Case Study 1: Fall Reduction

Overview
Sunshine Nursing home had been tracking the number of falls per month for the last five months as part of a restraint reduction program. This was one of its Advancing Excellence goals for 2009. Results had shown a consistent increase in the fall rate. Staff seemed discouraged and believed some residents may need restraints. The administrator and the director of nursing were committed to their Advancing Excellence goal of reducing restraint use, while also decreasing falls and continuing to protect the residents from injury. After discussion with the Quality Assessment and Assurance (QA & A) committee, the director of nursing decided to create a team of staff from multiple departments to analyze the problem, and develop and implement an improvement plan. The FOCUS-PDCA Model, Figure 1, was used to assist the team in developing and implementing a plan for improvement.

Find
An opportunity exists to improve the fall reduction process, beginning with the initial assessment of resident fall risk and ending with the evaluation of the effectiveness of the actions taken to prevent falls for a given resident.

Organize
The QA&A committee convened a quality improvement performance (QIP) team composed of staff from multiple departments that include nursing, dietary, pharmacy, and rehabilitation services.

Clarify
While the team knew the overall goal was to decrease falls, members believed they did not have enough information to know what was needed to improve. Therefore, the team collected data and information on how the fall assessment process currently occurred. As part of this effort, the team conducted an analysis of falls over the last quarter. The team trended the number of falls and grouped them according to the wings where the falls occurred; the types of falls (i.e., from a chair or bed); occurrence times; repeat falls; and specific locations of falls (i.e., in the bathroom or in the hallway). The team identified that the total number of falls included a significant number of repeat falls. The total number of falls and repeat falls are graphed on the run chart in Figure 2.
In reviewing the current process, the team found that the investigative and assessment process used to identify the causes of a fall did not provide comprehensive information; therefore, it was difficult to identify realistic interventions to prevent subsequent falls.

**Understand**
Using a root cause analysis, the team kept asking themselves ‘Why’ events occurred until they reached the underlying cause for the falls. They determined first that there was incomplete information for good follow up after a fall. The team felt that this was because some of the information that they needed to correct the cause of the fall was often missing. They then determined that the information was missing due to the lack of a systematic, comprehensive process to determine the root causes of falls. This lack of a comprehensive process to obtain pertinent information adversely affected the facility’s ability to maintain an effective fall prevention program. The team agreed that this was the root or underlying cause of their repeat falls finding, and that addressing this gap was essential.

**Select**
The team reached out to its state’s Patient Safety Commission and with the commission’s assistance, and again decided to use a root cause analysis (RCA) quality improvement process, but this time to evaluate every fall.

**Plan**
The team’s plan was to test the implementation of a RCA for each fall. They decided to first pilot test on one wing to evaluate if the new process decreased the number of repeat falls.
The team identified three initial goals for this project:

1. Decrease overall fall rate to 10 per month by first quarter 2010, which represented an overall decrease of 50%;
2. Decrease repeat falls to five per month by last quarter of 2009, which represented an overall decrease of 50%; and
3. Maintain, if not decrease, the number of residents in physical restraints. The team included this third goal to ensure that physical restraint use did not increase as an unintended consequence, as falls were decreased.
4. The team developed an action plan that included involving a number of additional staff to help with the development of the new assessment and investigative tool for capturing critical information when a fall occurred. The team wanted to be sure that all staff members were educated on the use of these new tools. Once the tools were developed and staff was educated, the team decided to pilot test the new tools on the wing with the greatest number of repeat falls.

The team developed an action plan that included involving a number of additional staff to develop new assessment and investigative documentation tools. The team assisted with education of staff on the use of these new tools. Once the tools were developed and staff was educated, the team decided to test the new tools on the wing with the greatest number of repeat falls.

<table>
<thead>
<tr>
<th>TASKS</th>
<th>WHO WILL COMPLETE</th>
<th>BY WHEN</th>
<th>COMMENTS</th>
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<tbody>
<tr>
<td>Develop new tools to assess and investigate all falls using the Safety Commission’s RCA tools</td>
<td>QIP team with interdepartmental staff</td>
<td>June 2009</td>
<td>Team to meet weekly in May and June 2009</td>
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<td>In-service licensed and unlicensed staff on new tools and RCA process</td>
<td>QIP team</td>
<td>June 2009</td>
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<td>Implement new investigation and assessment tools on chosen wing for 2 month trial; Monitor for any problems that occur along the way; take action to address any significant problems before they escalate</td>
<td>QIP team with leaders</td>
<td>July 2009</td>
<td>Ensure daily review of documentation related to falls</td>
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<td>Collect falls and physical restraint use data on run charts</td>
<td>Leaders and QIP team</td>
<td>Ongoing</td>
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<td>Meet to discuss with floor staff &amp; other departments: How did it all go? Any changes needed?</td>
<td>QIP team</td>
<td>September 2009</td>
<td>Report results to QA &amp; A Committee</td>
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<td>Educate all staff and ensure program now included in resident &amp; employee orientation program</td>
<td>QIP team</td>
<td>October 2009</td>
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<td>TASKS</td>
<td>WHO WILL COMPLETE</td>
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<tr>
<td>Implement new investigation and assessment tools across entire facility</td>
<td>QIP team with leaders</td>
<td>October 2009</td>
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<td>Reevaluate effectiveness of new process and report to QA &amp; A committee</td>
<td>QIP team</td>
<td>December 2009</td>
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<td>Continue monitoring monthly in 2010 – Determine additional plans to set and achieve stretch goals (higher performance)</td>
<td>QA &amp; A committee with QIP team</td>
<td>Ongoing Monthly</td>
<td>Team to discuss how process worked and determine future changes to continue to improve goal</td>
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The team involved floor staff on the selected wing to implement the pilot by communicating the rationale and purpose of the program, as well as the new process. The process change was then tested over a two-month period.

**Do**

The team and other staff members implemented the program as planned, maintaining the deadlines. Each team member completed tasks as defined in the plan. The team collected and graphed data on the number of total falls, the number of repeat falls, and the number of residents in physical restraints.

The following is an example of an investigation, assessment, and root cause analysis the team and floor staff performed on a resident who had multiple falls. This fall example was identified by the facility as a sentinel event that required further investigation and root cause analysis even though the resident was discharged.
Example

A resident fell on the evening shift. This was the third fall this resident had since admission four months prior. The resident sustained a pelvic fracture and was transported to the hospital. At the time of the latest fall, the previously developed care plan interventions included:

1. Reminder to use call light in room and when on toilet for transfer assist,
2. Place non-slip rug by bedside,
3. Implement toileting program listed as every two-hour toileting, and
4. Use stand-by transfer assist of one staff member.

The resident was found on the bathroom floor sitting upright in front of the toilet. Staff members were summoned to her room when they heard her yelling.

Gathering first impressions

The resident was alert and well-oriented and stated, “I slipped on the water on the floor, while trying to get back to my bed.” There was a large amount of water on the floor, which was flowing from the bathroom sink. A staff member who was assigned to the care of this resident stated she had assisted the resident to the bathroom approximately 10 minutes earlier. The resident requested to be left alone and to turn the water on as this assisted her with voiding. The staff member stated she reminded the resident to use the call light and told the resident she would return in a few minutes to assist her back to bed. The charge nurse determined the care plan had been followed.

Environmental factors and underlying medical conditions

- The floor was wet.
- The sink was overflowing.
- The resident was alert and fairly well oriented; however, the MDS showed some short-term memory issues.
- The resident chose to do things by herself, without assistance.
- She was looking forward to discharge back to her independent living facility.
- At the time of the fall, the resident was wearing slippers.
- The call light was in good working order.
- The resident stated she did not call for help as “I know they are so busy on the evening shift.”

Medication issues

None identified.
**Filling in the gaps**

The team evaluated this resident’s past falls for trends and patterns and found that her falls had all occurred on the evening shift and were associated with toileting. While the resident often used the call light during day shift, the resident’s cognitive functions tended to decline towards evenings. The resident was progressing well with therapy and a discharge plan was in place.

**Root cause analysis (RCA)**

The team identified a number of causes that required further investigation using RCA and the 5-Whys (See Figure 3).

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**TIP:** Using sticky notes to identify items in a Root Cause Analysis allows the team to easily reorder or add ideas during the process as the team asks themselves why something happened or occurred.
Figure 3. RCA/Casual Tree/5-Whys Diagram
The team developed an action plan using Plan Do Check and Act that included staff education, updating assessment tools, and implementing a new communication system for maintenance repairs. Staff researched the web and found a SBAR tool (Situation-Background-Assessment-Recommendation) to enhance communication. Staff also identified additional residents with similar issues and developed a plan for those residents.

After the two-month pilot, the team reviewed fall and restraint data and discussed findings with staff. Progress toward the goal to reduce repeat falls was good. However, the overall fall rates remained above the facility’s goal on the pilot wing, as well as in other areas of the facility (see Figure 4 for pilot wing data). Review of their physical restraints data showed the number of residents in restraints did not increase and had actually declined during the pilot (Figure 5).

TIP: Better performance can be achieved at a faster pace if an improvement team rapidly recognizes and tries new interventions when the data that are being monitored to evaluate change does not show improvement.
At this point, the team decided to continue with full implementation throughout the facility and added an action plan item related to admission assessments and overall fall risks. A new fall evaluation tool was developed that included risk factors and interview questions. This was used to complete a care plan within four hours of admission. A report went to the QA & A committee, which approved full implementation.
The new process was implemented throughout the facility. The team continued to collect data. Good results were noted in the area of repeat falls. By first quarter of 2010, the number of falls improved, but the overall goal of 50% fewer falls was not achieved. The team continued to evaluate and refine processes, using a Rapid Cycle PDCA process. The facility tested small changes to their fall system of care with frequent monitoring and evaluations until their overall goal was obtained. Follow up monitoring allowed the facility to recognize that their changes had been sustained over time, moving them into higher performance.

Figure 6. Facility Total and Repeat Falls

![Facility X Falls Chart]

- **Total falls**
- **Repeat falls**

*Facility X Falls*

*January 2009 - March 2010*

- **Total falls goal**
- **Repeat falls goal**