Early Warning Scores (EWS) have been developed to facilitate early detection of patient deterioration, prompting medical review (1). The National Confidential Enquiry into Patient Output and Death (NCEPOD, 2005) reported that 66% of inpatients admitted longer than 24 hours, displayed physiological instability for more than 12 hours prior to ICU transfer (2). Based on these findings the Health Information and Quality Authority (HIQA) in Ireland instructed the Health Service Executive to implement a National Early Warning Score (NEWS) (3).

**Aims**

To compare mortality, and other outcome indicators of patients admitted to ICU from medical wards before and after EWS implementation (2012 vs 2014)

**Methodology**

ICU patients admitted medically in 2012 and 2014 were included in this audit. We excluded patients from the Emergency Department; with ward LOS greater than 60 days; patients from CCU and one Oncology ward. The cohort of patients was selected from our ICU electronic database (ICIP). Information collected included age, gender, ward, Pre-ICU diagnosis, LOS prior to ICU transfer, ICU LOS and mortality.

**Results**

- The number of ICU admissions was stable between 2012 and 2014 (78 versus 80 respectively), although there was a 7.6% increase in hospital medical admissions (n=7223 in 2014 versus 6711 in 2012).
- ICU mortality rate was significantly reduced post EWS implementation: 24.36% (19/78) in 2014 versus 40% (32/80) in 2012. Overall, patients admitted to ICU were 49% less likely to die in 2014 than 2012 (95% CI: 0.23, 1).
- Post EWS implementation there was a relative reduction in Pre-ICU Ward LOS of 11% (9.31 days versus 10.46). See Table 1 for other results

**Table 1. Pre and post EWS implementation characteristics**

<table>
<thead>
<tr>
<th></th>
<th>2014</th>
<th>2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mortality Rate (%)</td>
<td>24.36</td>
<td>40</td>
</tr>
<tr>
<td>Mean Age (Years)</td>
<td>61.67</td>
<td>62.79</td>
</tr>
<tr>
<td>Mean ward LOS pre-ICU (days)</td>
<td>9.31</td>
<td>10.46</td>
</tr>
<tr>
<td>Mean ICU LOS (days)</td>
<td>7.57</td>
<td>8.01</td>
</tr>
<tr>
<td>Hospital Medical Admissions (n)</td>
<td>7223</td>
<td>6711</td>
</tr>
</tbody>
</table>

**Conclusions**

While this audit cannot prove a causal relationship between the implementation of the Early Warning Score at this acute hospital, and the decrease in ICU patient mortality, the magnitude of the reduction and its timing are very encouraging. The reduction in Pre-ICU LOS in 2014 suggests that escalation of care occurred earlier due to a uniform track and trigger method (EWS). Continued vigilance and adherence to triggers to escalate care, can lead to further improvements in quality of care and patient outcomes.

**References**

2. The National Confidential Enquiry into Patient Output and Death (NCEPOD, 2005)

**Correspondence to:**
Dr Rachel Kidney
Division of Acute/Internal Medicine
St. James’s Hospital
Dublin 8
Ireland
rkidney@stjames.ie