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Cory Vander Jagt

Katie Lee

Pediatric Time Standard Analyses
Background

The time systems used throughout the University of Michigan Hospital's accounting system is used in the budgeting process as well as to assist with the allocation of resources.

Professional time standards are used so that patients are accurately billed for services that patients are accurately billed for.

The standards are used in the budgeting process as well as to assist with the allocation of resources.

The Time Systems Incorporated (TSI) cost background
nationally set standards

department, which are currently using
divisions within the Pediatric
times have never been validated,

but the Pediatric department for 3 years, but the

standards have been in place in the

Background
The two divisions and their team leads are:

Neurology - Steve Leber, MD
Rheumatology - Barbara Adams, MD

The objective of this project was to perform time studies of 2 of 16 divisions within the pediatric department.

Introduction and Purpose
Approach and Methodology

Thirty patients were observed from each clinic level. Time represents about 1% of the total monthly patient volume. 30 observed neurology patients over a month's time.

Time represents about 17% of the total monthly patient volume. 30 observed rheumatology patients over a month's time.

Developed a time study template, which broke down billable activities for each professional.
Approach and Methodology

The ratio of return to new patients in both

The observations included both new and

Collecting is representative of this

Clinics was about 4:1, and the data

Returning patients
and check out for two hours.

The office manager and observing check in,

These times were the result of interviewing

received.

times were independent of the care

check in, check out, billing and batching

observed.

outpatient clerk activities were also

Approach and Methodology
Findings - Task Flow with Resident or Fellow
Findings - Task Flow Without Resident or Fellow
Findings - General Summary

Coordinators by interviewing each professional and clinic
numbers were estimated from observations and
patients' care giver will actually see. These
weighted averages result from the percentage of
this is what will be used to bill patients for care
weighted averages will also be presented since
clinical observations.
The data is a result of the averages taken from the
# Data Analysis - General Rheumatology Summary

<table>
<thead>
<tr>
<th>Professional</th>
<th>% of Patients Examined</th>
<th>% New Patients Examined</th>
<th>% Patients Referred</th>
<th>% New Patients Referred</th>
<th>Time</th>
<th>Total Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Professional Rheumatologist</td>
<td>15%</td>
<td>15%</td>
<td>15%</td>
<td>15%</td>
<td>0:01:43</td>
<td>0:11:15</td>
</tr>
<tr>
<td>Medical Assistant</td>
<td>25%</td>
<td>25%</td>
<td>25%</td>
<td>25%</td>
<td>0:04:28</td>
<td>0:07:10</td>
</tr>
<tr>
<td>Nurse</td>
<td>50%</td>
<td>50%</td>
<td>50%</td>
<td>50%</td>
<td>0:04:13</td>
<td>0:04:12</td>
</tr>
<tr>
<td>Faculty MD</td>
<td>10%</td>
<td>10%</td>
<td>10%</td>
<td>10%</td>
<td>0:04:54</td>
<td>0:04:54</td>
</tr>
<tr>
<td>Medical Student</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>0:04:12</td>
<td>0:04:12</td>
</tr>
<tr>
<td>Resident/Fellow</td>
<td>60%</td>
<td>60%</td>
<td>60%</td>
<td>60%</td>
<td>0:03:38</td>
<td>0:04:46</td>
</tr>
<tr>
<td>Social Worker</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>0:04:36</td>
<td>0:04:21</td>
</tr>
<tr>
<td>Professional</td>
<td>Faculty MD</td>
<td>Resident/Fellow</td>
<td>Medical Assistant</td>
<td>Professional</td>
<td></td>
<td></td>
</tr>
<tr>
<td>--------------</td>
<td>------------</td>
<td>----------------</td>
<td>-------------------</td>
<td>--------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>% examined</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>% New Patients</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>% Return</td>
<td>25%</td>
<td>25%</td>
<td>25%</td>
<td>25%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Weighted Neurology Average New</th>
<th>0:34:36</th>
<th>0:34:26</th>
<th>0:34:38</th>
<th>0:34:38</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weighted Return Neurology Average</td>
<td>1:11:06</td>
<td>1:11:06</td>
<td>1:11:06</td>
<td>1:11:06</td>
</tr>
<tr>
<td>New Neurology Return</td>
<td>0:03:17</td>
<td>0:03:17</td>
<td>0:03:17</td>
<td>0:03:17</td>
</tr>
<tr>
<td>Total Time</td>
<td>1:49:01</td>
<td>0:58:33</td>
<td>0:34:42</td>
<td>0:49:01</td>
</tr>
</tbody>
</table>

Data Analysis

General Neurology Summary
The following data was observed for return Rheumatology patients.

Data Analysis - Rheumatology
The following data was observed for new Rheumatology patients.

Data Analysis - Rheumatology
The following data was observed on return Neurology patient times.

Data Analysis - Neurology
The following data was observed of new Neurology patients:

**Data Analysis - Neurology**
Finding
Data Analysis - Rheumatology

- Physical Therapist
- Social Worker
- Nurse
- Fellow
- Faculty Exam w/ Resident or Fellow
- Resident or Fellow w/ Faculty Consultation
- Resident or Fellow Exam
Rheumatology New Patient Exam with Resident or Fellow

- Physical Therapist
- Social Worker
- Nurse
- Fellow
- Faculty Exam w/ Resident or Fellow
- Resident or Fellow
- Faculty Consultation w/ Resident or Fellow
- Resident or Fellow Exam
- MA

Data Analysis - Rheumatology
Neurolagy Return Patients with Resident or Fellow Exam

- 28% 0:03:19
- 44% 0:26:30

Data Analysis - Neurology
Data Analysis - Neurology

Neurology New Patients with Resident or Fellow

- Faculty MD
- Resident/Fellow and Exam with
- Faculty MD
- Resident/Fellow and Consultation w/
- Resident/Fellow Exam
- Medical Assistant

0:03:17

24% 26:02
39% 42:28
3% 0:03:17
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Resident or Fellow Consultation w/ Resident</td>
<td>0:14:56</td>
<td>0:01:18</td>
<td>0:10:57</td>
<td>0:07:27</td>
</tr>
<tr>
<td>Exam w/ Resident or Fellow</td>
<td>0:12:14</td>
<td>0:03:00</td>
<td>0:09:34</td>
<td>0:08:06</td>
</tr>
<tr>
<td>Faculty</td>
<td>0:26:02</td>
<td>0:17:00</td>
<td>0:17:57</td>
<td>0:10:44</td>
</tr>
<tr>
<td>Total Time</td>
<td>0:37:47</td>
<td>0:17:57</td>
<td>0:42:28</td>
<td>0:26:02</td>
</tr>
</tbody>
</table>

**Rheumatology Patients**

- Standard Deviation
- Average

**Neurology Patients**

- Standard Deviation
- Average

**New Neurology**

- Standard Deviation
- Average

**New Rheumatology**

- Standard Deviation
- Average

**Data Analysis - Summary**
The following data is for the Outpatient Clerk activities.

<table>
<thead>
<tr>
<th>Samples</th>
<th>Standard Deviation</th>
<th>Average Time</th>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>0:03:25</td>
<td>0:03:22</td>
<td>Sort Tickets</td>
</tr>
<tr>
<td>10</td>
<td>0:03:17</td>
<td>0:03:32</td>
<td>Check Out</td>
</tr>
<tr>
<td>18</td>
<td>0:01:55</td>
<td>0:03:28</td>
<td>Check In</td>
</tr>
</tbody>
</table>

Data Analysis - Outpatient Clerk
Conclusions

The data presented concludes a one month observation of the Rheumatology and Neurology divisions of the Pediatric Clinic. The weighted averages are better than those take into account the percentage of patients a staff member will provide care for.
Recommendations

To get a better cross reference, it is recommended that more divisions be observed to ensure accuracy.

In this study, it was used in scheduling patient visits for the pediatric clinic. It is also recommended that the times developed be incorporated into the TSL cost accounting system.

It is recommended that the presented data be