Near Miss analysis in a large hospital: a 5-year retrospective study

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Hospital Moinhos de Vento

Located in Southern Brazil, Hospital Moinhos de Vento is one of the six hospitals of excellence of the country and delivers clinical and hospital care with an emphasis in complex pathologies.

- **Capacity**: 497 beds, 28k hospitalizations
- **Intensive care unit**: 85 beds
- **Maternity**: 50 beds, 4k deliveries
- **Surgery center**: 17 operation rooms, 23k surgeries

Data from 2017
High Reliability Organizations

A High Reliability Organization (HRO) is an organization that has successfully avoided catastrophe in an environment where accidents can be expected due to risk factors and complexity.

- SITUATIONAL AWARENESS
- COMMITMENT TO RESILIENCE
- PREOCCUPATION WITH FAILURE
- RELUCTANCE TO SIMPLIFY INTERPRETATIONS
- DEFERENCE TO EXPERTISE

And when this environment is a hospital?
 Unsafe conditions
Circumstances that increase the probability of a patient safety event occurring.

Near Misses
Patient safety events that did not reach the patient.

Incidents
Patient and safety events that reached the patient whether or not there was harm involved. E.g. Adverse events, serious adverse events, sentinel events.

https://psnet.ahrq.gov/primers/primer/13/Reporting-Patient-Safety-Events
Near Miss Incidents Report

- Medication Process
- Vascular Access
- Communication
- Dressing
- Hygiene and Comfort
- Isolation
- Nursing Controls
- Drains/Tubes
Objective and Methods

**OBJECTIVE**

To analyze all near miss incidents in a private, non-profit, Hospital in the South of Brazil.

**METHODS**

- Descriptive, retrospective study
- Data collection was performed on August 25, 2017
- Inclusion criteria: near miss events related to medication process and patient care recorded between January 1, 2013 and August 24, 2017.
Results – number of reports

Near misses
Serious adverse events and sentinel events

Year
2013
2014
2015
2016
2017

Near misses
1104
1927
3522
3835
4360*

Serious adverse events and sentinel events
24
21
16
13
11

* Jan-Aug 2017
## Results – number of reports by category

<table>
<thead>
<tr>
<th>Near Miss</th>
<th>2013 (n=1,104)</th>
<th>2014 (n=1,927)</th>
<th>2015 (n=3,522)</th>
<th>2016 (n=3,835)</th>
<th>2017 (n=2,551)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Venous/vascular access</td>
<td>–</td>
<td>6 0.3</td>
<td>177 5.0</td>
<td>291 7.6</td>
<td>188 7.4</td>
</tr>
<tr>
<td>Sterile materials</td>
<td>–</td>
<td>4 0.2</td>
<td>48 1.4</td>
<td>96 2.5</td>
<td>44 1.7</td>
</tr>
<tr>
<td>Communication</td>
<td>1 0.1</td>
<td>23 1.2</td>
<td>72 2.0</td>
<td>91 2.4</td>
<td>64 2.5</td>
</tr>
<tr>
<td>Fall prevention/restraint measures</td>
<td>–</td>
<td>6 0.3</td>
<td>32 0.9</td>
<td>34 0.9</td>
<td>17 0.7</td>
</tr>
<tr>
<td>Dressing</td>
<td>–</td>
<td>3 0.2</td>
<td>58 1.6</td>
<td>70 1.8</td>
<td>42 1.6</td>
</tr>
<tr>
<td>Drains/Tubes</td>
<td>–</td>
<td>8 0.4</td>
<td>76 2.2</td>
<td>93 2.4</td>
<td>58 2.3</td>
</tr>
<tr>
<td>Gas therapy</td>
<td>–</td>
<td>10 0.5</td>
<td>119 3.4</td>
<td>60 1.6</td>
<td>35 1.4</td>
</tr>
<tr>
<td>Glycose</td>
<td>–</td>
<td>0 0.0</td>
<td>2 0.1</td>
<td>14 0.4</td>
<td>9 0.4</td>
</tr>
<tr>
<td>Hygiene/Comfort</td>
<td>–</td>
<td>11 0.6</td>
<td>54 1.5</td>
<td>59 1.5</td>
<td>49 1.9</td>
</tr>
<tr>
<td>Patient identification</td>
<td>–</td>
<td>19 1.0</td>
<td>171 4.9</td>
<td>176 4.6</td>
<td>114 4.5</td>
</tr>
<tr>
<td>Isolation precautions</td>
<td>–</td>
<td>6 0.3</td>
<td>33 0.9</td>
<td>53 1.4</td>
<td>24 0.9</td>
</tr>
<tr>
<td>Maintenance/Hotel services</td>
<td>–</td>
<td>7 0.4</td>
<td>29 0.8</td>
<td>18 0.5</td>
<td>16 0.6</td>
</tr>
<tr>
<td>Miscellaneous materials</td>
<td>–</td>
<td>15 0.8</td>
<td>81 2.3</td>
<td>230 6.0</td>
<td>124 4.9</td>
</tr>
<tr>
<td>Other</td>
<td>162 8.4</td>
<td>714 20.3</td>
<td>888 23.2</td>
<td>654 25.6</td>
<td></td>
</tr>
<tr>
<td>Control</td>
<td>1 0.1</td>
<td>54 2.8</td>
<td>189 5.4</td>
<td>242 6.3</td>
<td>289 11.3</td>
</tr>
<tr>
<td>Control: spreadsheets/recording info</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>in patient chart/fluid balance</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vital signs/Thermotherapy</td>
<td>3 0.2</td>
<td>21 0.6</td>
<td>26 0.7</td>
<td>19 0.7</td>
<td></td>
</tr>
<tr>
<td>Medication process</td>
<td>1,102 99.8</td>
<td>1,590 82.5</td>
<td>1,646 46.7</td>
<td>1,394 36.3</td>
<td>805 31.6</td>
</tr>
</tbody>
</table>

Shaded cells indicates statistical association between year and number of near miss incidents reported during the year. Fisher’s chi square test; p<0.001.)
Results

Number of Reports by Professionals

Number of Near Misses in the Medication Process
Conclusion

We analyzed 12,939 near miss events related to the medication process and patient care recorded between January 1, 2013 and August 24, 2017.

Considering the number of admissions of the period (125,430 patients) the prevalence of reported near miss events was 10.3%.

Medication-related near miss incidents were the most frequent. Near misses associated with the recording of patient information (mainly related to fluid balance) and venous/vascular puncture were also frequent in the analyzed events.

Safety culture is well-established and connected to the organizational culture in the institution. There is good adherence of professionals to the reporting system.

When a near miss occur, the teams that reported the event are always involved in the design and implementation of strategies to improve safety.
THANK YOU

Mohamed Parrini, CEO