**Introduction:**
During critical illness, chronic therapies are often withheld and subsequently not restarted, and ICU-specific treatments can be inappropriately continued once discharged. Critically ill patients also experience many transitions of care, which may also cause issues with ongoing medicine management. Additionally, patients are often prescribed new medications, which they may not understand how to take effectively, or which may cause adverse events. We aimed to determine if we could predict Medication-Related Problems (MRPs), using demographic and in-ICU clinical data.

**Methods:**
183 patients enrolled in a post-intensive care programme between September 2016 and June 2018. Intensive Care Syndrome: Promoting Independence and Return to Employment (InS:PIRE), is a 5-week multicentre, multidisciplinary rehabilitation programme for ICU survivors. MRPs were identified by a specialist ICU pharmacist during this programme and classified by their significance on a scale of one to four. Logistic regression was used to determine if demographic factors were associated with the occurrence of a clinically significant MRP - a significance score of two or above.

**Results:**
The adjusted model included age, ICU LOS, hospital LOS, APACHE II, number of days of renal replacement therapy, number of days of ventilation, the number of medications prescribed at ICU discharge, and the WHO analgesia classification at InS:PIRE.
There were increased odds of having a clinically significant MRP for hospital LOS (OR 1·03 per day, 95% CI: 1·01-1·05, p=0·02), number of medications at ICU discharge (OR 1·15 per medication, 95% CI: 1·04-1·28, p=0·01), and WHO Step 2 analgesia at the InS:PIRE clinic (OR 5·20 vs WHO level 0, 95% CI: 2·07-13·20, p=0·001).

**Conclusion:**
Length of days in hospital, the number of medications at ICU discharge, and WHO step 2 analgesia prescription are all associated with increased odds of developing an MRP. Patients with long stays and complex polypharmacy should be reviewed in the post-ICU recovery period.

**Image:**

<table>
<thead>
<tr>
<th>Significance</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Domains</strong></td>
<td>Minor</td>
<td>Moderate</td>
<td>Major</td>
<td>Catastrophic</td>
</tr>
<tr>
<td><strong>Clinical Impact</strong></td>
<td>Low risk to patient</td>
<td>Increased therapeutic benefit/avoidance of significant adverse effects</td>
<td>Prevent serious therapeutic failure/avoidance of serious adverse effects</td>
<td>Life or organ threatening event</td>
</tr>
</tbody>
</table>

*Significance Scale of MRPs*