Clinical Decision Support to Avoid Adverse Drug Events with Anticoagulants
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Abstract
Unintentional duplication or timing of anticoagulant orders leaves patients at high risk for serious adverse events. Alerts at the point of electronic order entry have the potential to mitigate this risk; however poor specificity with a high frequency of interruptions may decrease the ability of a clinician to recognize specific hazards. This poster will depict custom clinical decision support designed to prevent specific misadventures with this high risk class of medications.

Introduction
High-alert medications are drugs that have a heightened risk of causing significant patient harm when used in error. Expanded indications of low molecular weight heparin have introduced the risk of unintentional duplication with intravenous heparin resulting in three patient deaths as reported to the Institute for Safe Medication Practices.¹ A duplication alert at the point of order entry appears to be well suited to prevent these types of errors. However, “false alerts” due to heparin flushes and appropriate duplication of other medication classes may lead clinicians to dismiss appropriate alerts as well. The literature reports physicians override alerts up to 90% of the time.² Additionally, anticoagulants may be indicated for an acute or chronic condition, but are contraindicated for a period of time after an invasive procedure. This temporary drug/disease contraindication must be communicated, in a timely and efficient manner, to all clinicians involved in the medication use process.

Methods
At Northwestern Memorial Hospital, a 756 bed urban tertiary care academic medical center, we designed decision support logic to warn the clinician of unintentional anticoagulant duplication. We also created “do not use” orders for temporary contraindications. Leveraging this design, highly focused alerts now warn the clinician at the point of placing an order for a contraindicated anticoagulant.

Results and Conclusion
This poster presentation will describe the results of a chart review of the 323 triggered alerts (210 patients) in May 2006 and the accompanying clinician response and patient outcome. Unlike other published reports, this suite of alerts prompted appropriate physician action 89% of the time reducing the risk for harm in 71% of the cases.

References