Nurse Use of Vital Sign Flowsheet Comments: Shared or Individual Practice?

Jessica Schwartz, RN, BSN1, Christopher Knaplund, MPhil1, Sarah Collins Rossetti, RN1,2, PhD, Min Jeoung Kang, RN, PhD3, Patricia Dykes, RN, PhD3, Zfania Tom Korach, MD3, Kumiko Schnock, RN, PhD3, Li Zhou, MD, PhD3, Kenrick Cato, RN, PhD1

1Columbia University School of Nursing, New York, NY; 2Columbia University, Department of Biomedical Informatics; 3Division of General Internal Medicine and Primary Care, Brigham and Women’s Hospital, Boston, MA

Introduction

When documenting in electronic health records (EHRs), clinicians can record patient care and findings in both structured (e.g., flowsheets) and unstructured (e.g., notes) formats. Previous studies have shown that hospital nurses use unstructured flowsheet comment fields to add detail to structured flowsheet data1. For example, nurses comment that they informed a physician about an abnormal vital sign or that they performed an intervention1. Evidence also shows that an increase in flowsheet comments written by nurses is associated with increased likelihood of cardiac arrest and death2. However, little is known about the variability in the use of flowsheet comments by hospital nurses. In this study, we analyzed vital sign flowsheet comments to assess variability among individual nurses with regards to their experience, shift type (day/night), and unit (medical/surgical [MS] or intensive care [ICU]).

Methods and Analysis

We analyzed EHR flowsheet and provider data from 2015-2017 collected at NewYork-Presbyterian Hospital. Descriptive statistics were calculated for vital sign flowsheet comments written per shift per nurse. The number of days that the nurse had an active EHR user ID was used as a proxy for clinical and EHR experience.

Results

We analyzed 73,003 shifts from 1,003 nurses and found that the average comments written per shift per nurse was not uniform (Figure 1). 21% of all nurses averaged 1 or more comments per shift and wrote 59% of all comments, representing the 78th percentile and above. These “high-comment” (HC) nurses on average had 21% less days of experience than non-HC nurses and worked the majority of shifts on MS units, while the majority of shifts worked by non-HC nurses were on ICUs (see Table 1).

Table 1. Variability among HC and Non-HC nurses

<table>
<thead>
<tr>
<th>Nurses</th>
<th>Comments/shift Mean (95% CI)</th>
<th>Days of Experience Mean (95% CI)</th>
<th>Shift Type Day/Night (95% CI)</th>
<th>Unit MS/ICU (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>HC</td>
<td>1.91 (1.75-2.06)</td>
<td>2139.35 (1993.88-2284.81)</td>
<td>58/42% (57-59/41-43%)</td>
<td>67/33% (66-68/32-34%)</td>
</tr>
<tr>
<td>Non-HC</td>
<td>0.19 (0.17-0.21)</td>
<td>2581.17 (2484.30-2678.04)</td>
<td>65/35% (65-66/34-35%)</td>
<td>44/56% (44-45/55-56%)</td>
</tr>
</tbody>
</table>

Conclusions

Factors related to the nurse and their environment influence EHR documentation behavior which is known to relate to patient outcomes. This work is limited by lack of data on other potentially confounding variables such as training and patient acuity. However, our findings indicate the need for more research to explore why this variability exists so that predictive modeling of patient outcomes based on EHR data is informed by nursing factors.

References