Evaluation of Clinical Decision Support Alerts for Medications Contraindicated in Cancer Patients

Elise G. Brune¹, Dean F. Sittig PhD², Allison B. McCoy PhD²

¹Texas A&M University School of Veterinary Medicine and Biomedical Sciences and
²The School of Biomedical Informatics | The University of Texas Health Science Center at Houston

Objective
The study was conducted to describe alerts for contraindicated medications of cancer patients and understand the reasoning for alert overrides in order to improve clinical support systems.

Introduction
• In addition to intensive therapies, cancer patients are frequently prescribed medications to treat comorbid illnesses.
• Caution must be taken to prevent harmful drug interactions that may affect patient health.
• Computerized provider order entry-based alert systems are a way to identify medication contraindications.
• Patient safety is compromised when medication contraindication alerts are ignored and overridden.

Methods
• We assessed e-prescription clinical decision support alerts from Allscripts Enterprise EHR at UT Physicians practice in Houston, TX.
• We then compiled and analyzed using Microsoft Excel to identify characteristics of alert overrides.

Acknowledgements
This project was supported in part by the CPRIT Undergraduate Summer Cancer Research Program, a UTHealth Young Clinical and Translational Sciences Investigator Award (KL2 TR 000370-06A1), and NCRR Grant 3UL1RR024148.

Please contact the senior author via email: amccoy1@tulane.edu

Results
• 117 cancer patients experienced a total of 214 contraindicated medication alerts.
• 93% of alerts were overridden.
• On average, each patient experienced 1.7 overridden alerts.
• 83.2% of alerts were overridden and given no explanation by the health care provider.
• Nurses and physicians overrode all presented alerts.
• Health care providers in Obstetrics/Gynecology and Endocrinology overrode the majority of alerts.
• Otolaryngology specialists experienced non-overrides the most.
• Most alert overrides were experienced in September and the least in June.
• Overridden and non-overridden alerts similarly peaked the greatest at 1.00 pm, followed by 9:00 am.

Summary of Conclusions
• Most medication contraindication alerts are overridden.
• The abundance of alert overrides may be credited to insufficient training or poor understanding of alert system by health professionals.
• Appropriate alert presentation, as well as tiered alerting systems may aid efforts in decreasing overrides.
• Improvements in clinical decision support systems are imperative to patient safety.