The Microbiology Laboratory is a Valuable, but Largely Underutilized Partner in Antimicrobial Stewardship and Antimicrobial Resistance Monitoring

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Abstract

Background

- Antimicrobial Stewardship (AS) is defined as coordinated interventions to improve and measure appropriate antimicrobial use by optimizing selections, dosing, route, and duration of antimicrobial therapy
- Improving antimicrobial use is a critical component of interventions to address antimicrobial resistance and Concomitant infections
- AS is a goal for OAQA and public health goals including CDC, CAPRA, and LA County 28%
- Current guidelines recommend that Clinical Microbiology laboratories take an active role in AS

Methods

- We analyzed data from the California Antimicrobial Resistance Laboratory Network Assessment (CARLA)
- Cross-sectional voluntary online survey of microbiology laboratories that serve acute care hospitals and long-term acute care hospitals (LTAC) in California
- Questions related to laboratory process, diagnostic testing, laboratory reporting, and antimicrobial stewardship
- Utilized other national surveys, target audience for CARLA was the Clinical Microbiology Director or Microbiology laboratory staff
- Survey was conducted with the use of Survey Monkey in the Fall 2018 to Spring 2019
- A total response threshold of 30% was used
- Non-respondents were contacted by phone
- Hospital type and income data were obtained from the Nielsen 2015 Annual Survey

Results

- Table 1: Survey Respondents
- Figure 1: Response Rate
- Figure 2: Method of Antimicrobial Susceptibility Testing
- Figure 3: De-Prep for Individual Antibiogram
- Figure 4: Frequency of AST for Blood

Table 1: Survey Respondents

<table>
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<tr>
<th>Hospital Type</th>
<th>N (100)</th>
<th>Percentage</th>
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<tr>
<td>Community</td>
<td>63</td>
<td>63%</td>
</tr>
<tr>
<td>Tertiary</td>
<td>20</td>
<td>20%</td>
</tr>
<tr>
<td>Acute Care</td>
<td>7</td>
<td>7%</td>
</tr>
<tr>
<td>Other</td>
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<td>4%</td>
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</tbody>
</table>

Figure 1: Response Rate

- 78% of hospitals responded to the survey

Figure 2: Method of Antimicrobial Susceptibility Testing

- 73% of hospitals use an automated method
- 67% of hospitals perform AST

Figure 3: De-Prep for Individual Antibiogram

- Our lab does not perform selective reporting since we have not been asked to do so

Figure 4: Frequency of AST for Blood

- 65% of hospitals perform AST for blood

Discussion and Considerations

- The microbiology laboratory has an important role in effective antimicrobial management
- AS programs should include microbiology laboratories as active partners in the development and implementation of local antimicrobial stewardship programs
- Microbiology laboratory laboratories are increasingly dependent on AST and LIS to generate the most appropriate antimicrobial therapy and to perform selective reporting to improve antimicrobial usage and reduce resistance

Acknowledgments

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The findings and conclusions in this presentation are those of the authors and do not necessarily reflect the official position of the California Department of Public Health or the Los Angeles County Department of Public Health.