

Background

- Antimicrobial resistance is a rising threat in developing nations.
- Establishing antimicrobial stewardship programs (ASP) in resource-limited settings may help curb the rise of antimicrobial resistance.
- Understanding local resistance patterns and antimicrobial usage may help define appropriate empiric treatment regimens and gaps for ASP development.
- There is a paucity of data on antimicrobial usage and local susceptibilities in the Dominican Republic (DR).
- As part of our antimicrobial stewardship initiative, we seek to define antimicrobial resistance and antimicrobial usage at Hospital General Plaza de la Salud (HGPS), a 200 bed teaching hospital in the DR.

Methods

- This is a retrospective review of local susceptibility patterns and antimicrobial use.
- Antimicrobial susceptibility data for Gram-negative organisms was collected from 2014-2017.
- Antimicrobial use was collected from all inpatient units from 1/1/2017 to 12/31/2017.
- Defined daily doses (DDD) of antimicrobials used per 1000 patient days (DDD/1000) was tabulated.

Results

- The most common Gram-negative organisms were *Klebsiella pneumoniae* (KP) and *Escherichia coli* (EC).
- Extended-spectrum beta-lactamase (ESBL) producing EC and KP were common (Figure 1).
- The average rates of ESBL EC and KP were 55% and 64%. The total average DDD/1000 was 83. The average DDD/1000 per drug is graphed in Figure 2.

Figure 1. Percentage of ESBL producing EC and KP

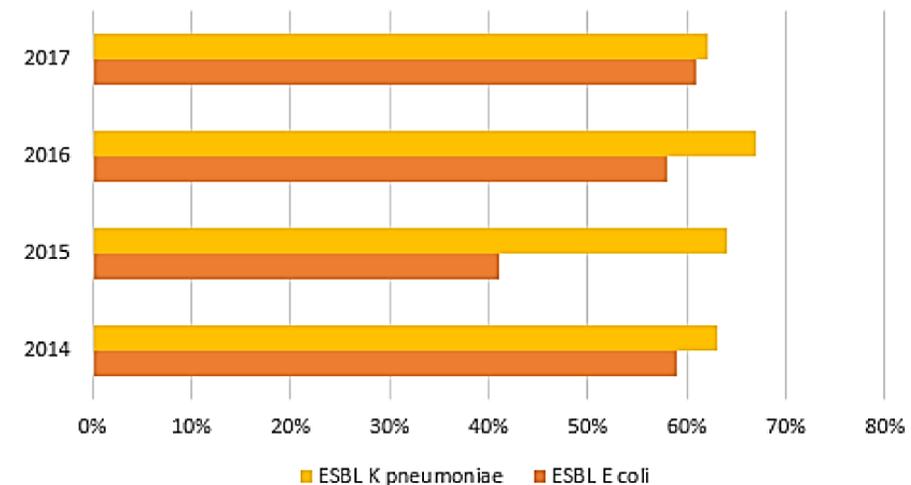
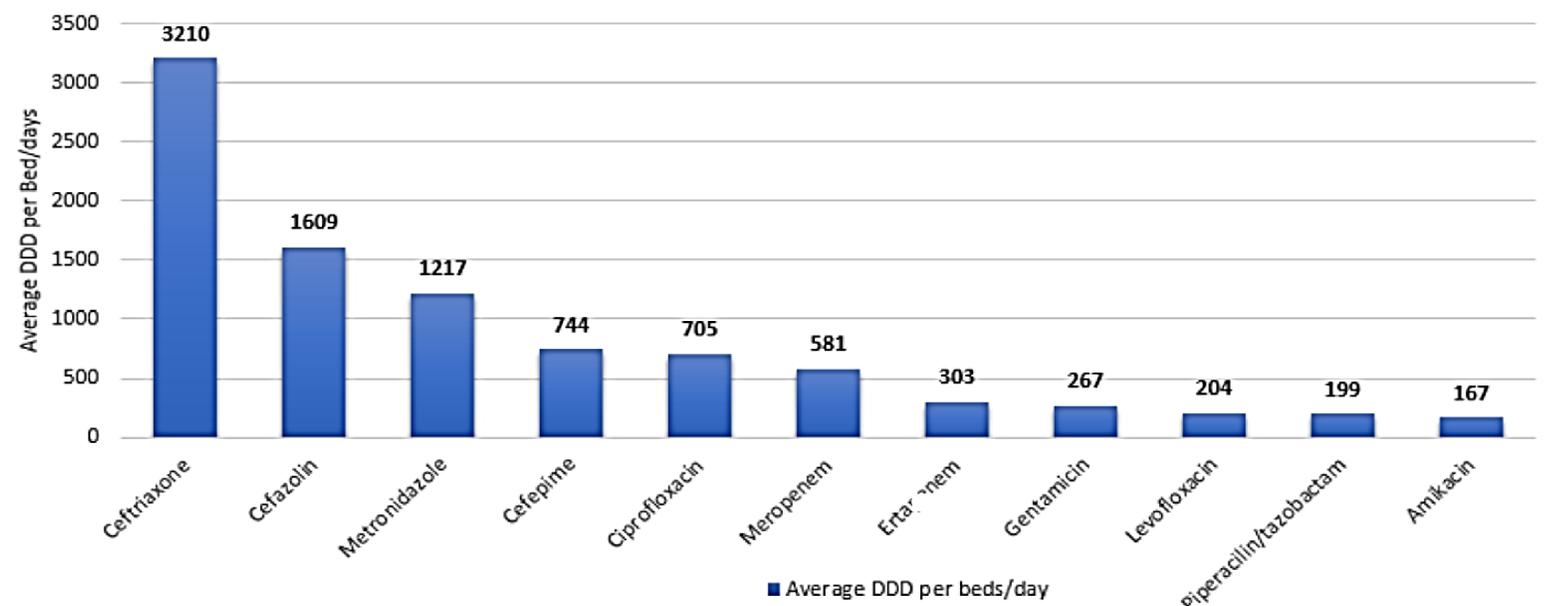


Figure 2. Average DDD per beds/day per antimicrobial



Percentage of *K pneumoniae* in with ESBL pattern in 2017

62%



61%

Percentage of *E coli* in with ESBL pattern in 2017

Conclusion

- Ceftriaxone and cefazolin were the most commonly prescribed antimicrobials.
- Rates of ESBL-producing EC and KP are high at HGPS, with average rates above 50%.
- This differs greatly from reported prevalence in the United States.
- Thus, local treatment guidelines need to be established and may differ from Infectious Diseases Society of America guidelines.
- Further studies are needed to identify the clinical characteristics and risk factors of patients with ESBL in the DR. This will help local ASP programs identify and advise carbapenem use for patients at risk.
- Our experience at HGPS suggests that assessing local antimicrobial susceptibilities and usage is a key initial step for understanding local needs towards ASP development in resource limited settings.