PREVALENCE OF PRESSURE INJURY IN ADULTS PRESENTING TO THE EMERGENCY DEPARTMENT BY AMBULANCE
Internationally, hospital-acquired pressure injuries (PI) are regarded as an adverse hospital event. They are considered to be largely preventable, affect patient quality of life, increase hospital length of stay (LOS) and healthcare costs. In many countries, PI incurs funding penalties or reimbursement-adjustments. Australia has National Quality and Safety Standard 8, and PI in the emergency department (ED) is largely uninvestigated.
Objectives

- Describe the issue of pressure injury (PI) in the emergency department (ED)
- Present data on prevalence of PI in the ED
- Discuss the implications of not identifying PI in the ED
- Discuss implications for paramedic and nursing practice
Data collection

- Sample: patients presenting to ED via ambulance (n = 212)
  - 2 sites, randomised selection
  - Majority triage category 2-4
- Full body skin inspection within one hour of triage
  - 2 experienced ED nurse research assistants
- PI risk assessment
  - Braden and Waterlow
## Results

### Stage and site of pressure injuries ($n = 14$)

<table>
<thead>
<tr>
<th>Site</th>
<th>Pressure injury stage</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Buttock</td>
<td>1</td>
</tr>
<tr>
<td>Coccyx</td>
<td></td>
</tr>
<tr>
<td>Ear</td>
<td>3</td>
</tr>
<tr>
<td>Malleolus</td>
<td></td>
</tr>
<tr>
<td>Penis</td>
<td>1</td>
</tr>
<tr>
<td>Sacrum</td>
<td></td>
</tr>
<tr>
<td>Trochanter</td>
<td>1</td>
</tr>
<tr>
<td>TOTAL</td>
<td>6</td>
</tr>
</tbody>
</table>
## Results

### Risk categories of subjects with identified PI ($n = 11$)

<table>
<thead>
<tr>
<th>Braden risk category</th>
<th>Waterlow risk category</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Not at risk</td>
</tr>
<tr>
<td>Low</td>
<td>0</td>
</tr>
<tr>
<td>Medium</td>
<td>1</td>
</tr>
<tr>
<td>High</td>
<td>0</td>
</tr>
<tr>
<td>Very high</td>
<td>0</td>
</tr>
<tr>
<td>Waterlow TOTAL</td>
<td>1</td>
</tr>
</tbody>
</table>

Waterlow: Of 11 subjects with PI, 9 were categorised as ‘high’ or ‘very high’ risk

Braden: Overall, fewer subjects categorised as being at ‘high’ or ‘very high’ risk of PI ($n = 9/212$), of whom 5 (56%) had a PI
Results: PI prevalence

- PI prevalence expressed as a percentage using the formula:
  - \( \frac{\text{numerator}}{\text{denominator}} \times 100\% \)
  - numerator = number of consenting patients with one or more PI (all stages)
  - denominator = total number of consenting patients inspected.

- ED PI prevalence at the point of triage = 5.2% (11/212)
- Most had only 1 PI (\(n = 10\)) but one subject had 4, giving a total of 14 PI identified
- 10 subjects with PI were admitted to hospital, giving a PI prevalence at the point of ward admission of 7.8% (10/128).
Results: Ambulance transfer

• Most subjects (90.1%, n = 191) were transferred to hospital on a Mercedes stretcher
  – ALL on non pressure-relieving surfaces

• Mean transfer time
  – Patients with PI was significantly longer (74.8 min, SD 26.3) than others (61.7 min, SD 20.3; \( p = .041 \)) but effect size small (eta squared = 0.02)

• Stretcher time
  – Patients with PI spent 9.3 minutes longer (mean 48.1 min, SD 25.3) on the stretcher than others (mean 38.8 min, SD 15.3); approaching statistical significance (\( p = .060 \))
Results: Within ED

- The majority of patients were cared for on a standard trolley (86.3%, \( n = 183 \))
- Only 1 patient (with an identified PI) was provided with a pressure-relieving mattress
- Of the remaining 10 subjects with PI, 9 were cared for on a standard trolley, and 1 was seated in a chair
- Mean ED LOS of subjects with PI was significantly longer (498 min) than others (292 mins) \( p = .003 \)
- Nearly all subjects with PI (\( n = 10 \)) exceeded the NEAT time (4 h)
Conclusions

• Since a PI can develop in as little as 2 hours – and ED LOS of patients subsequently admitted to hospital is rarely less than this – it is important to identify when a PI has occurred

• Non-identification of an existing PI
  – may lead to further deterioration whilst in the ED, especially if pressure-relieving strategies are not implemented
  – may subsequently be incorrectly identified as hospital-acquired

• Our results provide evidence that use of pressure-relieving devices in the ambulance and ED was rare, including for those most at risk of PI, and even those with an identified PI.