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Provider Actions in Response to Drug Alerts Generated in the Composite Health Care System

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Abstract

Computerized provider order entry combined with clinical decision support systems can alert prescribers to significant drug interactions, but growing evidence indicates that most providers often override these drug alerts. We conducted a survey of military prescribing providers in order to better understand their perceptions and actions in response to the drug alerts generated in the Composite Health Care System (CHCS). The majority of providers found certain types of alerts such as drug-drug interaction (63%) and drug-allergy alerts (60%) to be more useful than drug underutilization, drug over utilization, and drug duplication. More than three-quarters (77%) of providers indicated that they frequently overrode drug alerts during the medication ordering process. The results of our study suggest problems with the specificity and sensitivity of the alerts generated in the CHCS.

Keywords:

drug interactions, drug-allergy interactions, drug alerts, clinical decision support, medication errors, computerized provider order entry, CPOE

Introduction

CHCS is the computerized provider order entry (CPOE) system used by the Department of Defense (DoD) in over 500 medical treatment facilities (MTFs) worldwide. CHCS is integrated with clinical decision support systems and performs order checks for drug-allergy, drug-drug interaction, drug duplication, drug dosage, drug underutilization and drug over-utilization.

Methods

The questionnaire was given to prescribing providers at two busy military health clinics and to participants of a monthly workgroup meeting. Providers were required to indicate their agreement or disagreement to each statement or question on a five-point Likert-type scale.

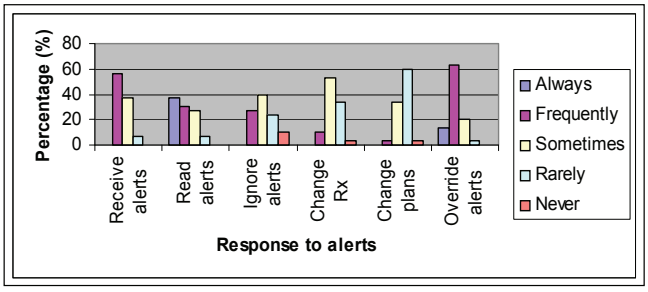
Results

Of the 32 questionnaires distributed to providers, 30 (94%) were completed and analyzed for this study. Demographically, survey participants were evenly divided between male (50%) and female (50%), and almost half had used the CHCS for over ten years (45%).

Providers found drug-allergy (60%) and drug-drug interaction (63%) alerts to be the most useful types of alerts while drug underutilization (57%), drug over-utilization (45%), and drug duplication (38%) alerts were found to be rarely or never useful.

More than half of the providers (57%) indicated that they frequently received drug alerts. A significant number of respondents (77%) admitted to always or frequently overriding drug alerts, 67% admitted to always or frequently reading drug alerts, and 27% admitted to frequently ignoring drug alerts (see Figure 1). Overall, 37% of physicians rarely or never changed their initial prescription decision based on the drug alert they received, and 63% rarely or never changed a patient's clinical or monitoring plans because of a drug alert. This could indicate that providers do not consider drug alert messages or warnings they receive in making prescribing decisions.

Figure 1 - Provider response to drug alerts



Conclusion

The high frequency of alert overrides expressed by providers may reflect problems with the sensitivity and specificity of the alerts generated by the system. Eliminating specific alerts or alert types that providers do not find useful can improve system integrity and increase provider acceptance of the CPOE. The findings of this study are consistent with results from studies conducted in civilian and private health care institutions.