Underestimated by an average of 3.82%.
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In order to get an estimation of the time actually spent on the activities in the various units, a correction factor was added to the activities across the board to account for consistent over/under estimation. Those activities that showed no trend were dropped from the data, and those activities that were estimated accurately were not changed. The new improved data is shown in Table 2 of Appendix IV.

From the corrected data, we were able to achieve the second goal of this portion of the study - noting any significant differences between units and/or shifts. The following is a summary of this information.

Unit 3 Women's - This unit had a higher than average percentage of time spent on transfers both during the day shift and the evening shift. During the midnight shift, an even greater percentage of time was devoted to transfers, a larger than average percentage of time was spent on admissions, and less time was spent on discharges.

Unit 4 Women's - The only notable difference on this unit was that during the evening shift there was more time devoted to discharges and less than average to processing orders.

Holden - During the day shift on this unit, more time than average was spent on breaks, and during the evening shift less time was spent on discharges.

Unit 7 West Mott - Data was only available for the day shift. The clerks on this shift devote more time than average to ordering supplies.

Unit 7 East Mott - The only significant difference was the percentage of time spent on referral processing during the day shift. This was above average.

Unit 6 North Mott - Data was only available for the day shift. These clerks spent more time than average on processing physician's orders, and much more time than average on referral processing.

Unit 5 West Mott - Data was only available for the day shift. The clerks on 5 West spend more time than usual on processing physicians orders, and much more time than average on referral processing.

Unit 5 East Mott - Again, data was only available for the day shift. The results for 5 E are the same as 5 W.

Unit 5 Middle Mott - The middle clerk on 5 Mott spends much less time than average on admissions and transfers and a greater than average amount of time on discharges and ordering supplies.

Unit 4 Mott - During the day shift, the clerks spend a greater than average amount of time on transfers and referral processing, and a less than average amount of time on discharges. During the evening shift, a much less than average amount of time is spent on admissions, discharges, and processing physicians orders.
Units 5&6
**Midnight Float - Mott** - This clerk spends a less than average amount of time on transfers and discharges.

Units 4&7
**Midnight Float - Mott** - This clerk spends less than average time on processing orders and more time on referrals, errands, breaks, and fixed activities.
3. Observation

3.1 Presentation of Results

Since many clerical functions may be computerized in the future, the main purpose of our observation was to obtain broken-down time estimates of some of the clerical duties as they are now performed. These time estimates can provide a comparison between the manual and computerized way of performing specific tasks. The detailed results of our observation and timing of tasks are presented in Appendix V.

3.2 Interpretation and Analysis

Our time estimates were difficult to obtain since the clerical processes are often continually interrupted. The flowcharts can only give general ideas of the breakdown of activities because the activities are not consistently performed in the same sequence.

Flowcharts for the admission, discharge, and various types of transfer processes are given in Appendix V. Each of these major activities were broken down into specific tasks. We then obtained as many time estimates for each task as we could, and averaged the results. The times are written alongside each task in the flowchart. Most of the tasks proved to be fairly consistent in the time required to perform them.

Figure 16 shows a comparison between the way that lab orders and medication orders are processed. The difference here is that lab orders sometimes require a telephone call to the lab, while the medication orders only require placement in the pharmacy box. The lab orders take about 30 seconds longer when a phone call is required.

Figure 17 shows the comparison between RT & diet orders and supply orders. The difference here is that the RT & diet orders are already computerized while the supply order is called in. The computerized orders actually take longer to process. This will be addressed in the next section of our report.
Laboratory Orders

Physician writes orders

Clerks pulls off the orders

Call X-ray or tube the order down to them

(subfigure 16)

Medication Orders

Physician writes orders

Clerk pulls off the orders

Put the order in pharmacy box or tube it to pharmacy

(subfigure 16)

RT and Diet Orders

Physician writes orders

Clerk pulls off the orders

Enter orders on computer

(subfigure 17)

Supply Orders

Physician writes orders

Clerk pulls off the orders

Call in the orders

(subfigure 17)
Conclusions & Recommendations
1. Receptionist Duties

Our first recommendation is that a receptionist be hired for the busier units in the hospital to handle the majority of the receptionist activity. Currently the clerk spends a very large amount of time on receptionist duties. Frequently he/she is put in the position of having to perform two or three things at the same time. Usually one of these things involves receptionist duties. Although hiring a receptionist may present an initial added cost to the hospital, the following benefits make it worthwhile:

1. A receptionist would not require the extensive training of the clerk. The salary of the receptionist would be less than that of the clerk. Since an added receptionist would result in the lack of need for a "middle" clerk, it should prove to save money.

2. The clerks would have additional time to devote to the other clerical activities, thereby accounting for less error and less need for nurses to take over any clerical duties.

3. The receptionist would alleviate much of the stress that occurs in the clerical position. By reducing this stress, the high turn-over rate of the clerks could be lowered as well as their job satisfaction increased.

2. Further Computerization of Inter-Hospital Communication

Our second recommendation is that there be further computerized contact between the various units in M/W/H hospitals. The two tasks which the survey showed the clerks overestimating the time spent on (by a large margin) were referrals & appointments and ordering supplies. Both of these activities require telephone calls to other parts of the hospital. These calls nearly always prove to be frustrating for the clerks and require several calls back and forth through overloaded phone lines. Often the clerk must either wait on hold or continue to try to call back. We feel that the clerks overestimate the percentage of time spent on these activities because the activities can drag on for a long period of time and can be very unpleasant.

By computerizing these activities, the clerk would be able to put the order or request through all at once and eliminate the frustration of having to repeatedly try to get through on telephone lines.
3. Considerations to be made in Future Computerization

There are three main points we feel should be taken into consideration before further computerization takes place:

1. The system should be able to accommodate more users. The clerks waited at times for up to an hour to get on the computers. Time saved by computerizing activities is lost if the clerk cannot get on the system.

2. The clerks should be interviewed to ensure that the program allows for all of the detail needed. In the computerized diet orders, for example, the clerks complained that there is no way to enter two different diet orders for a patient, which is sometimes necessary. If the clerks were interviewed to find out what amount of detail is needed for various functions, problems like this could be avoided.

3. The training of the clerks on the computers should be more applicable to real world situations. Frequently when the clerk is using the computer, he or she is interrupted several times. The clerk needs to be able to leave the computer, perform another task, and return to the computer to continue that activity without much trouble. The clerks are trained to complete an entire activity on the computer at one time. In actuality, this situation is rare. We feel the clerks should undergo a brief training period of an uninterrupted nature, then be put on the unit. After a trial period they should be evaluated and have an opportunity to ask any questions or clarify anything as necessary.

Additional comments based on our observation of and conversations with the clerks can be found in Appendix VI.
Appendices

Appendix I. Detailed Methodology
Appendix II. Data Collection Sheet and Reference Sheet
Appendix III. Survey
Appendix IV. Survey Results
Appendix V. Flowcharts of Broken-down Activities
Appendix VI. Additional Comments
Appendix I. Detailed Methodology

1. Work Sampling

Work sampling is done by the data collector making random observations to provide an approximation for the percentage of time a certain activity takes. The concept of random observation means that at any moment an observation is equally likely to be made. The random beepers were programmed by the Poisson distribution to alarm in a random fashion at an average rate of 2.0 signals per hour. However, this did not mean that the beeper would signal exactly twice at different times within the hour. It did mean that the beeper would signal on an average of twice an hour. This programming method is used so that a completely random sample can be obtained. The probability of exactly 2 signals per hour is .270 which can be calculated by the following formula:

\[ \frac{e^{-\lambda} \lambda^x}{x!} \]

with \( \lambda \) being 2.0. The probability of 2 or fewer signals per hour is .677, and the probability of more than 2 signals per hour is .323. Since the study was performed over a three week period, enough data (496 observations) was obtained to provide 98% confidence that the data was within 5% precision.

2. Processing Data

In processing the completed data sheets, each column was considered as one observation. Therefore, if the clerk marked down that he/she was performing three categories of activities at once, each category would count as one-third of an observation. We calculated percentages of time spent performing each category of activities in the following three steps.

1) On every data sheet, a total number of observations per category and a total number of observations (number of columns) was determined.

2) For every unit, a total number of observations per category and a total number of observations (number of columns) was determined.

3) The percentage of time spent performing each category of activities was determined by dividing the total number of observations per category by the total number of observations.
Appendix II. Data Collection Sheet and Reference Sheet

Please mark the appropriate column each time the beeper sounds.

Thank you for your cooperation.

<table>
<thead>
<tr>
<th>UNIT:</th>
<th>SHIFT:</th>
<th>NAME:</th>
<th>ACTIVITY</th>
<th>BEEPER SIGNAL</th>
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<td>RECEPTIONIST</td>
<td>1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20</td>
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<td>TRANSFER PROCESS</td>
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<td>REFERRAL PROCESSING</td>
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<td>MEDICAL RECORD</td>
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<td>APPOINTMENTS</td>
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<td>SCHEDULE INPATIENT</td>
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<td>ORDER SUPPLIES/EQUIPMENT</td>
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<td>OFF UNIT ERRANDS</td>
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<td>MEAL BREAK</td>
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<td>ROUTINE ACTIVITIES</td>
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<td>(bed check, drug renewal, etc)</td>
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REFERENCE SHEET TO CHECKLIST:

Receptionist:
- Face to Face Contact (Patients/Visitors)
- Answer Phones
- Receive/Transmit Messages
- Page Requested (staff)
- Procedural Resource
- Distribute Mail/Flowers
- Locate Necessary PCC Staff

Admission Process:
- Bed Assignment Arranged
- Provides ID for Bed & Patient
- Notifies Appropriate Staff
- Obtains Old Chart From Medical Records
- Greet Patients
- Escorts Patient to Bed
- Prepares Paperwork
- Prepares Paperwork
- Prepare Necessary Paperwork
- Notify Appropriate Staff of Transfer
- Collect Patient Charts, Meds, etc.

Transfer Process:
- For Inter and Intra Services, Arrange Transfer
- With Admitting Via PM System
- Prepare Necessary Paperwork
- Notify Appropriate Staff of Transfer (Housekeeping, Phys., Diatetics)
- Collect Patient Charts, Meds, etc.

Discharge Process:
- Obtain Discharge Notice
- Schedule Follow-up Clinical at UMH
- Obtain Discharge Dressings, Medications, etc.
- Prepare & Complete Discharge Paperwork
- Notify Appropriate Staff

Process Physician/TPN Orders:
- Pull Orders
- Follow Through on Equipment, Supplies, Medications, Procedures, Diets, Consultations, Appointments, Lab Tests by:
  - Phone, PM System/Order Entry, Errands
- Notify Nursing of Orders
- Tube System/Mail
Referral Processing:
(Inpatient Appointments):
  Schedule Appts
  Arrange In-Patient
  Order Prep. Diet, Portable O2 When Applicable
  Cancel/Reschedule Appts.

Medical Records:
  Prepare Chart
  Add New Sheets in Record
  Audit Medical Record
  Disposition Routine of Discharged Patient's Chart
  Coordinate Xeroxing of Patient Info.

Order Supplies/Equip/Services:
  Check Supplies, Equip., and Orders Forms
    Clerical Supplies
    Treatment Supplies
    Admission Packets
    Follow Through on Requests from Nursing
    Dietetic Call Backs
  Chart Supplies
  Patient Articles
  Call Maintenance
  Order Diets

Off Unit Errands:
  Obtaining Narcotics
  Pharmacy Satellite Runs
  Xeroxing

Fixed Activities:
  AM Bed Check
  Nurse Call Pocket Page Programming Beginning of Shift
  Order Narcotics (M,W,F, am.)
  Drug Renewals
Appendix III. Job Survey

Unit Clerk Job Survey

Unit: ______________
Shift: ______________

I work ____ shifts for _____ hours per shift each week.

Please circle the categorized number of hours during each shift that you spend performing each category of activities. The categories are

1= less than 1 hour  2= 1 to 2 hours  3= 2 to 3 hours  4= 3 to 4 hours
5= 4 to 5 hours  6= 5 to 6 hours  7= 6 to 7 hours  8= 7 to 8 hours

1 2 3 4 5 6 7 8 **Receptionist** which includes:
- Face to face contact (patients/visitors)
- Answer phones
- Receive/transmit messages
- Page requested (staff)
- Procedural resource
- Distribute mail/flowers
- Locate necessary PCC staff

1 2 3 4 5 6 7 8 **Admission Process** which includes:
- Bed assignment arranged
- Greets patients
- Provides ID for bed and patient
- Escorts patient to bed
- Notifies appropriate staff
- Prepares paperwork
- Obtains old chart from medical records

1 2 3 4 5 6 7 8 **Transfer Process** which includes:
- Arrange transfer with admitting via PM system for inter and intra services
- Prepare necessary paperwork
- Notify appropriate staff of transfer (housekeeping, physicians, and diatetics)
- Collect patient charts, meds, etc.
Discharge Process which includes:

- Obtain discharge notice
- Transportation arrangement
- Schedule follow-up clinical
- Obtain discharge dressings, medications, etc.
- Prepare and complete discharge paperwork
- Notify appropriate staff

Process Physician/TPN Orders which includes:

- Pull orders
- Follow through on equipment, supplies, medications, procedures, diets, consultations, appointments, lab tests by: phone, PM system/order entry, errands
- Notify nursing of orders
- Tube system/mail

Referral Processing (inpatient appointments)

which includes:

- Schedule appointments
- Notify nurse of appointments
- Arrange in-patient
- Transportation for appointment
- Order prep. diet, portable O₂ when applicable
- Cancel/reschedule appointments

Medical Records which includes:

- Prepare chart
- Files, refers and reports
- Add new sheets in record
- Thin medical records
- Audit medical record
- Disposition routine of discharged patient's chart
- Coordinate xeroxing of patient information
12345678 Order Supplies/Equip/Services which includes:
   Check supplies, equipment and order forms
   Clerical supplies, chart supplies, treatment supplies,
       patient articles, admission packets, call maintenance
   Follow through on requests from nursing
   Dietetic call backs
   Order diets

12345678 Meal/Break which includes:
   Lunch
   Other breaks

12345678 Off Unit Errands which includes:
   Obtaining narcotics
   Xeroxing
   Pharmacy satellite runs

12345678 Fixed Activities which includes:
   AM bed check
   Drug renewals
   Nurse call pocket page programming beginning of shift
   Order narcotics (M,W,F am.)
Appendix IV. Survey Results

On the following page the results of the unit clerk job survey are shown. Table 1 is the uncorrected data and Table 2 is the data figured using the correction factors as explained in the report. The units are listed on the left and the categories of activities are listed across the top. The categories are abbreviated as follows:

R  Receptionist
A  Admissions
T  Transfers
D  Discharges
O  Orders
RP Referral Processing/Inpatient Appointments
MR Medical Records
S  Order Supplies
E  Off-unit Errands
Br Meal/Break
FA Fixed Activities

The numbers in each column (x100) are the estimated percentages of time that the clerks on the given units spent performing tasks in each category of activities. A dash represents less than .1%. The asterisk indicates categories that were not consistently overestimated or underestimated.
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Appendix V. Flowcharts of Brokendown Activities

Admission Process

1. Admissions list made previous p.m. (30 sec)
2. Get a call from admitting (4 min 10 sec)
3. Stamp charts (3-5 min)
4. Complete Kardex cards (40 sec)
5. Complete all patient's labels (1 min)
6. Admitting calls (4 min)
7. Child arrives (variable)
8. Put new orders in pharmacy box (30 sec)
9. Notify nurse & doctor of child's arrival (30 sec)
10. Census list (30 sec)

Figure 1
Discharge Process

1. Receive physician's orders (15 sec)
2. Check against chart (1 min)
3. Schedule return appointments (1 min 20 sec)
4. Check on computer for stop/go and schedule to leave (1 min 10 sec)
5. Prepare discharge envelope (blue card, prescriptions, return appointments) (1 min 45 sec)
6. Census sheet (30 sec)
7. Computer census (30 sec)
8. Instruct patient and patient leaves (variable)
9. Housekeeping log (10 sec)
10. Close chart (variable--about 15 min/1 week in Mott)

Figure 2
Transfer In Process

Get call about patient arriving (variable)

Confirm on computer (30 sec)

Patient arrives (variable)

Census sheet (15 sec)

Put orders in pharmacy box (10 sec)

Sort out chart (variable)

Stamp up new bedside chart (if needed) (3-5 min)

Order special supplies if needed (5 min)

Transfer orders on computer (twice as long as usual orders on computer)

Transfer orders (20 sec/order)

File card and put name on locator (15 sec)

Figure 3
Transfer Out Process

Request transfer through computer (2 min)

Call admitting as a back-up (optional) (30 sec)

Gather charts, cards and medicines (8-10 min)

Patient leaves (variable)

Census sheet (15 sec)

Remove name from locator board (10 sec)

Housekeeping log (10 sec)

Figure 4
Bed to Bed Transfer Process

1. Census sheet (15 sec)
2. Housekeeping log (10 sec)
3. Put transfer in computer (20 sec)
4. Change name on locator board (10 sec)
5. Put orders in medication and pharmacy boxes (10 sec)

Figure 5
Transfer from Labor & Delivery to AP/PP

1. Labor and Delivery calls (3 min)
2. Nurses bring patient (variable)
3. Complete Kardexes and all labels for patient (5 min 30 sec)
4. Stamp charts (1 min 30 sec)
5. Process physician's orders (1 min 30 sec)
6. Put transfer in computer (35 sec)
7. Census sheet and locator board (40 sec)

Figure 6
RT and Diet Orders

1. Physician writes orders (variable)
2. Clerk pulls off the orders (15 sec)
3. Enter orders on computer (2 min 30 sec)

Figure 7

Laboratory Orders

1. Physician writes orders (variable)
2. Clerks pulls off the orders (15 sec)
3. Call X-ray or tube the order down to them (40 sec & 40 sec)

Figure 9

Supply Orders

1. Physician writes orders (variable)
2. Clerk pulls off the orders (15 sec)
3. Call in the orders (2 min)

Figure 8

Medication Orders

1. Physician writes orders (variable)
2. Clerk pulls off the orders (15 sec)
3. Put the order in pharmacy box or tube it to pharmacy (10 sec & 40 sec)

Figure 10
Appendix VI. Additional Comments

Besides our conclusions and recommendations based on our work sampling, survey, and observation data, there are some additional comments that we would like to make pertaining to the clerical position as observed on 5 Mott and 4 Women's.

A first suggestion is for the job description for the third (middle) clerk on 5 Mott to be better defined. Currently, the third clerk also doesn't really have a well-defined workplace. We feel that the workplace should be redesigned by providing the clerk with his/her own desk and clerk supplies so that the third clerk can be better utilized and can truly be a relief to the main clerks.

A second suggestion is to have the doctors always put the charts (with orders to be processed) in a designated place so the clerks would know which charts to do. This would ensure that the orders would be taken care of as soon as possible, and it would save the clerks time.

The computerization of the RT and diet orders has stimulated different responses among the clerks. Some clerks feel that computers give them more freedom since they can stop what they are doing on the computer to perform another task. Others feel that entering orders on the computer takes too much time since the entry process is entirely menu driven.

Finally, the tube system in the Women's Hospital seems to be inefficient. The system there only operates in Women's Hospital, so anything they need tubed to other hospitals needs to be done by transporter. This seems to be terribly inefficient, but since Women's Hospital will be moved in the future, it probably wouldn't be practical to change the system at this time.