Pediatric Multi-Specialty Clinics

Improving the Utilization of Medical Assistants

Programs and Operations Analysis Department
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Executive Summary:

Background:

The Programs and Operations Analysis department of the University of Michigan was contacted by the Pediatric Multi-Specialty Care unit to help analyze the use of Medical Assistants (MAs) in their clinic. Through observations and quantitative analysis completed on the MAs, our project team has provided recommendations to assist the clinic in their utilization of the Medical Assistants.

Our findings include suggestions to assist both MAs and physicians in understanding the Medical Assistants’ jobs. Physicians perceive and complain that the MAs are often seen not working, are difficult to locate, and are responsible for patients having long waits in the waiting room. On the other hand, MAs complain about boredom within their jobs, there is no room for vertical movement, and that their job responsibilities are narrow.

We determined how much of the MAs’ time is spent on certain tasks and how much of the time is spent unproductively. Additionally, we addressed questions on how the MAs may be better utilized and whether or not they are responsible for the long waits patients have in the waiting rooms.

Key Findings:

- **Scheduling**: The scheduling of patients should be staggered to reduce wait times. We found a workload problem from 8:00 a.m. – 10:00 a.m. that caused MAs to be extremely busy.
- **Flag System**: Physicians, nurses, and MAs do not understand or use the flag system effectively.
- **Downtime Activity Lists**: List of downtime activities are not being followed appropriately.
- **MAs’ time with patients**: The time MAs spend with patients is not dependent on service type, for example, neurology, rheumatology, etc.

Conclusions:

- **Scheduling**: Staff needs to begin preparing the clinic half hour prior to the first scheduled arrival.
- **Flag System**: Lack of utilization of the flag system results in non-value added tasks.
- **Downtime Activity Lists**: List need to be modified to increase utilization.
- **MAs’ time with patients**: Time spent with patients increases MAs’ morale and increases patient satisfaction.
- **Long Waiting Times**: The long waiting periods of approximately ___ minutes in the waiting room are due to scheduling conflicts rather than the MAs themselves.
**Recommendations:**

- At least one MA needs to arrive at the clinic a half hour before the first scheduled appointment to prepare the clinic before patients arrive. This includes cleaning rooms that were not done the previous night, training any temporary staff, preparing the whiteboards for the physicians, and performing administrative tasks.
- MAs should straighten rooms at the end of each day after the clinic closes to assure that the clinic can start on time in the morning.
- MAs, doctors, and nurses should be educated about the importance of the flag system and strongly encouraged to use it.
- The "Downtime Activity List" should be replaced with a modified checklist to notify MAs of tasks that have been accomplished and tasks that need to be completed for that day. Each task should be initialed after completion.
- Clinics should reach a consensus on how to deal with patients who come late.
- MAs should be checking the schedule throughout the day to plan ahead for the next morning's tasks.
- MAs should be staffed to particular clinics so they develop stronger working relationships with the physicians and their coworkers.
- MAs should pre-check patients who have been in the waiting room for long periods of time so the patient could enter an exam room when one becomes available.
- MAs should consistently check with patients to inform them of where their appointment is in the schedule.
- A similar study on the physicians should be performed to shorten the wait times even further.
- Review and modify all scheduling templates to balance with realistic appointment times.
Introduction

The Programs and Operations Analysis department of the University of Michigan was contacted by the Pediatric Multi-Specialty Care Clinic to help analyze the use of Medical Assistants (MAs) in their clinic. Through observations and quantitative analysis completed on the MAs, our project team has provided recommendations to assist the clinic in their utilization of the Medical Assistants.

In the past managers have received complaints from Clinicians about the utilization of the Medical Assistants. These complaints commonly included:

- MAs are often seen not working
- MAs are difficult to locate when needed
- MAs are responsible for patients having long waits in the waiting room

In addition, the MAs themselves often complain of boredom within their jobs. They have no room for vertical movement within the clinic and their job responsibilities are narrow. Their primary responsibilities include:

- Attaining patient paperwork
- Getting patient vitals
- Putting patients in exam rooms
- Notifying physicians of patient locations
- Cleaning and stocking rooms after patients leave

These responsibilities may vary slightly and depend on the type of service the patient receives. The Medical Assistants only enter the examining room for a select number of patients, which depends on the service.

The main goal of this project was to study the utilization of the MAs in the Pediatric Specialty Care Clinic. This included determining how their time is spent and what particular tasks were completed efficiently. Additional questions that were addressed include how the MAs may be better utilized and whether or not they are responsible for the long waits patients experience in the waiting rooms.
Approach and Methodology

The following steps were used to study the work of the MAs:

1. **Met with the MAs:** The project began by meeting with the MAs. The meeting consisted of an explanation as to why the study was being done and the expected impact of the study. We stressed that our team was not there to cut positions but rather to improve the MAs' working conditions.

2. **Recorded Video Tape:** A video recording of two different types of patients was made to document the routine an MA performs. One of the patients was a general patient and the other a baby. In this tape a team member acted as a patient and another as the mother of a baby, represented by a doll. The video helped chart the process flow of an MA.

3. **Conducted Surveys and Interviews:** A survey was distributed through email by the Clinical Nurse Manager to all employees who interact with the MAs, including physicians, nurses, receptionists, and managers. Of these people, several asked to be interviewed. The interviews helped determine what the staff believes to be the MAs primary and secondary tasks, along with finding out how they thought the MAs could be better utilized.

4. **Observed MAs:** While the surveys and interviews were being conducted, we made daily observations of the MAs. This consisted of following them throughout their day for two weeks and timing each task they perform.

5. **Developed Flow Chart:** By using the video recording and the observations, a flow chart was comprised. This helped determine exactly what the MAs are doing and aided in determining how the process can be more efficient. The flow chart also helped to determine the primary tasks of the MA.

6. **Conducted Beeper Study:** A beeper study was conducted after the observations were completed. Beeper were given to each MA along with a list of activities that they perform. The checklist was composed of tasks determined by the client and our observations. The beepers went off 4 times per hour and the MAs were asked to mark what task they were doing at that time on a checklist provided.

7. **Conducted Benchmarking:** Two other clinics were contacted to see how their MAs are utilized and what their responsibilities are. This included talking to directors Mary Gay Jerue from the Briarwood Medical Group and Olidia Thomas from the Briarwood Family Practice.

8. **Made Work Load Comparison:** Data was collected to determine when the maximum workload for the MAs occurs by comparing patient volume records to the staffing of the clinic.
Data Analysis

Interviews

The MAs' primary responsibilities are to greet the patient while making them feel welcome, take their vitals, and get them into a room as quickly as possible; this is essentially the flow of the clinic. The secondary responsibilities include keeping the rooms well stocked, checking to make sure the equipment is operating correctly, and assisting physicians with any results from previous or ongoing tests. Overall, the staff finds the MAs work helpful and efficient.

The few problems that do arise occur at times when the MAs are not with a patient. A lack of specified tasks for the MAs to complete each day along with the layout of the clinic add to the ineffective use of time. When there is downtime, the MAs should not have to be informed by physicians as to what tasks to complete, but rather work autonomously to get work done. Since there is not one specific area that the MAs are required to be consistently located it is difficult for the physicians to locate the MAs at times, thus causing the physicians to complete tasks themselves. Consequently, more time is taken away from physicians meeting with patients.

When addressing the issue of long waits the MAs repeatedly were said not to be the cause. However there are ways the MAs can reduce the wait times. When downtime does arise the MAs should be pre-checking patients to help shorten waits as much as possible. Pre-checking is important so that the patients feel acknowledged and when a room becomes available the patient is ready. In addition, non-time dependant tasks can also be completed during the periods of downtime. Finally, maintaining communication with the physicians is imperative. Checking with the physicians frequently to see how far they are from schedule can help the MAs assist the patients more effectively.

Surveys

All staff at the Pediatric Multi-Specialty Care Clinic that directly interacted with the MAs received a survey to help determine current perceptions. This included receptionist, nurses, physicians, and managers. In addition, the MAs themselves received the survey to determine their perceptions in the clinic. A copy of this survey may be viewed in Appendix B. Figure 1 illustrates a few of the results from the survey.
Figure 1: Results obtained from a survey passed out to employees interacting with MAs and MAs.

Figure 1 shows that overall, employees of the Pediatric Multi-Specialty Care Clinic rate the MA performance above average. The feeling was also reflected in the interviews in which most interviewees indicated they felt MAs performed their jobs well. Employees believe MAs are qualified to perform more tasks than they currently do but are less convinced they should take on more of these tasks. Still, the overall results show that perceptions are:

- MAs perform their job efficiently.
- MAs perform a wide range of tasks.
- MAs are qualified to perform more tasks.
- MAs should perform more tasks.

<table>
<thead>
<tr>
<th>Question</th>
<th>Average Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. MAs perform job efficiently.</td>
<td>3</td>
</tr>
<tr>
<td>2. MAs perform a wide range of tasks.</td>
<td>3</td>
</tr>
<tr>
<td>3. MAs are qualified to perform more tasks.</td>
<td>3</td>
</tr>
<tr>
<td>4. MAs should perform more tasks.</td>
<td>3</td>
</tr>
</tbody>
</table>

Pie Chart 1: Is there a long wait?
- Yes: 7%
- No: 79%
- Generally no: 7%
- Yes + No: 7%

Pie Chart 2: Do MAs affect wait time?
- Yes: 64%
- No: 22%
- Sometimes: 14%
The three pie charts above show the responses from the employee surveys. Pie Chart 1 shows that 79% of employees feel that patients have a long wait. Pie Chart 2 shows that 78% of employees feel MAs affect wait times at least some of the time while Pie Chart 3 shows that 93% of employees feel MAs are capable of shortening wait times.

**Benchmarking**

Two clinics were contacted to determine how their MAs are utilized. Both clinics responded that their MAs experience very little downtime and that their primary task is to provide physicians with support. Physicians rely on the MAs to obtain and prepare records, setup exam rooms depending on patient type, do vitals, get the patients into exam rooms, provide assistance during examinations if needed, and clean and flag rooms when finished.

In one benchmarking clinic, the Medical Assistants were recently assigned the responsibility of giving all shots and calling in prescriptions to the pharmacy. In the other clinic MAs schedule appointments, send out lab results, and deliver mail. Physicians do not work with the same Medical Assistants on a regular basis. A general consensus between the benchmarking clinics was this would be ideal.

**Data Observations**

**Video**

A video recording of two different types of patients was made to document the routine an MA performs. The video served as a catalyst to develop the flow chart and create a task list.
Table 3: Histogram showing the total time MAs spend with patients as determined through observations.

Table 3 shows the total time MAs spend with patients as determined through observations. MAs see the majority of patients between 2-5 minutes. Of those times that are above 5 minutes there is generally an interruption or other non-patient related cause lengthening the duration.

Table 5: Observation data broken down into day of week.

<table>
<thead>
<tr>
<th>DAILY Averages:</th>
<th># called pt</th>
<th>tm called-</th>
<th>take vitals</th>
<th>taking to room</th>
<th>Total Ave (w/xtra tm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monday:</td>
<td>1.07</td>
<td>0.48</td>
<td>3.61</td>
<td>0.61</td>
<td>4.72</td>
</tr>
<tr>
<td>Tuesday:</td>
<td>1.13</td>
<td>0.55</td>
<td>2.46</td>
<td>1.11</td>
<td>4.12</td>
</tr>
<tr>
<td>Wednesday:</td>
<td>1.39</td>
<td>0.78</td>
<td>3.34</td>
<td>1.62</td>
<td>5.17</td>
</tr>
<tr>
<td>Thursday:</td>
<td>1.15</td>
<td>0.68</td>
<td>2.52</td>
<td>1.92</td>
<td>4.62</td>
</tr>
<tr>
<td>Friday:</td>
<td>1.00</td>
<td>0.47</td>
<td>1.75</td>
<td>1.12</td>
<td>2.88</td>
</tr>
</tbody>
</table>

The average time spent with a patient is not service dependant. Overall, MAs spend the least amount of time with patients on Fridays at 3 minutes and the most amount of time with patients on Wednesdays at 5 minutes.

During the observations, downtime was determined to be a significant amount of an MA workday. It was monitored for 8 hours on a Wednesday and Friday. During this time, 44% of the day was classified as downtime. The breakdown included 40% between 8 a.m.-10 a.m. on Wednesday, 19% between 10 a.m.-1 p.m. on Wednesday, and 86% between 2 p.m.-5 p.m. on Friday afternoon.

The data indicates that the flags were utilized 60% of the time. However, all observers noted that it did not appear to be a normal habit and that the percentage might be inflated due to the observer's presence. In addition, random visits to the clinic after the observation period revealed the flags were seldom used. Furthermore, conversations with the MAs revealed that many were not aware of the reason for the flags or the system by which they were used.
Work Sampling Analysis

Data collected by Medical Assistants over a period of 2 weeks.

Figure 2: Work sampling results in breakdown of tasks.

Figure 2 illustrates the results of the work sampling method achieved through beepers (refer to Appendix F for definitions categories).

Taking Vitals takes up approximately 25% (or 40 hours in a week) of the MA’s time. In addition to this, the following activities were identified as taking up 84% of the MA’s time:

- Communication
- Break/Lunch
- Calling Patients
- Miscellaneous
- Charting
- Assistive Support
- Cleaning Rooms
- Miscellaneous
- Charting
- Assistive Support
- Cleaning Rooms

The remaining 16% of the MA activities are spent on:

- Scheduling
- Downtime
- Administrative Tasks
- Supplies
- Interruptions
A breakdown of these activities in terms of hours per day may be found in Table 1 on the following page.

**Division of MA Tasks by DOW (Total Hours/Week)**

<table>
<thead>
<tr>
<th>Task</th>
<th>Monday</th>
<th>Tuesday</th>
<th>Wednesday</th>
<th>Thursday</th>
<th>Friday</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calling Patients</td>
<td>3.38</td>
<td>2.50</td>
<td>3.68</td>
<td>1.79</td>
<td>3.04</td>
<td>14.84</td>
</tr>
<tr>
<td>Taking Vitals</td>
<td>10.19</td>
<td>5.00</td>
<td>3.68</td>
<td>11.92</td>
<td>6.85</td>
<td>37.09</td>
</tr>
<tr>
<td>Cleaning Rooms</td>
<td>2.25</td>
<td>2.00</td>
<td>1.38</td>
<td>0.60</td>
<td>0.76</td>
<td>7.42</td>
</tr>
<tr>
<td>Interruptions</td>
<td>0.00</td>
<td>1.00</td>
<td>0.00</td>
<td>1.19</td>
<td>0.00</td>
<td>2.28</td>
</tr>
<tr>
<td>Charting</td>
<td>2.82</td>
<td>2.50</td>
<td>0.00</td>
<td>2.38</td>
<td>2.28</td>
<td>9.70</td>
</tr>
<tr>
<td>Assistive Support</td>
<td>0.56</td>
<td>2.00</td>
<td>1.38</td>
<td>0.00</td>
<td>4.57</td>
<td>7.99</td>
</tr>
<tr>
<td>Administrative Tasks</td>
<td>0.00</td>
<td>1.50</td>
<td>0.92</td>
<td>0.00</td>
<td>1.52</td>
<td>3.99</td>
</tr>
<tr>
<td>Supplies</td>
<td>0.00</td>
<td>1.00</td>
<td>0.00</td>
<td>1.79</td>
<td>1.52</td>
<td>3.99</td>
</tr>
<tr>
<td>Scheduling</td>
<td>2.25</td>
<td>1.00</td>
<td>1.84</td>
<td>1.19</td>
<td>0.76</td>
<td>7.42</td>
</tr>
<tr>
<td>Communication</td>
<td>3.38</td>
<td>4.50</td>
<td>2.30</td>
<td>1.79</td>
<td>8.97</td>
<td>19.40</td>
</tr>
<tr>
<td>Miscellaneous</td>
<td>1.69</td>
<td>1.00</td>
<td>4.14</td>
<td>2.38</td>
<td>3.04</td>
<td>12.55</td>
</tr>
<tr>
<td>Downtime</td>
<td>1.69</td>
<td>2.50</td>
<td>0.00</td>
<td>1.19</td>
<td>0.00</td>
<td>5.71</td>
</tr>
<tr>
<td>Break/Lunch</td>
<td>2.82</td>
<td>3.00</td>
<td>3.68</td>
<td>4.77</td>
<td>2.28</td>
<td>17.12</td>
</tr>
<tr>
<td>Total Hours</td>
<td>31.00</td>
<td>29.50</td>
<td>33.00</td>
<td>31.00</td>
<td>35.00</td>
<td>149.50</td>
</tr>
</tbody>
</table>

*Captured 90% of MA hours.

Table 1: Breakdown of Medical Assistant tasks by day of week. Numbers shown are combined hours spent on each task based on MA schedule.

Table 1 shows that the Medical Assistants generally break up their tasks evenly throughout the day. The top three activities that occupy their time include:

- **Vitals**, which takes approximately 41 hours per week.
- **Communication**, which takes approximately 21 hours per week.
- **Break/Lunch**, which takes approximately 19 hours per week.

The least amount of MA time is on Wednesdays with 25.5 hours. Wednesday also has the second highest Break/Lunch rate of 4 hours. Vitals take the greatest amount of MA time on Mondays and Thursdays with 11 and 13 hours spent respectively. The only day where vitals do
not take the majority of MA time is on Fridays, where nearly 9 hours of the day is spent in communication.

On average 4 MAs are scheduled at a time. The MAs spend 35% of their time in calling patients and taking vitals, which enables them to handle 4 patients an hour. If the assumed non-value added time was taken away from the MA work load (downtime, interruptions and 80% communication), then the MAs could potentially spend 53% of their time on patient flow. This would equate to a little over 6 patients per hour. In all, 4 MAs could theoretically sustain a patient flow of 24 patients per hour.

A further breakdown of MA task may be found in Table 2. Table 2 breaks the MA tasks down into minutes for each hour of the day.

**Division of MA Tasks by Time of Day (Total minutes for staffing of four MAs)**

<table>
<thead>
<tr>
<th>Per Day</th>
<th>Monday</th>
<th>Tuesday</th>
<th>Wednesday</th>
<th>Thursday</th>
<th>Friday</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calling Patients</td>
<td>30.0</td>
<td>45.0</td>
<td>20.6</td>
<td>13.3</td>
<td>26.7</td>
</tr>
<tr>
<td>Taking Vitals</td>
<td>30.0</td>
<td>52.5</td>
<td>82.3</td>
<td>13.3</td>
<td>69.4</td>
</tr>
<tr>
<td>Cleaning Rooms</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>13.3</td>
<td>26.7</td>
</tr>
<tr>
<td>Interruptions</td>
<td>0.0</td>
<td>7.5</td>
<td>6.9</td>
<td>6.7</td>
<td>0.0</td>
</tr>
<tr>
<td>Charting</td>
<td>0.0</td>
<td>30.0</td>
<td>27.4</td>
<td>6.7</td>
<td>16.0</td>
</tr>
<tr>
<td>Assistive Support</td>
<td>0.0</td>
<td>0.0</td>
<td>6.9</td>
<td>0.0</td>
<td>10.7</td>
</tr>
<tr>
<td>Administrative Tasks</td>
<td>0.0</td>
<td>7.5</td>
<td>0.0</td>
<td>6.7</td>
<td>10.7</td>
</tr>
<tr>
<td>Supplies</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>10.7</td>
</tr>
<tr>
<td>Scheduling</td>
<td>40.0</td>
<td>22.5</td>
<td>41.1</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>Communication</td>
<td>20.0</td>
<td>45.9</td>
<td>34.3</td>
<td>20.0</td>
<td>10.7</td>
</tr>
<tr>
<td>Miscellaneous</td>
<td>20.0</td>
<td>0.0</td>
<td>6.9</td>
<td>0.0</td>
<td>16.0</td>
</tr>
<tr>
<td>Downtime</td>
<td>0.0</td>
<td>0.0</td>
<td>13.7</td>
<td>13.3</td>
<td>0.0</td>
</tr>
<tr>
<td>Break/Lunch</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>146.7</td>
<td>42.7</td>
</tr>
</tbody>
</table>

Table 2: Division of MA tasks into hours per day for an average day. The numbers are the total number of minutes based on MA schedule.

Table 2 illustrates the breakdown of MA tasks for one workweek. During most hours of the day the total time spent on taking vitals is above 40 minutes. The exception to this rule is 11:00-12:00 a.m. During this time only 13 minutes are spent taking vitals and 146.7 minutes are spent
on Breaks and Lunches. Vital taking time is particularly high between 8:00-11:00 a.m. In addition, communication is high between 9:00-11:00 a.m. and 1:00-4:00 p.m.

Based on the work sampling study, MA utilization is 96%. This calculation does not include the downtime since breaks and lunches are part of the MA contract. In all, each MA scheduled should receive two 15-minute breaks and one 30-minute lunch (for an 8 hour day). This would equal a total of 19 hours in breaks and lunches in a week and the MAs are using a total of 18.78.

**Patient Cards**

Data collected by patients over a period of 2 weeks.

**Averages of Patient Flow (Minutes)**

<table>
<thead>
<tr>
<th></th>
<th>Arrival</th>
<th>Wait</th>
<th>MA</th>
<th>Room</th>
</tr>
</thead>
<tbody>
<tr>
<td>8:00 AM</td>
<td>5.0</td>
<td>25.0</td>
<td>3.0</td>
<td>42.0</td>
</tr>
<tr>
<td>9:00 AM</td>
<td>-5.3</td>
<td>24.9</td>
<td>3.3</td>
<td>90.1</td>
</tr>
<tr>
<td>10:00 AM</td>
<td>-7.1</td>
<td>19.3</td>
<td>3.6</td>
<td>91.6</td>
</tr>
<tr>
<td>11:00 AM</td>
<td>-10.0</td>
<td>16.3</td>
<td>5.0</td>
<td>67.8</td>
</tr>
<tr>
<td>12:00 PM</td>
<td>-6.0</td>
<td>11.6</td>
<td>4.5</td>
<td>71.8</td>
</tr>
<tr>
<td>1:00 PM</td>
<td>-5.0</td>
<td>23.0</td>
<td>5.5</td>
<td>54.6</td>
</tr>
<tr>
<td>2:00 PM</td>
<td>-5.0</td>
<td>35.0</td>
<td></td>
<td>30.0</td>
</tr>
<tr>
<td>3:00 PM</td>
<td>-7.5</td>
<td>4.0</td>
<td>5.5</td>
<td>71.5</td>
</tr>
</tbody>
</table>

* Only had one data point
** During the 12:00 and 2:00 PM periods for the MA times, outliers of 25 minutes and 125 minutes respectively were excluded along with all points equaling 0.

Note: A negative number means arriving early.

Table 3: Average of Patient Flow durations broken down by hour of day (Definitions may be found in Appendix F).

- The average amount of time a patient spends in their room is 90.1 minutes for a 9:00 scheduled appointment and 91.6 minutes for a 10:00 appointment.
- Patients scheduled for 11:00 appointments arrive at the clinic 10 minutes early.
- MAs take 5.5 minutes with a patient scheduled for 1:00 and 3:00.
- Patients spend 16% of their time in the wait room, 3% of their time with the MA, and 81% of their time in the patient room.
Figure 2: Plot of patient arrival time, the time patients were called back, the time patients entered a room, and the time patients left a room. All numbers are relevant to the appointment time. I.E. in the 8:00A time block the patient arrived approximately 5 minutes late for the appointment, was called back approximately 35 minutes after their appointment time, entered the room approximately 36 minutes after the appointment time, and left the patient room approximately 75 minutes after the appointment time.

Figure 2 shows:

- The majority of a patient's wait is experienced inside patient rooms.
- The MAs spend a minor amount of time with patients (approximately 3-5 minutes)
- The patients' wait in the waiting room is small, especially when compared to the waits in the exam rooms.
- The duration of appointments is not related to time of day.
Figure 5: Histogram showing the distribution of arrival times.

Figure 5 illustrates the distribution of arrival times. All appointment times were given a value of zero and arrival times were calculated according to this reference point. In the diagram, all numbers to the left of the vertical line are patients who arrived early for their appointments at various times. Only 35% of the patients arrived to the clinic late for their appointment.

Figure 6: Histogram showing the amount of time patients spent in the waiting room.

Figure 6 shows the distribution of time patients spent in the waiting room. Overall, the average amount of time spent in the waiting room was 22 minutes. The median duration in the waiting room was 15 minutes.
Average time MAs spend with patients is 4.4 minutes. This was calculated excluding 0s since this is likely due to patient error.

Figure 7: Histogram showing the amount of time Medical Assistants spent with patients.

Figure 7 illustrates the amount of time MAs spent with patients. The majority of patients spend 5 minutes or less with the patient. Many of the patient cards indicated zero time spent with the MAs while one indicated over 2 hours spent with the MA and one indicated 25 minutes spent with the MA. According to our observations, these times would appear to be inaccurate. The results indicated in all tabulations based on the cards excluded them as outliers and errors in an attempt to obtain the true times spent with MAs.

Average patient room duration is 76.8 minutes.

Figure 8: Histogram showing the amount of time patients spend in rooms.

Figure 8 shows the amount of time patients spend in rooms. The average amount of time is 76.8 minutes. Generally, patients are scheduled for 30-minute appointments. This does vary slightly depending on the clinic and can be as low as 20 minutes or as high as an hour. Although patients are scheduled per physician, the correlation between physician and room is close.
Figure 3: Time patients are occupying rooms verses the norm time allotted for patients to occupy rooms. It is expected that the sample size only included two patients classified for longer appointments then 30 minutes and some patients were scheduled for appointments of only 20 minutes.

Figure 3 graphically shows the difference between the amount of time a patient is scheduled for an appointment and the amount of time a patient is spending in the patient rooms. The max time spent in a patient room is 208 minutes (3 hrs and 28 minutes) and the minimum time spent in a patient room was 13 minutes. There are only 5 appointments that broach the 30-minute scheduled time period. There are some clinics that schedule longer then 30 minutes per patient but these are a very few clinics. Of these patients, two were in Neurology, which schedules 45-minute appointments. These two patients occupied the 25-minute slot and the 30-minute slot. That leaves 3 patients who were in the patient rooms equal to or under the amount of time they were scheduled for, while 34 patients exceeded their scheduled time in patient rooms.
Patient Card Data Analysis

<table>
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<tr>
<th></th>
<th>Arrival Time</th>
<th>Waiting Rm durations</th>
<th>Called Back</th>
<th>MA Duration</th>
<th>Enter Rm</th>
<th>Pt. Room Duration</th>
<th>Leave Rm</th>
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<td>23.2</td>
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<td>85</td>
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<td>30</td>
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<tr>
<td>Median</td>
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<td>15</td>
<td>77</td>
<td>90</td>
</tr>
</tbody>
</table>

*Took out two outliers, one of 105 minutes for duration with MAs and one of 25 minutes.

Table 4: Summary of Patient Card data.

Table 4 is a summary of the results obtained from the patient card data. The average amount of time a patient spends in a room is 76.8 minutes while the average time their appointment lasts is 99.2 minutes. The longest appointment lasted 220 minutes, of which 208 minutes or 95% of the time was spent in the patient room. Other information obtained was:

- Patients on average arrive 6.1 minutes early for appointments
- The longest a patient waited in the waiting room was 95 minutes.
- The shortest a patient waited in a waiting room was 3 minutes.
- The median of waiting times is lower than the average. This means that some data points are long enough waits that they affect raise the average. This also means, however, that the normal waiting period is around 15 minutes.

Work Load Analysis

Figure 9: An analysis of the ratio of patients to MAs at different hours in the day. Source of data is Patient Volume from October of 2000.

Figure 9 illustrates the ratio of patients to MAs by day of week and hour of day. On Wednesday there is a consistently high patient to MA ratio in the afternoon. On Tuesday, the patient to MA ratio is high in the mornings. Monday consistently has the lowest patient to MA ratio. During
the day low patient to MA ratios occur at the very beginning of the day, the lunch hour, and the end of the day. While this is true, the lunch hour data is figured without the MAs taking lunch since it is near impossible to determine how many MAs will be on lunch at what time. Once factoring in the lunch hour shift the average shows that throughout the hours of the day, the patient to MA ratio is fairly consistent. A total of 4.1 patients are scheduled per MA. This is equal to the Patient:MA ratio found through a combination of Observations and Work Sampling Data. (See Appendix D).

<table>
<thead>
<tr>
<th></th>
<th>Average Wait (mins)</th>
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<td>Thursday</td>
<td>17</td>
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<tr>
<td>Friday</td>
<td>24</td>
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</table>

Table 3: Average time spent in the waiting room according to the patient card information.

Table 3 lists the average amount of time in minutes spent in the waiting room. This data was gathered from the patient card information and helps to correlate patient to MA ratio with wait time. The sample size for each day is relatively small, however, and so the numbers should only be taken as relative figures. Wednesday has the highest percent of patient to MA ratio and also has the highest waiting times.
Findings and Conclusions

Scheduling:

Workload problems are attributed to staffing preparation conflicts rather than actual workload.

In the initial meeting, the client identified 8:00-10:00 a.m. as a problem area in workload. This is a hectic period for the MAs although it may not be due strictly to workload. During this 2-hour period, there was over 47 minutes of downtime observed for the MA. The staff is unprepared for the morning workload, which adds to the busy atmosphere. At 7:00 a.m. one MA is scheduled and the remaining three are staggered at half hour increments. At this time they must take care of all patients with 8:00 a.m. appointments, clean any rooms not cleaned the previous night, train any temporary staff, prepare the whiteboards for the physicians, and perform some administrative tasks. The majority of these duties could be performed before patients actually arrive. In addition, many of the patients arrive 10-15 minutes early for their appointments. They could be shown back as they arrive to avoid the heavy workload demands at 8:00 a.m.

Utilization of Flag System:

Lack of utilization of the flag system in the clinic causes non-value added tasks.

Another problem observed was the lack of utilization of the flag system in the clinic. A system is in place so that when physicians leave a room, they notify the MAs of the need to clean that room by “flagging” the room. Once the MA has clean the room, they too “flag” it by pulling out another color. Currently, neither physicians nor MAs use the system consistently and some are not aware of how the system works. This lack of compliance causes the MAs to look for rooms that are clean or need to be cleaned

Downtime Activity Lists:

Downtime activity list needs to be modified to increase utilization of MAs.

Prior to the study, the MAs created a list of tasks that could be done when they were not with patients. Through observations it appeared that the MAs are not using the list. The list needs to be revised or have tasks added to it so that the MAs can remain busy. Tasks that are non-time dependant should be added so that at any point during the day there are tasks that can be completed.

MAs’ Time with Patients:

Time MAs spend with patients is not dependent upon patient type.

During the initial interview with the client, many perceptions about the MA’s work were discussed. Among these was the time it took to take care of “special” patients. This would include babies, Nephrology patients, and Dialysis patients. It was believed that because these patients required extra activities the time to take care of the patients was greater. The time studies show that this is not the case. Most direct patient time is
completed in the four-minute range but can vary between three to five minutes. Those patients that took longer were usually due to interruptions. These instances were the exception rather than the rule, however. When patients required more tasks, the MAs performed many of the extra tasks while talking with the patient. If the patient were relatively low maintenance, MAs would take time to talk to the patients while not performing specific tasks. The ability to have this communication greatly influences the morale of the MAs, however, and should not be considered a problem area.

Data Analyses from Observations:

*Analyzing data from the observations of the MAs shows:*

1) Average time to call patients is NOT service dependent.
2) Time between calling patients and completing vitals is NOT service dependent.
3) Taking vitals is NOT dependent upon the type of the service required.
4) Time spent in the room after vitals are taken, IS service dependent.
5) Total time MAs spend with the patients is consistent among all services.

Surveys and Interviews:

*Physicians, nurses, clerks, and managers acknowledge the long waiting periods at the clinic. While they do not feel the MAs are the cause, they do think the MAs can do more to shorten the wait.*

The interviews and surveys revealed that the Medical Assistants are not the main reason for long waiting periods. The surveys showed that the waiting periods that patients encounter are mainly due to the wait they incur in the waiting room until a physician has arrived. The physicians, nurses, and managers agree that often the clinic is so busy that it is not possible for physicians to meet with patients quickly, and rooms do not become available. They believe that room availability is a major problem and that the Medical Assistants do not have control over the back up when rooms are filled. The MAs' responsibilities are to notify the patients when the wait will be longer than expected along with pre-checking patients so that when a room becomes available the patient can enter right away.

See Appendix A for Survey sample.

Work Sampling Study:

*Medical Assistants spend over 84% of their time on 62% of their tasks.*

The work sampling shows that the MAs take on a variety of tasks that they break up evenly throughout the day. The top three activities that occupy their time include: vitals, communication and break/lunch. The MAs spend 35% of their time calling patients and taking vitals when potentially they could spend 53% of their time on patient flow. This would equate to a little over 6 patients per hour versus 4 patients per hour.
Benchmarking:

*The Medical Assistants at the clinic we studied experience less downtime.*

After talking to the directors of both clinics we learned that the medical assistants have very little downtime due to the extra responsibilities and non-time dependent tasks they perform daily. Beyond the tasks that were similar to those at the Pediatric Multi-Specialty Clinics, their MAs also give shots, call in prescriptions to the pharmacy, schedule appointments, send out lab results, and deliver mail.

Work Load Comparison:

*Patients spend more time than allotted in rooms causing scheduling conflicts.*

The patient cards showed that rooms are scheduled for 30-minute visits when in fact the data showed that patients spend an average of around 77-minutes in the rooms. The reason for long waits has a lot to do with the fact that no rooms are available and not the MAs responsibility. This may also indicate that the doctors need to be faster in meeting with a patient or that they need to plan on scheduling patients further apart.
Recommendations

The following recommendations pertain to the Medical Assistants. MAs should:

- Assure that at least one arrive to the clinic a half hour before the first scheduled appointment to prepare clinic before patients arrive. These include cleaning rooms that were not done the previous night, training any temporary staff, preparing the whiteboards for the physicians, and performing administrative tasks.
- Get rooms ready for the following day after the clinic closes to assure that the clinic can start on time in the morning.
- Be checking the schedule throughout the day to plan ahead for the next morning’s tasks.
- Be educated about the importance of the flag system and strongly encouraged to use it.
- Be staffed to particular clinics so they develop stronger working relationships with the physicians and their coworkers.
- Pre-check patients who have been in the waiting room for long periods of time so the patient could enter an exam room when one becomes available.
- Consistently check with patients to inform them of where their appointment is in the schedule.
- Complete and initial a checklist of downtime activities daily.

The following recommendations pertain to the clinic as a whole:

- The “Downtime Activity List” should be replaced with a modified checklist to notify MAs of tasks that have been accomplished and tasks that need to be completed for that day.
- Clinics should reach a consensus on how to deal with patients who come late.
- Perform a similar study on the physicians to shorten the wait times even further.
- Review and modify all scheduling templates to balance with realistic appointment times.
Pediatric Multi-Specialty Clinic Survey
Utilization of Medical Assistants

What is your position? ____________________________
What is your service? ____________________________

1a. Do you believe patients have long waiting times in the waiting room? ____________________________
   Yes No
   If so, what is the cause?

1b. How many minutes is a long wait time in the waiting room? ____________________________
2. Do you believe Medical Assistants affect patient waiting times? ____________________________
   Yes No
3. Do you believe Medical Assistants could shorten waiting times? ____________________________
   Yes No
   How?

4. I believe Medical Assistants perform their jobs efficiently. ____________________________
   Comments
   Disagree 1 2 3 4 5 Agree

5. I believe Medical Assistants perform a wide range of tasks. ____________________________
   Comments
   Disagree 1 2 3 4 5 Agree

6. I believe Medical Assistants are qualified to perform more tasks. ____________________________
   Comments
   Disagree 1 2 3 4 5 Agree

7. I believe Medical Assistants should perform more tasks. ____________________________
   Which tasks should they assume?
   Disagree 1 2 3 4 5 Agree

8. Please list any tasks the Medical Assistants should not be performing that they currently do.

9. Please list what the primary responsibilities of the Medical Assistant are.

10. Please list what the secondary responsibilities of the Medical Assistant are.

11. Please add additional comments (positive and/or negative) on the back of this sheet.
Appendix B: Flow Chart of Vital Collection Process

START

Receive Message Of Arrival

Get Patient Info. (Red Folder)

Call for Patient

Patient in Atrium

Take Vitals In Vital-Taking Area

Patient in Playroom

YES

Check if Room Is Ready

Show to Room/Ask pt about Med.

Nephrology Patient?

No

Put Patient Name On White Board

Pull Extra Charts

Place Charts in Bin

Return to Station

End

NO

Show to Wait Room

Yes

Get Urine Sample
Appendix C: Downtime Activity List

The following is a current list of activities MAs created to perform during downtime:

- Check/Clean/Straighten holding room
- Check exam room
- Hemoccult packets
- Hemoccult results
- Wipe down nursing station
- Clean empty rooms before you bring patient back
- Check your assigned duties
- Assist in the Urology Clinic
- Fill otoscopes in exam rooms
- Check/Clean/Straighten consult rooms
- Check to see if staff rooms need requisition
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<th>Faculty</th>
<th>Date</th>
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<th>Arrival Time</th>
<th>Waiting Room Duration</th>
<th>MA Duration</th>
<th>Pt. Roor Duration</th>
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</tbody>
</table>
Appendix G: Approval Sheet

Client: Sylvia Ertman

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