

Hospital Pharmacist Perceptions and Decision Making Around Drug-Drug Interactions



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Background

- Drug-drug interactions (DDI) are preventable occurrences which can lead to adverse drug events (ADE) and result in serious patient harm.
- 11% of patients experience ADE due to DDI, with 2-3% being responsible for hospital admissions¹.
- Hospital clinical decision software (CDS) systems assist pharmacists in identifying DDI of clinical importance.
- Alert fatigue is common and override rates can be as high as 71.9%².
- Research to date suggests CDS systems don't always succeed in identifying clinically relevant DDI.

Objectives

- To evaluate how pharmacists perceive common drug interaction alerts.
- To determine how computer alerts affect pharmacists' decision-making when dispensing a medication.

Methods

Design: Qualitative study involving 3 structured focus groups consisting of 6-10 pharmacists from 3 tertiary Lower Mainland hospitals (SMH, SPH and VGH).

Recruitment: Pharmacists with dispensary or patient-care responsibilities were recruited. Invitation to participate in focus groups was sent via e-mail. Sessions occurred over lunch hour and participants were provided with food.

Statistical Analysis: Transcriptions were coded into ideas and subsequently organized into common themes using Nvivo.

Demographics (N=24)

Criterion	Hospital Site		
	SMH	SPH	VGH
Number of Participants	9	8	7
Years at Hospital Site	≤5	7	4
	>5	2	4
Primary Work Area	Dispensary Only	0	1
	Clinical Only	3	2
	Clinical + Dispensary	6	5

Results: Common Themes Discovered

PERCEIVED CHALLENGES:

COMMON THEMES
The information provided by CDS systems can be overwhelming (7)
More severe or unusual interactions will prompt pharmacists to look to other resources to determine if the interaction is clinically relevant (5)
A discrepancy in severity exists among the different CDS systems (4)
The CDS systems are outdated (2)



"It feels like 95% of the interactions are maybe completely useless . . . I wouldn't do anything about them."

Centricity (SPH)	"It's pretty relaxed. It's, stuff like more like not just severe but like medium."
MediTech (SMH)	"I don't necessarily rely on MediTech to tell me what's one two three priority because there's quite a discrepancy on what they think it is severe."
PCIS (VGH)	"Basically the number in PCIS is irrelevant, I would say."

Examples of "Useless" Interactions	
QT prolongation (3)	Bleeding risk (2)
Insulin and Beta Blockers (2)	PRN opioid sedation (2)
Same drug multiple routes (2)	Dimenhydrinate interactions (1)

PHARMACIST ASSESSMENT OF DDI:

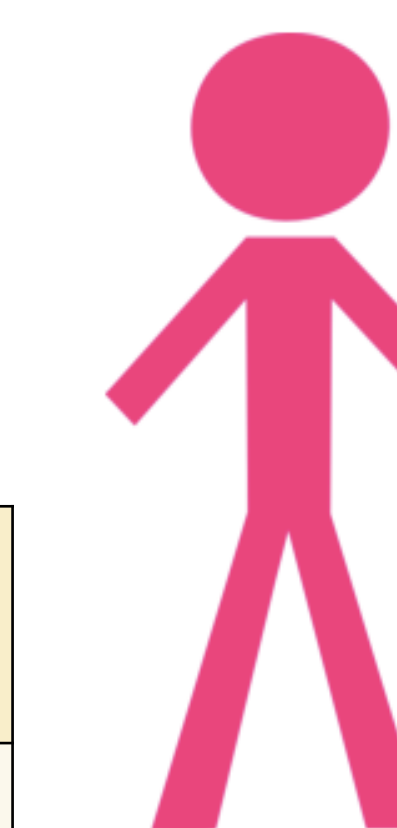
COMMON THEMES
DDI with immediate severe ramifications are considered clinically significant (9)
Recent pharmacy graduates are more likely to flag a DDI due to lack of experience (2)



"The first step I would think is what is the extreme things that could happen if I don't act on this. Are we either going to compromise therapy? Or reduce efficacy of something? Are we going to cause patient harm?"

BARRIERS TO RESPONDING TO ALERTS:

COMMON THEMES
Alert fatigue is a common factor in missing potential DDI (16)
Pharmacists lack the clinical context to assess a DDI in the dispensary (5)
Heavy workload and multi-tasking can contribute to pharmacists not identifying clinically important DDI (4)
Pharmacists working clinical shifts feel they are limited by time to assess DDI (2)



"We're dealing with phone calls at the same time, questions are being asked by other pharmacists, by technicians, we may be dealing with shortages, we are not 100% as focused as we can be on the order at any given time of the day . . ."

PROPOSED SOLUTIONS:

Pharmacist Ideas on How to Overcome Alert Fatigue
Annual review of DDI in CDS systems by team of pharmacists (8)
Allow color-coding to differentiate severity levels (6)
Limiting duplication (2)

Limitations

- Subjective analysis
- Potential for selection bias
- Only 1 dispensary pharmacist was able to participate

Discussion/Conclusion

- While alert fatigue is a common contributor to the under-detection of DDI, **other barriers also exist** which impede optimal workflow.
- Periodic review** of DDI, imbedded into hospital systems, by a collaborative team of pharmacists may help ensure only clinically relevant alerts are detected **in an effort to reduce alert fatigue.**
- Future research** will explore whether the DDI pharmacists prioritize and those the CDS system flags are in agreement and of clinical importance.

Acknowledgements

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References

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- Miller, Luke, Karen Steinmetz Pater, and Shelby Corman. "The Role Of Clinical Decision Support In Pharmacist Response To Drug-Interaction Alerts". *Research in Social and Administrative Pharmacy* 2015;11(3):480-486.