After Action Reviews and Learning: The Use of Post-Fall Huddles in Inpatient Hospital Settings

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http://unmc.edu/patient-safety/capturefalls/
After Action Reviews in High Reliability Organizations

- Accurately identify, learn from, and prevent future errors (Ellis & Davidi, 2005; Ellis, Mendel, & Nir, 2006)
  - Encourage data feedback, verification, and information sharing (Eddy, Tannenbaum, & Mathieu, 2013)
  - Allow for mindful reflection, understanding, and challenge assumptions (Eddy et al., 2013; Weick & Sutcliffe, 2007)
  - Establish common goals and future actions to prevent error (Eddy et al., 2013; Weick & Sutcliffe, 2007)

- Implementation in healthcare settings
  - Avoiding blame vs. learning and taking action (Nicolini, Waring, & Mengis, 2011)
Inpatient Falls and “Post-Fall” Huddles

**Falls**
- Up to 12% of patients fall at least once while hospitalized (Mahoney, 1998) 1/3 of which result in injuries
- $17,000 average cost to repair a hip fracture (Titler et al., 2007)
- Centers for Medicare and Medicaid Services does not reimburse certain hospitals for hospital-acquired condition costs

**Post-fall huddle**
- Best practice in inpatient fall risk reduction (Boushon, Nielsen, Quigley, Rutherford, Taylor, & Shannon, 2008; Degelau et al., 2012)
- Interprofessional participation to leverage complementary skills; huddle team members vary
- Learning, taking action to reduce future occurrence and severity of falls
## Post-Fall Huddles and Learning from Errors

- *MacPhail and Edmondson’s (2011) learning domains*

<table>
<thead>
<tr>
<th>Interdependence of Staff</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>High</td>
</tr>
<tr>
<td><strong>Task Execution</strong></td>
<td><strong>Interpersonal Coordination</strong></td>
</tr>
<tr>
<td>Low</td>
<td>High</td>
</tr>
<tr>
<td>- Error in completing well understood, routine tasks or processes</td>
<td>- Error in coordinating action or sharing information necessary for routine work</td>
</tr>
<tr>
<td>- <em>Example:</em> Patient’s bed alarm not turned on</td>
<td>- <em>Example:</em> Patient transfer status not shared across shifts or departments</td>
</tr>
<tr>
<td>- <em>Action:</em> Re-educate staff member and monitor bed alarm use performance</td>
<td>- <em>Action:</em> Discuss need to share transfer status; establish transfer status communication tool or policy</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Work Process Uncertainty</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Low</strong></td>
<td><strong>High</strong></td>
</tr>
<tr>
<td><strong>Judgment</strong></td>
<td><strong>System Interaction</strong></td>
</tr>
<tr>
<td>Low</td>
<td>High</td>
</tr>
<tr>
<td>- Error in decision making when performing unfamiliar or less understood work</td>
<td>- Error across multiple complex groups or systems when completing unfamiliar or unspecified work</td>
</tr>
<tr>
<td>- <em>Example:</em> Leave cognitively impaired patient alone in restroom</td>
<td>- <em>Example:</em> Lack policy or procedure to clarify level of assist required for patient transfers and mobility upon admission</td>
</tr>
<tr>
<td>- <em>Action:</em> Staff reflection upon uncertainty and judgment; identification of steps to take in next similar situation</td>
<td></td>
</tr>
</tbody>
</table>
Research Question and Hypotheses

Does learning from falls through post-fall huddles encourage adoption of the huddle process, reduce re-occurrence of certain errors, and reduce severity of falls over time?

- **H1**: The use of self-guided post-fall huddles will increase over time
- The implementation of self-guided post-fall huddles will
  - **H2**: result in changes in the percent of task, judgment, and coordination errors contributing to a fall event over time
  - **H3**: result in improved accuracy in identifying task, judgment, and coordination errors over time
  - **H4**: be related to a reduction in the proportion of unassisted falls and a reduction in the proportion of injurious falls over time
Sample and Procedure

- 226 patient fall event reports from 17 Midwestern Critical Access Hospitals
  - Participated in two-year inpatient fall risk reduction program
  - Mean = 13.29 falls per hospital (range 3-31)
  - Collected from August 2012 through November 2013

- Hospital staff member completed fall event report and huddle form
- Report content verified by members of research team
Independent Measures

Huddle completion
- Participation from two or more team members
- Conducted for 59.7% of falls (n=135)

Project time period
- T1: Aug 2012 – Jan 2013
- T2: Feb 2013 – July 2013

Post Fall Huddle Documentation

A Post Fall Huddle is one suggested best practice for reducing falls. Post fall huddles provide a mechanism to learn from falls by immediately assessing the situation and reviewing the event with the people involved, including the patient and family members, as well as determining what can be done at the bedside to prevent another fall from occurring.

Directions: To be completed after ALL patient falls as soon as possible after patient care is provided but prior to leaving the shift.

1. Has this patient fallen previously during this admission?
   - [ ] Yes
   - [ ] No
   - [ ] Unknown

2. If Yes, what interventions were in place to minimize the risk of a fall?
   __________________________

3. How preventable was the fall? CHECK ONE
   - [ ] Almost certainly could have been prevented
   - [ ] Likely could have been prevented
   - [ ] Likely could not have been prevented
   - [ ] Almost certainly could not have been prevented
   - [ ] Unknown

4. How could the fall have been prevented?
   __________________________

5. Who was included in the huddle? CHECK ALL THAT APPLY
   - [ ] Patient
   - [ ] Primary Nurse
   - [ ] COTA
   - [ ] Physical Therapist
   - [ ] Family/Caregiver
   - [ ] CNA
   - [ ] Pharmacist
   - [ ] Physical Therapy Assistant
   - [ ] Charge Nurse
   - [ ] Occupational Therapist
   - [ ] Pharmacy Tech
   - [ ] Quality Improvement Coordinator
   - [ ] Other: __________________

6. What factors were discussed in the huddle?
   - [ ] Were there task errors? (e.g. planned interventions were not in place as intended)
     Please describe: __________________________
   - [ ] Were there judgment errors? (e.g. strategy used to assist with transfers/gait was inappropriate)
     Please describe: __________________________
   - [ ] Were there care coordination errors? (e.g. fall risk status not communicated to all parties)
     Please describe: __________________________
   - [ ] Need to consult with Physical Therapy about balance/transfers/mobility?
     Please describe: __________________________
   - [ ] Need to consult with Pharmacy about medications?
     Please describe: __________________________

7. Additional comments regarding the huddle.
   __________________________

8. What actions will be taken to prevent another fall from occurring?
   __________________________

Thank you for contributing to patient safety and quality of care.
Dependent Measures

- **Patient fall type**
  - Assisted ("near miss") vs. Unassisted
  - Injurious (minor to severe) vs. Non-injurious (no injury)

- **Error type contributing to patient fall**
  - Task, Judgment, Coordination

- **Accuracy of error type identification**
  - Compared huddle and research team error evaluations
    - Research team inter-rater agreement of 87.5%
Percent of 226 reported falls in which a post-fall huddle was conducted over three project time periods

<table>
<thead>
<tr>
<th>Interval</th>
<th>Post-Fall Huddle Not Conducted</th>
<th>Post-Fall Huddle Conducted</th>
</tr>
</thead>
<tbody>
<tr>
<td>T1: Aug 2012 - Jan 2013</td>
<td>63%</td>
<td>38%</td>
</tr>
<tr>
<td>(n = 88)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>T2: Feb 2013 - July 2013</td>
<td>34%</td>
<td>66%</td>
</tr>
<tr>
<td>(n = 85)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>T3: Aug 2013 - November 2013</td>
<td>13%</td>
<td>87%</td>
</tr>
<tr>
<td>(n = 53)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

\[ \chi^2 (2, N = 226) = 35.56, p < .001 \]

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Percent of task, judgment, and coordination errors contributing to a fall event over three project time periods

<table>
<thead>
<tr>
<th>Time Period</th>
<th>Task Error</th>
<th>Judgment Error</th>
<th>Coordination Error</th>
</tr>
</thead>
<tbody>
<tr>
<td>T1: Aug 2012 - Jan 2013 (n=33)</td>
<td>45%</td>
<td>24%</td>
<td>11%</td>
</tr>
<tr>
<td>T2: Feb 2013 - July 2013 (n=56)</td>
<td>55%</td>
<td>25%</td>
<td>17%</td>
</tr>
<tr>
<td>T3: Aug 2013 - Nov 2013 (n=46)</td>
<td>48%</td>
<td>17%</td>
<td>11%</td>
</tr>
</tbody>
</table>

χ² (2, N = 135) = 7.89, p = .02

χ² (2, N = 135) = 1.00, p = .61

χ² (2, N = 135) = 8.44, p = .02
Percent of accurate classification of task, judgment, and coordination errors

- Task Error Identification Accuracy (n=48): 65%
- Judgment Error Identification Accuracy (n=72): 43%
- Coordination Error Identification Accuracy (n=36): 36%
Percent of reported assisted and unassisted falls with a post-fall huddle over three project time periods

<table>
<thead>
<tr>
<th>Time Period</th>
<th>Assisted Fall</th>
<th>Unassisted Fall</th>
</tr>
</thead>
<tbody>
<tr>
<td>T1: Aug 2012 - Jan 2013 (n = 33)</td>
<td>12%</td>
<td>88%</td>
</tr>
<tr>
<td>T2: Feb 2013 - July 2013 (n = 56)</td>
<td>25%</td>
<td>75%</td>
</tr>
<tr>
<td>T3: Aug 2013 - November 2013 (n = 46)</td>
<td>41%</td>
<td>59%</td>
</tr>
</tbody>
</table>

\[ \chi^2 (2, N = 135) = 8.50, \ p = .01 \]
Percent of reported injurious and non-injurious falls with a post-fall huddle over three project time periods

Patient Injury Occurred  |  No Patient Injury

<table>
<thead>
<tr>
<th>Time Period</th>
<th>Patient Injury Occurred</th>
<th>No Patient Injury</th>
</tr>
</thead>
<tbody>
<tr>
<td>T1: Aug 2012 - Jan 2013 (n = 33)</td>
<td>45%</td>
<td>55%</td>
</tr>
<tr>
<td>T2: Feb 2013 - July 2013 (n = 55)</td>
<td>22%</td>
<td>78%</td>
</tr>
<tr>
<td>T3: Aug 2013 - November 2013 (N = 44)</td>
<td>27%</td>
<td>73%</td>
</tr>
</tbody>
</table>

\[ x^2 (2, N = 135) = 5.70, \ p = .06 \]
Summary of Findings and Implications

- Post-fall huddle adoption increased by nearly 50%
  - Perceived usefulness, even with less serious outcomes over time

- Benefit to learning and preventing errors may be dependent on error type
  - Task errors may be more easily identified and corrected
    - Audits to increase reliable use of interventions
  - Coordination errors facilitated by huddle discussion
  - Judgment errors require deeper reflection, understanding
Limitations and Future Directions

- Limited number of fall events

- Varied education on conducting post-fall huddles
  - Standardize training on quality huddles and error types
  - Link error types to event, consequences, and target actions

- Huddle guide must support greater reflection to learn from judgment errors
  - Identify novelty or uncertainty of situation; decision rationale
  - Disseminate lessons learned

- Sustainability of post-fall huddle to encourage learning and further reduction of falls and their severity