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The Impact of Implementing a New Computerized Physician Order Entry (CPOE) System on Pharmaceutical Interventions in a Tertiary Brazilian Hospital

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Abstract

We analyzed trends in pharmaceutical interventions during the implementation of a new computerized physician order entry (CPOE) process in a tertiary hospital in Brazil. The new process utilized an eletronic interface that was designed in-house and an automatic order extension program. The new process reduced the number of order transcriptions and mitigated other potential CPOE-related errors [1].

Keywords:

Computerized Provider Order Entry, Medication error, Intervention.

Introduction

The beginning of our eletronic health system (EHS) implementation process was characterized by interface-related difficulties [2], Due to this, our organization maintained a setting for paper-based order entry with transcriptions and a 24/7 pharmaceutical evaluation for non-staff physicians. When we developed a more intuitive local solution associated with an automatic copy of the order entry ("copy robot") it was possible for physicians to place orders electronically. The aim of this poster is to show the trend of pharmaceutical interventions during this proccess.

Methods

We chose three reasons for order adjustment as study variables: "system problems," "adequacy of pharmaceutical form," and "duplication." These reasons for adjustment were indicated during routine pharmaceutical evaluation of orders. The data were evaluated for two periods–six months before and after June 2014–when the "copy robot" and CPOE systems were activated. The data were plotted in Microsoft Excel and statistically analyzed using an ANOVA single factor test. P values less than 0.05 were considered statistically significant.

Results

The number of prescriptions that needed an intervention decreased during the time periods studied ($p < 0.001$). There was no statistically significant difference in the number of pharmaceutical interventions for "system problems," an increased number for "adequacy of pharmaceutical form" ($p < 0.001$), and a decreased number for "duplication" ($p < 0.001$). Figure 1 shows these results. Light grey columns correspond to "adequacy of pharmaceutical form," dark grey to "duplications," and black to "system problems."

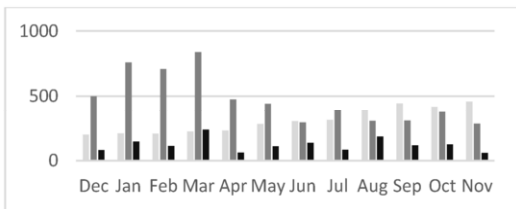

Figure 1 - Pharmaceutical Interventions Over Time

Discussion

Our strategy reduced the number of order transcriptions and minimized some errors like order "duplications." An increase in adjustments for "adequacy of pharmaceutical form" is considered a less dangerous pattern for our population.

Conclusion

The implementation models for electronic health systems should be adapted for each setting and place. Planning and continuous evaluation are key factors for success.

References

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