DOES UNIVERSAL DELIRIUM SCREENING IN ELDERLY INPATIENTS CHANGE OUTCOMES?

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• Delirium is a common complication of hospital inpatients
  – Occurrence rate per admission of up to 42% in patients admitted to general medicine/ elderly care units\(^1\)

• Delirium is associated with increased complications:
  – Increased length of stay\(^2\)
  – Increased mortality\(^3\)
  – Increased rates of new nursing home placement\(^4\)

• Little data regarding whether universal delirium screening impacts these outcomes
Does daily universal delirium screening in medical inpatients greater than 65 years of age affect outcomes (length of stay, inpatient mortality, falls incidence, discharge destination)?
METHODS

• Pilot ward:

  - Universal Delirium Screening:
    - Pre-screening cohort: 7/1/2015 - 10/1/2015
    - Post-screening cohort: 11/1/2015 - 1/30/2016

• Other Medicine wards:

  - Universal Delirium Screening:
    - Pre-screening cohort: 7/1/2016 - 10/1/2016
    - Post-screening cohort: 11/1/2016 - 1/30/2016
METHODS

**PRIMARY OUTCOME**

Inpatient length of stay (LOS)

**SECONDARY OUTCOMES**

- Inpatient mortality during index admission
- Inpatient morbidity (falls, delirium, health care associated pneumonia, ICU admission, adverse drug reaction)
- Transition to assisted living post-discharge
RESULTS

- 981 patients
  - 502 in pre-screening cohort
  - 479 in post-screening cohort

<table>
<thead>
<tr>
<th>CHARACTERISTIC</th>
<th>PRE-SCREENING</th>
<th>POST-SCREENING</th>
<th>P VALUE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male sex, no. (%)</td>
<td>245 (48.8)</td>
<td>249 (52.0)</td>
<td>0.32</td>
</tr>
<tr>
<td>Mean age, years (95% CI)</td>
<td>79.2 (78.5, 79.9)</td>
<td>79.5 (78.7, 80.2)</td>
<td>0.58</td>
</tr>
<tr>
<td>Charlson Comorbidity Index (CCI), mean (95% CI)</td>
<td>3.77 (3.55, 3.99)</td>
<td>3.84 (3.62, 4.06)</td>
<td>0.69</td>
</tr>
<tr>
<td>Age-adjusted CCI, mean (95% CI)</td>
<td>7.23 (7.00, 7.66)</td>
<td>7.31 (7.07, 7.55)</td>
<td>0.64</td>
</tr>
<tr>
<td>Independent Living Situation, no (%)</td>
<td>396 (78.9)</td>
<td>377 (78.7)</td>
<td>0.56</td>
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</tbody>
</table>
## RESULTS

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<tr>
<td>Median LOS, days (range)</td>
<td>5.0 (1 – 340)</td>
<td>5.0 (1 – 372)</td>
<td>0.55</td>
</tr>
<tr>
<td>Inpatient mortality, no. (%)</td>
<td>40 (8.0)</td>
<td>42 (8.8)</td>
<td>0.65</td>
</tr>
<tr>
<td>Falls, no. (%)</td>
<td>29 (5.8)</td>
<td>14 (2.9)</td>
<td>0.03</td>
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<tr>
<td>Hospital-Associated pneumonia, no. (%)</td>
<td>9 (1.8)</td>
<td>4 (0.8)</td>
<td>0.19</td>
</tr>
<tr>
<td>Adverse Drug Reaction, no. (%)</td>
<td>57 (11.4)</td>
<td>49 (10.2)</td>
<td>0.57</td>
</tr>
<tr>
<td>Delirium occurrence, no. (%)</td>
<td>92 (18.3)</td>
<td>76 (15.9)</td>
<td>0.31</td>
</tr>
<tr>
<td>ICU Admission, no. (%)</td>
<td>20 (4.0)</td>
<td>17 (3.6)</td>
<td>0.72</td>
</tr>
<tr>
<td>Requirement for increased living support, no (%)</td>
<td>48 (9.6)</td>
<td>33 (6.9)</td>
<td>0.13</td>
</tr>
</tbody>
</table>
RESULTS

• Sensitivity Analysis:
  – Performed random chart audit during delirium screening period
  – Mean compliance rate with daily CAM screening: 73% (Range 44-96%)

Delirium Screening Compliance Rate (2015)
RESULTS

• Univariate Analysis:
  – Patients who developed delirium were older
    • Mean age 82.21 vs. 78.74 years old (p < 0.001)
  – Patients requiring ICU admission had higher mean CCI
    • Mean CCI 4.86 vs. 3.76 (p=0.009)
  – Patients who were older were more likely to develop any adverse outcome (excluding mortality)
    • Mean age 79.97 vs. 78.82 (p = 0.033)
  – Patients who had higher CCI were more likely to develop any adverse outcome (excluding mortality)
    • Mean CCI 4.02 vs. 3.62 (p=0.013)
  – Patients requiring assisted living at baseline were more likely to develop any adverse outcome (excluding mortality)
    • 52.2% vs. 41.9% (p=0.002)
RESULTS

• Univariate Analysis:
  – Patients in the pre-screening cohort were more likely to develop any adverse outcome (excluding mortality)
    • 55.0% vs. 45.0% (p=0.03)
CONCLUSION

• Delirium screening was associated with decreased incidence of falls, and decreased incidence of any adverse secondary outcome (excluding mortality)

• Delirium screening did not affect the primary outcome, mean inpatient LOS

• Delirium screening did not affect any of the following secondary outcomes
  – Inpatient mortality
  – Hospital associated pneumonia
  – ICU admission
  – Adverse drug reaction
  – Delirium occurrence
  – Requirement for increased living support post-discharge
DISCUSSION

• No prior studies have examined delirium screening itself (without targeted intervention)

• Rates of delirium no different between pre-screening and post-screening cohorts (18.3% vs. 15.8%)
  – Occurrence rates lower than in similar study populations, although within range (11-42%)$^1$
  – Incidence rate of delirium on sensitivity analysis: 14% (range 4-21%)
REFERENCES


