Reducing Time to Antibiotics in Patients with Neutropenic Fever on a Bone Marrow Transplant Unit

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Reducing time to antibiotics in patients with neutropenic fever on a bone marrow transplant unit


Abstract #310

Through iterative changes and process improvement methodology, we were able to improve our median time to antibiotics after neutropenic fever from 128 minutes to 53 minutes.

Background/Methods:
• Timely administration of antibiotics in patients with neutropenic fever (NF) is essential for reducing morbidity and mortality among oncology patients.
• The optimal time to antibiotics (TTA) for patients with NF is unclear, but IDSA/ASCO guidelines recommend a median TTA within one hour of documented fever.
• This study focused on identifying barriers at a single academic institution to timely antibiotic administration for patients admitted to the inpatient Bone Marrow Transplant (BMT) unit, and implemented new processes to reduce median TTA to less than 60 minutes

Methods:
• Chart reviews were performed to identify causes for delays in antibiotics (abx).
• Based on a root cause analysis, 4 interventions were implemented: cefepime was stocked in the pyxis machine (Int 1 - August 2018), NF guidelines were updated (Int 2 – October 2019), educational videos were created for just in time learning for house staff rotating on the oncology services and an education campaign for the nursing staff (Int 3 – June 2020), a nurse driven protocol to release and administer abx was piloted on the BMT (Int 4 – December 2021)

Results/Graphs/Data:

<table>
<thead>
<tr>
<th>Interventions</th>
<th>Median Time to Antibiotics (Minutes)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baseline Data</td>
<td>Median 128.5 Minutes</td>
</tr>
<tr>
<td>PDSA 1 Stocked Cefepime in the Pyxis Machine</td>
<td>Median 89 Minutes</td>
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<tr>
<td>PDSA 2 Added Educational Material</td>
<td>Median 99 Minutes</td>
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<tr>
<td>PDSA 3 Implementation of Nurse Driven Protocol</td>
<td>Median 73 Minutes</td>
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<tr>
<td>PDSA 4 Updated Definition of Neutropenic Fever</td>
<td>Median 53 Minutes</td>
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</tbody>
</table>

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