INTRODUCTION
Post-surgical delirium is common among elderly patients undergoing surgery. It is known to increase the length of stay and is associated with other short- and long-term consequences. In response to a concern from orthopedic surgeons, nurses and hospital administration regarding the high incidence of delirium in post-operative patients admitted with a hip fracture, a multidisciplinary team was formed to evaluate this issue and to design a quality improvement project.

METHODS
Objective: To prevent and/or reduce the negative outcomes of acute confusion in the elderly, post-operative hip fracture patients.

Targeted outcomes:
- Length of stay
- Use of restraints
- Falls
- Use of personal attendants
- Incidence of acute confusion.

Design: Quality improvement project with a historical comparison group.

Setting: Community based, not-for-profit hospital in Suburban California serving a largely elderly population.

Population:
- ED admission for hip fracture requiring surgical repair
- Age ≥70
- BUN/Cr ratio ≥20 and/or
- Serum albumin ≤2.5

Enhanced Care Group: All patients meeting criteria admitted January through April 2012 (n=25)

Historical Comparison Group: All patients meeting criteria admitted January through April 2009 (n=34)

Interventions:
Identifying Patients at Risk for PSD
The project team worked with the information services department to program a “Care Alert” that was triggered when there was a patient in the ED meeting the specified criteria. This alert sent an email notification to the program geriatrician, all inpatient nursing directors, charge nurses on the nursing units and house supervisor/bed control staff member.

Nursing Interventions
Nurses followed an Acute Confusion Nursing Protocol which consisted of reviewing medication profiles for high-risk medications, assessing potential underlying causes of delirium, initiating nursing interventions when appropriate, and the evaluating response to interventions. General nursing care emphasized early ambulation, orientation to time and place (clocks, glasses, hearing aids), and sleep hygiene.

RESULTS
There was an overall reduction in the emergence of acute confusion among the patients in the enhanced care group when compared with the historical comparison group. There was a similar reduction in the use of restraints. While the use of personal assistants was low overall, they were not used in the enhanced care group. Only 1 fall was recorded. Length of stay was similar in both groups. The differences noted are not statistically significant, probably due to the small numbers. Groups were equivalent for the variables measured.

CHALLENGES AND LIMITATIONS
- There was no consistent place for nurses to record changes in cognition for the comparison group.
- CAM assessment was built into the electronic health record during the project.
- There were varying levels of cooperation among attending physicians.
- Other organizational priorities often competed for nurses’ attention.

NEXT STEPS
- Continue to educate RN’s on acute confusion protocols and CAM documentation
- Build CAM assessment into electronic medical record
- Consider other patient populations that may benefit from this care model

CONCLUSIONS
Developing a method to identify high-risk patients preoperatively and instituting an enhanced care protocol, in our evaluation, may improve outcomes in patients at risk for post-surgical delirium. While the results are not statistically significant, they are clinically meaningful and provide direction for future study.

At Risk + + Care alert
1. Stop the use of high dose sedatives
2. Use Ketamine if patient has hallucinations
3. Use high dose or continuous sedation
4. Use electroencephalography
5. Use hypophysectomy Meds: midazolam, haloperidol (see below list)
6. Subs use analgesics
7. Discontinue or “hide” tubes as appropriate and approved by MD
8. Family presence: pictures or objects from home
9. Remove or “hide” tubes as appropriate and approved by MD
10. Medications [sedatives, hypnotics (see beers list)]

ASSESS CAUSATIVE FACTORS
1. Fever
2. Infection
3. Hypoxia
4. Pain (under/medicated)
5. Visual or auditory hallucinations
6. Electrolyte imbalance/derangements
7. Hypoglycemia
8. Medications
9. Sedative medications
10. Alcohol Use

INITIATE NURSING INTERVENTIONS
1. Establish confusion if appropriate
2. Flox the patient’s station
3. Progressive Mobility Program
4. Promote normal sleep/wake cycle
5. Sticker activities e.g. light night, check patient interrupted sleep
6. Treat Pain or evaluate appropriate pain control methods
7. Interventions as directed by a geriatrician
8. Remove or “hide” tubes as appropriate and approved by MD
9. Ensure regular bowel and bladder patterns
10. Alcohol ordered to be given while the patient uses alcohol regularly, if not contraindicated

PHARMACOLOGIC CONSIDERATIONS
Alcohol ordered to be given with meals for those who use alcohol regularly

OUTCOME ENHANCED CARE GROUP HISTORICAL COMPARISON

<table>
<thead>
<tr>
<th>OUTCOME</th>
<th>ENHANCED CARE GROUP</th>
<th>HISTORICAL COMPARISON</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length of stay without acute confusion</td>
<td>4.6 days</td>
<td>4.9 days</td>
</tr>
<tr>
<td>Length of stay with acute confusion</td>
<td>6.5 days</td>
<td>6.6 days</td>
</tr>
<tr>
<td>Use of restraints</td>
<td>2 (8%)</td>
<td>5 (15%)</td>
</tr>
<tr>
<td>Acute confusion</td>
<td>4 (16%)</td>
<td>11 (32%)</td>
</tr>
<tr>
<td>Use of personal assistants</td>
<td>0 (0%)</td>
<td>3 (12%)</td>
</tr>
<tr>
<td>Length of stay with acute confusion</td>
<td>4.6 days</td>
<td>4.9 days</td>
</tr>
</tbody>
</table>

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