Medication Alert Optimization
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BACKGROUND
- A Clinical decision-making system facilitates medical decisions by generating clinical alerts.
- However, frequent alerts are a nuisance and can lead to provider alert fatigue and burnout.
- Alert fatigue cause users to ignore relevant and irrelevant alerts posing a threat to patient safety.
- Clinical decision-making system requires modification to optimize medication alert.

OBJECTIVES
- The aim is to develop a process that optimizes medication alerts and evaluate alerts’ effect to minimize fatigue and increase patients’ safety.

METHODS
- Retrospective study conducted at HSHS St. Elizabeth’s Hospital to compare two months pre-data versus two months post-implementation of a medication alert optimization.
- The primary outcome is a percentage reduction in alerts.
- Secondary outcomes represent the number of interventions and dismissal rate of pharmacists.
- A systematic review was done on PubMed literature.
- "Drugs that cause hyponatremia was used as a keyword in literature evaluation.
- Other filters like clinical trial and full text were used to reduce search results to 98 publications and later screened for relevancy.
- Pharmacists in the hospital were interviewed on their practice and when they would act on the alerts.

RESULTS

<table>
<thead>
<tr>
<th>Hyponatremia and</th>
<th>Old Alerts (Sep-Oct)</th>
<th>New Alerts (Nov-Dec)</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hypomagnesemia Alerts</td>
<td>289</td>
<td>93</td>
<td>68%</td>
</tr>
<tr>
<td>Total volume of alerts fired</td>
<td>276</td>
<td>86</td>
<td>69%</td>
</tr>
<tr>
<td>Dismissed Alerts</td>
<td>13</td>
<td>7</td>
<td>46%</td>
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</tbody>
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• Reducing the number of alerts minimized alert fatigue.
• System modification optimized alerts and reduced the total volume of alerts by 68 percent.
• Therefore, systems should be optimized to increase patient safety and decrease fatigue among medical workers.
• Limitations:
  - Pharmacist's failure to record all interventions made on Epic Ivent
  - The number of patients differs each month hence affecting the number of alerts fired when comparing pre and post-alerts.
• Hospital management should ensure alerts fire appropriately according to the five clinical decision support rights: right person, right time, right format, right information and through the proper channels.

CONCLUSION
- Medication alert systems should ensure crucial alerts are fired to reduce the adverse outcome of the patient and medical providers.
- System optimization ensures the system only fires patients’ relevant alerts.
- For a successful optimization, responsible personnel should strike a balance between patient safety and user convenience.

REFERENCES