ABSTRACT

Introduction: RVUs are used in healthcare to compare productivity among healthcare providers. RVUs are calculated by applying a numerical factor to a medical service based primarily on the time required to perform the service. The use of RVUs in other areas of healthcare are not well established.

Objective: To describe the development and implementation of RVUs as part of the clinical research operations of the Division of Infectious Diseases.

Methods: The daily activities of a current community-acquired pneumonia study were delineated. RVUs were calculated by applying numerical factors according to the estimated time needed to perform each study task. A database in REDCap was developed to capture RVUs on a daily basis. On-demand reports from the database were developed using the R statistical software.

Results: A total of 13 primary tasks were identified with several subtasks within each. RVUs were collected for each task and subtask. RVU determination began in August 2014. During the first year, data were collected on over 80,000 RVUs for 66 research members.

Conclusions: Our experience indicates that RVUs can be successfully implemented in a clinical research operation. RVU data were valuable in the selection of clinical research team leaders as well as the implementation of performance improvement plans.

INTRODUCTION

Relative Value Units (RVUs) are the relative value of time, training and skill to provide a given service or task. They are calculated by applying a numerical factor to a medical service based primarily on the time required to perform the service. RVUs are used in healthcare to compare productivity among healthcare providers.

Clinical Research trials are becoming more extensive with countless amount of tasks. Usually, sites are conducting multiple trials simultaneously, in several stages, from enrollment to trial close. These trials have many specifics with more complicated duties therefore the use of additional staff is needed. It is common in Research Institutions to have many Research Coordinators and Associates working at different levels of training. Organizing and evaluating work within big groups can be very challenging. Although there are many methods of improving staff performance, the use of RVUs may be helpful. The use of RVUs in other areas of healthcare including clinical research is not well established.

The objective of this study was to describe the development and implementation of RVUs as a part of the clinical research operations of the Division of Infectious Diseases.

MATERIALS AND METHODS

Clinical Study

A Population-Based Study to Define the Clinical & Economic Burden of Pneumococcal Pneumonia in Hospitalized Adult Patients in Jefferson County, Kentucky (HAPPI). This study is being lead by Dr. Julio A. Ramirez and managed by the Clinical Translational Research Support Unit (CTRUS) at the Division of Infectious Diseases. The CTRUS structure is shown in Figure 1.

Study Daily Activities

The daily activities of the group performing this study were evaluated and an average time needed to perform each study task was estimated. This estimation was based on the average amount of time it took the staff as a whole to complete each individual task.

Development of RVU Database

REDCap (Research Electronic Data Capture), a secure web-based application designed to support data capture for research studies, was used to capture RVUs on a daily basis.

Analysis of RVU Data

The data from REDCap was analyzed using the software R, it is a software environment for statistical computing and graphs. Reports were generated for all the different tasks.

RESULTS

Study Daily Activities

Throughout the study a total of 13 primary tasks were identified with several subtasks within each. These tasks make up the daily process for enrolling a subject and collecting their data. The median time for each one of the tasks identified is shown in Table 1.

Development of RVU Database

The RVU Database was developed using REDCap is depicted in Figure 1.

Analysis of RVU Data

Examples of the reports generated for analysis of RVU data are depicted in Figures 2 & 3. RVUs were collected for each task and subtask. Each study task was considered to be an RVU. During the first year, data were collected on over 80,000 RVUs for 66 research members.

Table 1 Median time for each study task

<table>
<thead>
<tr>
<th>Tasks</th>
<th>Median Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Screening</td>
<td>0.60</td>
</tr>
<tr>
<td>Patients Eligible</td>
<td>0.60</td>
</tr>
<tr>
<td>Enrolling</td>
<td>1.00</td>
</tr>
<tr>
<td>Post Enrollment</td>
<td>0.19</td>
</tr>
<tr>
<td>Initial Data</td>
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<tr>
<td>HAPPI Data Collection</td>
<td>1.25</td>
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<tr>
<td>HAPPI Data Entry</td>
<td>0.5</td>
</tr>
<tr>
<td>Clinical Stability</td>
<td>0.12</td>
</tr>
<tr>
<td>Blood Cultures</td>
<td>0.09</td>
</tr>
<tr>
<td>Consents</td>
<td>0.10</td>
</tr>
<tr>
<td>Queries</td>
<td>0.12</td>
</tr>
<tr>
<td>Other Tasks</td>
<td>0.46</td>
</tr>
<tr>
<td>Auditing</td>
<td>0.10</td>
</tr>
</tbody>
</table>

CONCLUSIONS

- Our experience indicates that RVUs can be successfully implemented in a clinical research operation.
- RVU data were valuable in defining clinical research associates with a high level performance. These data helped in the selection of leaders for the research teams.
- Clinical research associates with high performance in data collection were valuable to other members of the research team to define procedures associated with improving data collection.
- Identification of areas of low RVU data were valuable to define the need for implementation of performance improvement plans.
- In conclusion, clinical research RVUs can be seen as a useful tool when performing complex clinical studies involving a large number of clinical research members.

REFERENCES

1. http://project-redcap.org/