Order Source Misattribution: The Impact on CPOE Metrics

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Introduction
The Santa Rosa Region of CHRISTUS Health launched Computerized Patient Order Entry (CPOE) in January 2012. CPOE meaningful use was defined as direct order entry of laboratory, radiology, and pharmacy orders by physicians, nurse practitioners, physician assistants and residents.

A critical component of our strategy to drive physician adoption was the monthly distribution of a list of all physicians in each facility identifying the percentage of orders that were entered electronically in CPOE versus those remaining on paper. Physicians care about these facility Monthly CPOE Use Rate Reports because they understand and support patient safety and quality improvement objectives of CPOE implementation. In addition, certain groups of physicians were motivated because they participate in one of our regional financial arrangements with providers. CHRISTUS Santa Rosa includes incentive payments or financial penalties for meeting or failing to meet a specified CPOE use rate target.

Early in our use of CPOE Use Rate Reports to drive adoption we discovered that a small but not dismissible percentage of orders (1-4%) were inaccurately attributed to certain physicians. Upon our investigation into the causes of order misattribution, it was determined that the misuse of order source attribution by nursing and ancillary presented an obstacle to the accurate measurement of CPOE compliance.

Methods
• Our analyses focuses on our adult inpatient provider group of hospitals with the highest CPOE utilization rates and order volume. We assessed for incorrect order source over a one month period for written orders exclusively; because, Providers are unable to reject written orders misattributed to them.

• All of the sample month’s orders were processed through McKesson Performance Analytics and a regional MEDTECH 5.66 Data Warehouse tool. Each order was assessed and its source attribution was validated, or corrected if misattributed. By using these tools and investigating each order individually, it was possible to determine the responsible party (or source) for each misattribution (Figure 1).

Analysis
Initial analysis identified 525 possible written orders that were inaccurately attributed to the sample providers group in the month long period of May 2014. Further analysis then determined:
• 29 orders were legitimate written orders
• Reasons for the misattribution (Figure 2)
• Responsible parties for the remaining orders

![Figure 2. Total Number of Misattributions and Reasons for Misattributions](image)

Our analyses show that 49% of misattributions were caused by incorrect order source selection. Each occurrence of an incorrect order source was investigated individually, and the correct order source that should have been selected was identified (Figure 3).

![Figure 3. Number of Correct Order Sources That Should Have Been Selected by Nursing and Ancillary Members.](image)

Clinical Impact
After identifying and examining each misattribution, the sample group of providers’ CPOE utilization rates were recalculated. By removing the inaccurate written orders, the group’s CPOE monthly percentage rate increased by 4.1% (Figure 4). While this amount of use rate correction for misattribution may appear modest, for providers performing at the 80%+ level, it was viewed as a significant improvement in rate reporting accuracy.

<table>
<thead>
<tr>
<th>Misattributions Included</th>
<th>Number of Written Orders</th>
<th>Number of Electronic Orders</th>
<th>Total Number of Orders</th>
<th>CPOE Percentage for Month</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>525</td>
<td>10988</td>
<td>11861</td>
<td>92.6%</td>
</tr>
<tr>
<td>Misattributions Removed</td>
<td>29</td>
<td>10988</td>
<td>11365</td>
<td>96.7%</td>
</tr>
</tbody>
</table>

![Figure 4. Provider sample group’s adjusted CPOE percentage](image)

Recommendations
Several solutions were identified to help mitigate the effects of order source misattributions and prevent a biased or false dilution of actual physician CPOE use rates. These included:

❖ Establishment of neutral order source for system-generated orders as well as conditional orders that result in new order.
❖ Recurrent periodic education of nursing and ancillary staff about misattribution and the importance of preventing it.
❖ Recurrent periodic education of Pharmacy and Laboratory staff about misattribution, where and when it is occurring, and its future prevention.
❖ Correct use of Electronic Health Record (EHR) data filters in the business intelligence software that generate Provider CPOE use rates.
❖ Review of additional work flow and processes within each department to identify source and the magnitude of order misattribution, and its prevention.

Conclusion
We have demonstrated that significant CPOE order misattribution is occurring in a fairly typical urban general hospital setting, and that the magnitude of misattribution can be substantial and important, particularly when physician performance metrics and payment incentives are focused on CPOE use rates. In order to confirm the validity of CPOE use rate metrics, and to ensure physician buy in to CPOE use rate reporting, order source misattribution must be periodically evaluated and corrected on an ongoing basis. Correction of use rate misattribution is critical to ensuring reported use rate credibility among Physicians as they adopt CPOE. Failure to do so can undermine successful CPOE adoption. Multiple sources of misattribution can occur, including but not limited to those reviewed in this poster. This evaluative process, along with the correction of providers’ CPOE use rates and preventive education of different departmental staff to eliminate misattribution, must be an ongoing effort supported by facility administrative and clinical leadership, with Health Informatics assistance, in all hospitals adopting CPOE.

References