Outcomes of Patient Engaged Video Surveillance on Falls, Other Adverse Events, and Workforce

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Objectives

• Apply the rapid success of this technology after learning about the results of implementation;
• Assimilate the importance of these associations across clinical settings of care and populations; and,
• Understand sustainability and spread of this patient safety program across a wide variety of patient safety needs and result in patient and staff safety.

What We Know

• Healthcare Organizations are frustrating slow to integrate technology at the point of care
• Harm in hospitals is still and epidemic in healthcare
• Technology innovation is exciting
• Patient Engagement Improves Patient Health Outcomes
Expanding the safety net: integration of innovative technology

Monitor Observer  Technology  Responder Unit Staff

The evidence-based solution is made up of:

- Technology
- Clinical Program
- Data Analytics

Technology

- Ceiling Unit
- Wall Unit
- Server and Monitoring Station
STAT Alarm feature

- AvaSys monitor tech will activate a STAT Alarm in the event of an emergent need.
- This STAT Alarm is a validated alarm and is only activated when urgently needed.
- This alarm will play over the speaker on the wireless cart in the room and will be loud enough for the staff outside of the room to hear.

CLINICAL PROGRAM

- Support from AvaSure’s team of RNs
- Policies, procedures and protocols
- Comprehensive work flow creation
- eLearning modules
- Onsite clinical education and training
- Non disruptive implementation

The Video Monitor Technician

- A new and crucial member of the care team
- Importance of their training
- Importance of a good hand-off report from the RN
- The tools they have to keep patients safe
  - Verbal redirection
  - Call caregiver
  - Stat Alert Alarm

Jack was the winner of the hospital’s Patient Care Technician/Unit Clerk Excellence Award for going above and beyond
ONLINE REPORTING OF NURSING ANALYTICS

- Motivates staff towards results
- Informs clinical decision-making
- Optimizes operational management of video monitoring program
- Begins to provide insight into what causes falls and other adverse events

Engaging and Protecting Patients

- Monitor Technicians
- RN Enrollment
- Individualized Care Management
- Knowing Patients
- Knowing Families
- Monitor Technician and Unit Staff Interaction
OUTCOMES

• Protecting Those at Most Risk
  – Reduced Falls
  – Reduced Falls with Injury
• Elopement from Room
• Timeliness of Rescue
• Timeliness of Rescue by Age Group
• Reducing Patient Aggression/Violence

NEW RESEARCH

In press


NEW RESEARCH:

Who was protected and how?

<table>
<thead>
<tr>
<th>Table 2: Patient Engagement Interventions</th>
<th>19-64</th>
<th>65-84</th>
<th>85+</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of patients</td>
<td>5,173</td>
<td>6,393</td>
<td>3,466</td>
<td>15,031</td>
</tr>
<tr>
<td>Number of verbal interventions</td>
<td>205,207</td>
<td>270,689</td>
<td>121,300</td>
<td>597,196</td>
</tr>
<tr>
<td>Number of PEVS alarms</td>
<td>21,081</td>
<td>26,115</td>
<td>13,300</td>
<td>54,596</td>
</tr>
<tr>
<td>Verbal interventions per patient day</td>
<td>10.9</td>
<td>9.6</td>
<td>9.0</td>
<td>9.8</td>
</tr>
<tr>
<td>PEVS alarms per patient day</td>
<td>1.4</td>
<td>1.6</td>
<td>1.8</td>
<td>1.6</td>
</tr>
<tr>
<td>Average PEVS alarms per patient (cumulative)</td>
<td>7.7</td>
<td>14.8</td>
<td>14.7</td>
<td>15.8</td>
</tr>
</tbody>
</table>

NEW RESEARCH
Falls and other adverse events

Table 4: Adverse Event Rates per 1,000 Days of Surveillance

<table>
<thead>
<tr>
<th>Age</th>
<th>10-64</th>
<th>65-69</th>
<th>70+</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Falls per 1,000 Days of Surveillance</td>
<td>2.07</td>
<td>1.04</td>
<td>1.00</td>
<td>1.00</td>
</tr>
<tr>
<td>Assisted Falls per 1,000 Days of Surveillance</td>
<td>0.03</td>
<td>0.01</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Unsolicited Falls per 1,000 Days of Surveillance</td>
<td>1.74</td>
<td>0.91</td>
<td>0.24</td>
<td>1.12</td>
</tr>
<tr>
<td>Line, Tube or Drain Dislodgements per 1,000 Days of Surveillance</td>
<td>2.03</td>
<td>0.42</td>
<td>0.00</td>
<td>2.30</td>
</tr>
</tbody>
</table>


NEW RESEARCH
Other Outcomes

- 27 patients eloped from their patient room
- 106 incidents occurred where patients dislodged a line, tube or drain
- The oldest age group experienced the lowest rate of line, tube or drain dislodgements per 1,000 days of surveillance (2.30)
- The 65-84 year-old group was the lowest on elopements per 1,000 patient days (0.42)

NEW RESEARCH
Monitor Tech Impact

- The patients who fell had 20.5 verbal interventions per patient day, while 15.7 verbal interventions per patient day occurred on those did not fall ($p = .0005$)
- The falling group also had a higher number of alarms than the non-falling group; 2.38 and 1.55 respectively ($p = .01$)
- Staff response time for those who experienced unassisted falls was slower at 19.2 seconds as compared to the aggregate response time to PEVS alarms of 15.8 seconds ($p = .07$)
NEW RESEARCH
Sitters back to the bedside: cost savings
• Four hundred and fifty-three annualized FTE's would be required to provide 942,482 hours of surveillance by the traditional one-to-one sitter method
• With PEVS provided at a monitoring staff to patient ratio of 1:12, the total number of required FTE's is reduced by 92% to 38 FTE's
• Cost savings are contingent on the hourly wages of the one to one sitters and monitoring staff

NEW RESEARCH
Discussion points
• The oldest and most vulnerable experienced the lowest rate of falls 0.38/1000 patient days
• Nurses responded to the oldest patients 3 seconds faster than they responded the younger patients
• Patients who fell had 5 more verbal interventions per day and 0.83 more alarms per day than the non-falling group (p=.0005 and p=.01 respectively)
• Staff response time for those who experienced an unassisted fall was 3.4 seconds slower than the overall average stat alarm response time (p=.07)

CALL TO ACTION...
CHANGING THE WORLD OFTEN STARTS BY DOCUMENTING THE ISSUE...

TJC Sentinel Event Alert, Issue 59...

NEW RESEARCH
In press

ADVERSE ABUSE EVENTS FROM 2018

- Sample size:
  - 178 hospitals
  - 76,748 patients
  - 204,588 monitored patient days

- Abuse Events Reported
  - 136 abuse events
    - 100 physical
    - 36 verbal
  - 0.66/1000 monitored patient days

Physical Versus Verbal Abuse

- ORNA Participating Hospitals - Physical Abuse Adverse Events January - December 2018
  - Physical Contact
  - Combative Event
  - Throwing Objects
  - Spit

- ORNA Participating Hospitals - Verbal Abuse Adverse Events January - December 2018
  - Name calling
  - Threat to hurt
Literature Review:
Highlights from 80 Customer Generated Results

- 6 peer-reviewed journal articles
- 30 quality improvement posters, podium or articles
Sustained Outcomes

- Shift in Nursing Beliefs: Nursing culture can shift and trust and use new technology to improve patient safety and outcomes
- Real-time Surveillance decreases noise, stimulation and alarms, and increases rest and sleep (no bed alarms)
- Real-time Surveillance provides better focus for nursing practices as the observers are more fully present
- More Falls are prevented within and beyond the bedroom, such as to the day room, the hallway
- PEVS increases safety for patients and caregivers – the true safety net exists (no false alarms)
IT'S PERSONAL...

Pat and her Mom
Getting ready to dance

Lisbeth and her Dad
Getting ready to go to church