Reducing Broad-spectrum Antibiotic Use by Appropriately Treating Community Acquired Pneumonia

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Background

• Del Sol Medical Center is one of the highest broad-spectrum antibiotics users in the Central West Division of Texas.
• Misuse of broad-spectrum antibiotics expose patients to severe side effects and contributes to the development of resistant microorganisms.
• Broad-spectrum antibiotics are reserved to treat Community-acquired pneumonia (CAP) only if certain indications are met.
• The aim of this quality improvement (QI) project is to reduce the broad-spectrum antibiotic use through appropriate diagnosing and treating CAP per Infectious Diseases Society of America (IDSA) practice guidelines.

Objective

Reduce broad-spectrum antibiotic use by appropriately diagnosing and treating CAP by IDSA guidelines.

Methods

Data collection of broad-spectrum antibiotic use for CAP before and after the QI project interventions.

Compare the collected data and assess for improvement / reduction of use rate of Zosyn and Cefepime use.

Zosyn and Cefepime can only be considered when CAP is severe and the patient has high risk factors, per IDSA guidelines.

Study period

January 2021 to December 2023

Use Rate

Zosyn
Ceferpine
Non-ICU floors

Interventions

Conference
HealthStream
Badge Buddy

Results

Del Sol Medical Center
CWT Division Hospitals BSHO (2022)

<table>
<thead>
<tr>
<th>Year</th>
<th>Zosyn Yearly Use</th>
<th>Cefepime Yearly Use</th>
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<tbody>
<tr>
<td>2021</td>
<td>76 (18.4%)</td>
<td>27 (6.5%)</td>
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<tr>
<td>2022</td>
<td>54 (11.9%)</td>
<td>29 (6.4%)</td>
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<tr>
<td>2023</td>
<td>60 (13.1%)</td>
<td>22 (4.8%)</td>
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Discussion

• Del Sol Medical Center has the highest use rate of broad-spectrum antibiotic use in our division.
• By appropriately diagnosing CAP per IDSA guidelines it is possible to identify those patients who are truly candidates for broad-spectrum antibiotics; which are a minority.
• Once CAP is appropriately managed based on the proper classification the use of broad-spectrum antibiotics should decrease.
• Development of other interventions might be necessary in order to identify the specific CAP cases which can be considered as candidates for broad-spectrum antibiotics.
• Future derivations of the project could also be implemented in other diagnosis like aspiration pneumonia, intra-abdominal infections and skin and soft tissue infections.

Conclusion

• By appropriately diagnosing CAP per IDSA guidelines broad-spectrum antibiotic use can be reduced in the appropriate setting. Reducing broad-spectrum antibiotic use will lead to less chance of bacterial resistance, less significant side effects and reduce costs to the health care system.

Citation