2nd Place: Assessment of the Characteristics of Multidrug Resistant Organisms at Lehigh Valley Health Network: Where Do They Come From and Where Do They Go?

Courtney Landis

Follow this and additional works at: https://scholarlyworks.lvhn.org/research-scholars-posters

Published In/Presented At
Assessment of the Characteristics of Multidrug Resistant Organisms at Lehigh Valley Health Network: Where Do They Come From and Where Do They Go?

Courtney Landis, Amy Slenker MD, Jarrod Kile RPh. BCPS, Luther Rhodes MD

Lehigh Valley Health Network, Allentown, Pennsylvania

Introduction

• Multidrug resistant (MDR) infections are associated with high mortality and limited treatment options. The characteristics of MDR organisms that present to Lehigh Valley Health Network (LVHN) are unknown.

• Infection control guidelines encourage partnerships between inpatient and outpatient health care facilities to better control the spread of these high-risk infections.

Objectives

• Determine the characteristics and treatment of MDR organisms among patients admitted to LVHN.

• Identify common admission and discharge locations for patients admitted to LVHN diagnosed with a MDR organism.

Methods

• Retrospective chart review of 371 adult patient encounters (237 unique patients) at LVH-CC and LVH-M identified with a MDR organism in 2018.

• Obtain patient demographics, admission and discharge locations and dates, empiric and targeted antibiotic days of treatment, and results of positive MDR culture(s) from the patient chart in EPIC.

Results

Figure 1: Locations Prior to Admission for MDR Patients

- Top SNF/ALF Patients
  - ManorCare: 21
  - Fellowship Manor: 6
  - Valley Manor: 6
  - Phoebe-Allentown: 6
  - LVH-TSU: 6

- Home: 55%
- TSU, transitional inpatient unit

Figure 2: Discharge Locations for MDR Patients

- Top Rehab
  - LVH-IRC: 12
  - ManorCare: 3

- Top SNF/ALF Patients
  - Hospice/Expired Patients: 2%

- Top Other
  - Good Shepherd Specialty Hospital: 4%

Table 1: Days of Therapy (DOT) for MDR Organism Infections

<table>
<thead>
<tr>
<th>DOT Type</th>
<th>Median Number of Days (IQR)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Empiric DOT</td>
<td>1 (0-3)</td>
</tr>
<tr>
<td>Targeted DOT in Hospital</td>
<td>2 (0-5)</td>
</tr>
<tr>
<td>Total Planned Targeted DOT</td>
<td>4.5 (0-10)</td>
</tr>
<tr>
<td>Total Antibiotic DOT</td>
<td>7 (3-14)</td>
</tr>
<tr>
<td>Hospital Length of Stay</td>
<td>6 (4-11)</td>
</tr>
</tbody>
</table>

Figure 3: Characteristics of MDR Organisms at LVHN

- ESBL: 87%
- VRE: 9%
- CRE: 3%
- Acinetobacter: 1%

Conclusions

• The most common MDR organism and source at LVHN is ESBL E. coli in urine.

• While most patients are admitted and discharged to non-healthcare facilities (Figures 1 and 2), the vast majority of MDR organisms are still healthcare-associated (94%).

• Facilities external to LVHN with the greatest incidence of MDR organisms are ManorCare, Fellowship Manor, Valley Manor, and Phoebe (Figures 1 and 2).

• LVHN is treating these infections appropriately, with a median of only 1 empiric DOT and a median of 7 total DOT.

Future Directions

• Contact most common admission and discharge facilities to determine their infection control practices.

• Develop partnerships between LVHN and most frequent outpatient facilities.

• Establish a standardized approach to infection control practices among inpatient and outpatient health care facilities with greater incidences of MDR organisms.

References