Medication Review Software to Improve the Accuracy of Outpatient Medication Histories

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Abstract

The medication review (MR) process is an inherently complex task and little data exists to inform system-based operationalization. One major gap in the current MR literature is the lack of a standardized approach to MR success and failure. This paper describes the implementation of a medication review software in a large, integrated healthcare system; the software was designed to improve MR accuracy by leveraging a combination of Patient Input, Provider Input, and Pharmacy Input. This process was evaluated using a Randomized Controlled Trial (RCT) and a retrospective review of the stored medication image archive. Overall, the medication review software demonstrated greater than 99% accuracy, with the highest accuracy in the Drug Class Discrepancy Type. The software was also shown to decrease cognitive load and workload associated with MR through the use of a patient-friendly, on-screen interface and touch-responsive technology. Future work will focus on the development of a comprehensive MR strategy that includes a medication review software to improve the accuracy of outpatient medication histories.

Introduction

Health literacy have shown that pictures can improve comprehension and recall compared to a paper-based, text-only survey. Preliminary studies of patient touch-responsive on-screen buttons.

Technology and Network Architecture for Ambulatory MR Kiosk Solution

Randomized Control Trial (RCT) Study Design

Results

RCT Interim Data Peek Analysis

<table>
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<tr>
<th>Type of Medication Discrepancy</th>
<th>Total Discrepancies</th>
<th>Interim N</th>
<th>Interim P</th>
<th>Projected N</th>
<th>Projected P</th>
<th>Trend</th>
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<tbody>
<tr>
<td>Omissions</td>
<td>337</td>
<td>314</td>
<td>5</td>
<td>250</td>
<td>5</td>
<td>-</td>
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<td>Commissions</td>
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<td>40</td>
<td>2</td>
<td>15</td>
<td>2</td>
<td>-</td>
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<tr>
<td>Failures</td>
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<td>12</td>
<td>1</td>
<td>20</td>
<td>1</td>
<td>-</td>
</tr>
</tbody>
</table>

Conclusions

The medication review software was designed to improve the accuracy of outpatient medication histories by leveraging a combination of Patient Input, Provider Input, and Pharmacy Input. The software demonstrated greater than 99% accuracy in the Drug Class Discrepancy Type, with the highest accuracy in the Drug Class Discrepancy Type. The software was shown to decrease cognitive load and workload associated with MR through the use of a patient-friendly, on-screen interface and touch-responsive technology.

References