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Introduction:
Sepsis is a life-threatening organ dysfunction responsible for approximately 48,000 deaths per year in the UK[1]. The ‘Sepsis Six’ bundle consists of six practical components designed to enable rapid patient care. If initiated within the hour, it is associated with a 55% relative risk reduction in mortality and a reduced length of hospital stay and likelihood of critical care admission[1].

Methods:
A prospective observational study over four weeks in November 2019 to assess the adherence to ‘Sepsis Six’. Patients fulfilling the following inclusion criteria were added to a dedicated database:
1) Age ≥18
2) NEWS2[2]≥ 5 or NEWS2≥3 in a single category within 24 hours of admission
3) Evidence of clinical infection
The delivery of ‘Sepsis Six’ within one hour and subsequent patient outcomes were evaluated.

Results:
67 patients (Mean age: 72 years; Age range: 20 to 95; Male: 57%; Female: 43%) met our inclusion criteria. Delivery of Sepsis Six within one hour was as follows - Oxygen: 93%; Antibiotics: 59%; IV Fluids: 55%; Blood cultures: 64%; Lactate: 82%; Urine output: 22%. Overall hospital mortality was 15%. Patient outcomes are outlined in Table 1.

Delivery of antibiotics within an hour significantly reduced the variability in the length of hospital stay (p-value = 0.014). Initiation of IV fluids had no significant effect on the variability of the length of hospital stay.

Conclusion:
Nurse-led interventions (oxygen, blood cultures, lactate) had a higher delivery rate compared to those requiring prescriptions. We believe due to a small sample size significance of other outcomes was not elicited. We intend to re-audit with a larger study size after introducing interventions previously shown to improve outcomes. These include ‘Sepsis Six’ stickers, modifications to phlebotomy trolleys and training sessions to educate and empower staff working in acute settings[3][4].

References:
1. Sepsis Trust, 2020
2. Royal College of Physicians (2017)

Table:

<table>
<thead>
<tr>
<th></th>
<th>Antibiotics delivered within one hour: Yes</th>
<th>Antibiotics delivered within one hour: No</th>
<th>IV Fluids initiated within one hour: Yes</th>
<th>IV Fluids initiated within one hour: No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean Length of hospital stay in days (SD)</td>
<td>8.75 (4.96)</td>
<td>11.63 (11.11)</td>
<td>9.73 (6.70)</td>
<td>10.29 (9.71)</td>
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<tr>
<td>ITU (% of admissions)</td>
<td>2.99</td>
<td>2.99</td>
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<tr>
<td>Died (%)</td>
<td>7.46</td>
<td>7.46</td>
<td>8.96</td>
<td>5.97</td>
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</tbody>
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Table 1: Patient Outcomes