



Drug Interaction Alerts: The Battle Against Alert Fatigue

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Palomar Pomerado Health

- Palomar Medical Center
 - 319 beds
 - Level 2 Trauma Center
 - Cardiac Center
- Pomerado Hospital
 - 107 beds
- C.P.O.E. still at least one year away

The Story Begins

- CMS surveyor declared “immediate jeopardy” and wanted to see:
 - A **system** that notifies the pharmacist of black box and contraindicated drug combinations
 - The pharmacist to **at least** inform the doctor of the issue before entering med, but **preferably not enter the med**
 - **Documentation** on every alert as to why the pharmacist proceeded through it

Problems

- Way too many alerts firing
- No clear guidance from pharmacy leadership on when or how to deal with the alerts
- Together, this led to:
 - Pharmacists ignoring most alerts
 - Spotty, inconsistent interventions
 - Poor documentation

Step 1

Get to know your database

- Which vendor do you use?
- How does vendor categorize interactions?
- How many interactions are in each category?
- What tools are available for
 - Monitoring alert responses?
 - Modifying the database?
 - Controlling when alerts display?
- Do the alerts inform the pharmacist of BBW's or contraindications?

Step 2

Identify WHEN to Intervene

- Determine which alerts should fire
 - Contraindicated drug combinations (3900)
 - BBW related interactions
 - e.g. steroids and quinolones
 - MedWatch related interactions
 - DIAM* level 1 or 2 (291)
 - Others at clinical pharmacist discretion

*Hansten and Horn's Drug Interactions Analysis and Management,
Wolters Kluwer Health, St. Louis, MO

Step 3 Suppress Alerts that Shouldn't Fire

- Perform MUE on the alerts that are firing
- Suppress interactions that don't meet inclusion criteria
 - 254 interactions produced 30% of our alerts
- Suppress interaction that DO meet inclusion criteria if they are not in line with current evidence
 - NOTE: this requires P&T approval of an evidence-based proposal



Step 4 Maintain Database

- Consider a periodic report to P&T on details of how database is updated
- Repeat MUE on the remaining alerts that are firing periodically



Step 5 Identify HOW to Intervene

- Discuss with Medical Staff
- Customize the text of the alerts!!!
- Note in chart
 - Interactions that won't result in immediate harm
- Immediate call to prescriber
 - Contraindications
 - BBWs
 - Warfarin with metronidazole or SMX/TMP
 - Interactions that could result in immediate harm
 - Interactions that could result in delayed, but significant harm if note missed



Step 6 Train Pharmacists on Drug Interactions

- Differences between Databases
 - Order entry databases
 - First DataBank, Medi-Span, Multum, V.A.
 - vs. Drug information databases
 - Micromedex, DIAM, Drug Interactions Facts, Lexicomp
 - 2001 comparison of drug info databases*
 - Only 406 major interactions
 - Only 9 (2.2%) of these were in all 4 databases
 - Most (71.7%) were listed in only one database

*J Am Pharm Assoc (2003). 2004 Mar-Apr;44(2):136-41.



Step 7 Document Responses to Alerts

- Customize canned alert responses based on MUE results
- Audit responses regularly and provide feedback to staff
- Ideally, monitor the effectiveness (i.e. acceptance rate) of the interventions



Step 8 Repeat steps 1-7

- Repeat the process for
 - Duplicate alerts
 - Allergy alerts
 - Drug-Food alerts



Data

○ % Appropriate alert response

	Baseline	Now
Interactions	38 %	100 %
Duplicates	97 %	99 – 100 %
Allergies	71 - 90 %	98 - 100 %

○ Number of alerts that fire

	Baseline	Now
# Alerts per 100 orders	24	7



Summary

- You can do it! Use MUE's to:
 - Eliminate unwanted alerts
 - Customize text of alerts
 - Monitor pharmacist documentation
- You should do it!
 - Staff satisfier
 - Regulatory / Legal liability
 - Improve patient safety



Supplemental Reading

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