**Service Evaluation:**
Factors associated with missed or delayed diagnosis of major trauma in older people at a UK level 1 trauma centre.

Author: Melinda (Dolly) McPherson – Trainee Advanced Clinical Practitioner
Supervising consultant: Dr Claire Rowberry

**Results:**
Cohort = 190 patients

- **40%** = Missed diagnosis in ED
- **52.6%** = Delayed diagnosis in ED

<table>
<thead>
<tr>
<th>Missed diagnosis</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Location of first contact</td>
<td>Unstandardized coefficients (β)</td>
<td>P-value</td>
<td>Odds ratio</td>
<td>95% Confidence interval</td>
</tr>
<tr>
<td>CT vs Plain films</td>
<td>-0.901</td>
<td>0.007</td>
<td>0.396</td>
<td>0.125 – 1.288</td>
</tr>
<tr>
<td>Trauma call Y/N</td>
<td>-0.989</td>
<td>0.003</td>
<td>0.375</td>
<td>0.193 – 0.732</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Delayed diagnosis</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Location of first contact</td>
<td>Unstandardized coefficients (β)</td>
<td>P-value</td>
<td>Odds ratio</td>
<td>95% Confidence interval</td>
</tr>
<tr>
<td>CT vs Plain films</td>
<td>2.067</td>
<td>0.037</td>
<td>10.296</td>
<td>2.254 – 48.47</td>
</tr>
<tr>
<td>Trauma call Y/N</td>
<td>-0.148</td>
<td>0.849</td>
<td>1.000</td>
<td>0.891 – 1.129</td>
</tr>
</tbody>
</table>

*‘X-rays only’ and ‘no trauma call’ associated with missed major trauma

- **61** trauma pre-alerts
- **49** level 2 trauma calls
- **0** level 1 trauma calls
- **23** patients eligible for level 1 trauma call on pre-alert.

**Discussion:**
ED process evaluations follow patient journeys from arrival through to discharge. The results of the evaluation suggest that future improvement projects should be focussed on the early stages of the patient journey to encapsulate trauma team activation and initial location of assessment. Guidelines do not currently offer complete solutions to the optimum management of older persons with major trauma. However, early suspicion of trauma, senior involvement, parity of imaging with ‘traditional’ major trauma, and processes that facilitate trauma ward admission for those with trauma may have a positive impact on the diagnosis and management of major trauma in the older person.

**Methods:**
TARN audit data and retrospective notes review of 190 patients >65 presenting to UHS ED from 1st January 2018 – 31st December 2018 who did not receive a level 1 trauma call on arrival were used to achieve the dataset. Descriptive statistics were used to outline processes seen and were compared with local and national guidelines. Multiple logistic regression was then applied to the dataset to look for associations between specific process factors and a missed or delayed diagnosis.

**Aims:**
- Evaluate Processes
- Identify improvements
- Inform future QIPs

**Actions and recommendations:**
- **Education**: Agreed triage tool Level 65 trauma team

---

**Referral wards if diagnosis missed in ED**
- Trauma: 37
- Medical: 39

**Referral wards if diagnosis delayed in ED**
- Trauma: 105
- Medical: 9