**Problem:**
Delay in starting antibiotics for sepsis patients with blood stream infection can be deadly.

Prompt, broad-spectrum treatment can lead to antibiotic resistance.

**Inclusion/Exclusion Criteria:**
- $0$ Patients $< 18$ yrs
- $18$% Patients
- $15760$ Patients Died or Got Discharged in First $5$ Hrs
- $15120$ Patients Had Time Between Encounter $> 30$ Days
- $16023$ Patients
- $240$ Patients Died or Got Discharged in First $5$ Hrs
- $463$ Patients Had Time Between Encounter $< 30$ Days
- $1347$ Patients with First Positive Blood Culture
- $12281$ Patients Did Not Start Treatment $6$ to $6$ Hrs Prior to Blood Culture Collection

**PROPOSED SOLUTION:**

Clinicians need a tool that will aid in clinical decision-making by assessing the risks and benefits associated with a broad or narrow antibiotic therapy.

**NEED:**

Clinicians need a tool that will aid in clinical decision-making by assessing the risks and benefits associated with a broad or narrow antibiotic therapy.

**MODEL OUTCOME INTERPRETATION:**

<table>
<thead>
<tr>
<th>Difference</th>
<th>Risk of Adverse Effects</th>
<th>Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>↑</td>
<td>Broaden antibiotic spectrum given that risk is less, and survival maybe improved</td>
<td></td>
</tr>
<tr>
<td>↑</td>
<td>Not to Broaden Antibiotic Spectrum, given that the change in survival is small</td>
<td></td>
</tr>
<tr>
<td>↓</td>
<td>Not to Broaden Antibiotic Spectrum because of risk of developing antibiotic resistance in future</td>
<td></td>
</tr>
<tr>
<td>↓</td>
<td>Depends on variety of other clinical factors like comorbidities</td>
<td></td>
</tr>
</tbody>
</table>

**RESULTS:**

- **Elixhauser_score**
- **Respiratory Rate**
- **Albumin**
- **Lactate**
- **Pulse**
- **Sbp**
- **Platelet**
- **Age**
- **Sodium**
- **Pulse_ox_sat**
- **WBC**
- **Hemoglobin**
- **Co2**
- **Bilirubin Total**

**Variable Importance**

**Calibration**

**Time-varying AUC**

**Data Description**

**Gender**

**Age**

**Comorbidity Category**

**Need More Info?**