**Hospital Pharmacist Perceptions and Decision Making Around Drug-Drug Interactions**

**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 admissions.¹
- 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**
1. To evaluate how pharmacists perceive common drug interaction alerts.
2. 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)**

<table>
<thead>
<tr>
<th>Demographic</th>
<th>SMH</th>
<th>SPH</th>
<th>VGH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Participants</td>
<td>9</td>
<td>8</td>
<td>7</td>
</tr>
<tr>
<td>Years at Hospital Site</td>
<td>≤5</td>
<td>7</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>&gt;5</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Primary Work Area</td>
<td>Dispensary Only</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Clinical Only</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Clinical + Dispensary</td>
<td>6</td>
<td>5</td>
</tr>
</tbody>
</table>

**Results: Common Themes Discovered**

**PERCEIVED CHALLENGES:**

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- The CDS systems are outdated.

**Examples of “Useless” Interactions**

<table>
<thead>
<tr>
<th>CDS System</th>
<th>Interaction</th>
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</thead>
<tbody>
<tr>
<td>PCIS (VGH)</td>
<td>Basically the number in PCIS is irrelevant, I would say.</td>
</tr>
<tr>
<td>Centricity (SPH)</td>
<td>It’s pretty relaxed. It’s, stuff like more like not just severe but like medium.</td>
</tr>
<tr>
<td>MediTech (SMH)</td>
<td>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.</td>
</tr>
</tbody>
</table>

**BARRIERS TO RESPONDING TO ALERTS:**

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

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**Pharmacist Assessment of DDI**

**COMMON THEMES**
- DDI with immediate severe ramifications are considered clinically significant.
- Recent pharmacy graduates are more likely to flag a DDI due to lack of experience.

**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**
Special thanks to Ilena Djuana and Kevin Hong for their help in transcribing focus group audio recordings.

**References**