Using Computerized Provider Order Entry Application to Improve Compliance with Co-signature of Verbal Orders

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Abstract

Verbal orders that are not cosigned in a timely manner represent potential quality, safety, and medical-legal concerns. Computerized Provider Order Entry Systems (CPOEs) provide unique opportunities to understand, describe, and improve compliance with guidelines that require the timely co-signature of verbal orders.

We describe our baseline compliance and improvements that were achieved through a series of CPOE interventions and related provider feedback and education.

Background

Many hospitals struggle to obtain timely co-signatures for verbal orders written on behalf of ordering providers. Verbal orders that are not cosigned in a timely manner leave patients, providers, and hospitals vulnerable to adverse outcomes.

The CPOE system at our 900-bed academic tertiary care hospital allows nurses and pharmacists to enter verbal orders on behalf of ordering providers. These verbal orders are immediately active in our system and are carried out in the same manner as standard orders.

At the start of our project, our hospital policy mandated that all verbal orders needed to be cosigned within 24 hours of entry into our CPOE system.

Methods

We evaluated compliance with verbal order co-signatures during the 6 months (1/05-6/05) prior to our intervention period. We identified the number and percentage of orders that were cosigned within 24 hours and the number and percentage of verbal orders that were cosigned by month end. Based on these results we developed, implemented, and evaluated a series of interventions aimed at improving our performance. Our first set of major interventions (7/05) included deploying: (1) a “user-based” cosign queue in addition to our existing “patient-based” cosign queue, (2) electronically alerting providers that the system had verbal orders that were overdue for their co-signature, and (3) removing free-text options within the verbal order module. Our second set of additional major interventions (6/06) included: (1) making the cosign button within our system’s “front page” screen colored red for any patient who had verbal orders in need of co-signature, (2) changing alert timing to occur prior to co-signature becoming overdue, (3) requiring a reason for any deferral of co-signature, and (4) creating the ability for nurses to change incorrect provider names. Each month, we received a “snap-shot” report of the verbal orders written that month. From this report, we evaluated the number and percentage of orders that were cosigned within 24 hours and the number and percentage of orders that were ultimately cosigned by month end.

In addition, we tracked and described the types of orders that providers declined to cosign and their reasons for their decline. We shared these findings with various physician and nursing groups with the hope that feedback and education would decrease the frequency of declines.

Results

We evaluated 74,494 verbal orders, which made up 0.78% of the 9,528,780 CPOE orders at our institution during our 2-year study period. At baseline only 49% of verbal orders were cosigned within the required 24-hour period and only 61% of verbal orders were cosigned by month end. Through our study period our 24-hour compliance rate improved from 49% to 63% to 93% (p<0.001) and our rate of ultimately getting verbal orders cosigned by month end increased from 61% to 94% to 98% (p<0.001). There were 470 declines during our intervention period. The types of orders most frequently declined were orders for medications (32%) and Chest X-rays (27%). The three most common reasons for providers declining to cosign orders were “I am not physician who gave order” (56%), “Order incorrect” (17%), and “Order already carried out” (14%). There was a significant decrease in the rate of verbal orders that were declined during the study period (p=0.009).

Conclusions

We found compliance with guidelines that require timely co-signature of verbal orders is poor, leaving patients, providers, and hospitals at risk for adverse outcomes. Through a series of CPOE interventions we significantly improved compliance with this important quality and safety measure. In addition we described our experience with providers declining to cosign orders and identified areas where compliance could be improved with additional computerized and educational efforts.