Methods

The EMR database estimated the incidence of MDR AB HAIs to be >12,000 per year. We applied the raking methodology to results across the CMS national hospital distribution by location, teaching status, and rural/urban status. De-identified National Hospital Data Provider IDs were used to rank the highest rates of MDR AB events by region (6.5%, 27.1%, 18.0%, and 16.4%), by period (Table 2), and nationally by the proportion of MDR AB events (61.5%, 64.5%, 39.2% & 49.5% for the Midwest, 44.6%, 30.1% & 47.4% for the Northeast, 43.7%, 54.9%, 36.5% & 45.5% for the South, and 47.7%, 35.8% & 41.3% for the West) for the 12 months ending June 2016 based on the CMS national hospital distribution by location, teaching status, and rural/urban status.

Results

For the 348 facilities, 3,882 non-duplicate A. baumannii isolates were identified and tested for susceptibility to 151 agents. - MDR AB isolates were defined as pathogens that tested intermediate or resistant to at least 1 drug in 3 of the following classes: extended-spectrum cephalosporins (ceftazidime, cefepime, ceftaroline, or ceftobiprole), piperacillin, piperacillin/tazobactam, and ampicillin/sulbactam.

Isolates were categorized into three settings by the collection specimen onset time: - Admission: Within 3 days of an inpatient admission and no previous admission within 14 days - Hospital-onset: 2 or more past admissions or within 14 days of discharge - Ambulatory: follow a or b

All data were consolidated into CMS (Centers for Medicare and Medicaid Services) National Hospital Data Provider IDs. The ranking methodology was applied to results across the CMS national hospital distribution by location, teaching status, and rural/urban status. De-identified National Hospital Data Provider IDs were used to rank the highest rates of MDR AB events by region (6.5%, 27.1%, 18.0%, and 16.4%) and by period (Table 2), and nationally by the proportion of MDR AB events (61.5%, 64.5%, 39.2% & 49.5% for the Midwest, 44.6%, 30.1% & 47.4% for the Northeast, 43.7%, 54.9%, 36.5% & 45.5% for the South, and 47.7%, 35.8% & 41.3% for the West).

Conclusions

These data suggest that national hospital onset MDR AB rates in the 12 months ending June 2016 may be higher than previously reported estimates2. The highest rates of MDR AB events occur in the hospital-onset period, however 27% of MDR AB events occur in the ambulatory period. The predominant sources were skin and urine in the ambulatory setting whereas respiratory and skin were predominant in the inpatient setting. The highest number of MDR AB events were seen in the Midwest and South regions.

References


Author Disclosure Information


Figure 3. Source distribution of MDR A. baumannii burden for projections of national prevalence by setting type

Figure 4. National projections of MDR A. baumannii events by region and setting

Poster # 1488

National Prevalence of Multidrug-Resistant Acinetobacter baumannii (MDR AB) Infections in the Ambulatory and Acute Care Settings, Including Carbapenem-Resistant Acinetobacter Infections, in the United States in 2015-2016

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Abstract

In 2013 the CDC classified MDR AB HAIs as a serious threat. The purpose of this study was to estimate the national prevalence of MDR AB events in the acute care and ambulatory settings in the US in July 2015 to June 2016 based on a large database from Becton Dickinson & Company.

In 2013, the CDC classified MDR A. baumannii (MDR AB) as a serious threat. The highest rates of MDR AB events were seen in the Midwest (6.5%), Northeast (27.1%), South (18.0%), and West (16.4%) regions.

Introduction

Acinetobacter baumannii is traditionally a nosocomial pathogen, but is now emerging in the outpatient setting. Approximately 2% of healthcare-associated infections (HAIs) reported to CDC’s National Healthcare Safety Network (NHSN) are caused by Acinetobacter species. In 2013, the CDC classified MDR A. baumannii (MDR AB) as a serious threat.2

Additionally, HAIs caused by Acinetobacter species often result in high mortality and economic burden.2 According to an NHSN report of antimicrobial resistance patterns for isolates in 2009-2013, Acinetobacter baumannii HAIs MDR AB was found in 60% of catheter-associated urinary tract infections, central line-associated infections, and ventilator-associated pneumonia.3 The CDC estimates 12,000-13,000 MDR AB events occur annually in the US, and of these, ~7,000 are hospital-onset. A recent study that used a Veterans Affairs EMR database estimated the incidence of MDR AB HAIs to be ~12,000 per year.4

Data were consolidated into Centers for Medicare and Medicaid Services (CMS) National Hospital Data Provider IDs with regard to Provider ID and other characteristics.

Table 3. National projections of MDR AB events (n) and MDR AB rates (%) by period and setting. Subtable (A) represents number of projected events. MDR AB rates are per 100,000 inpatient admissions of projected isolated isolates.

Table 4. Hospital Characteristics

Table 5. National projections of MDR AB events (n) and MDR AB rates (%) by period and setting. Subtable (B) represents number of projected events. MDR AB rates are per 100,000 inpatient admissions of projected isolated isolates.

Conclusions

These data suggest that national hospital onset MDR AB rates in the 12 months ending June 2016 may be higher than previously reported estimates1. The highest rates of MDR AB events occur in the hospital-onset period, however 27% of MDR AB events occur in the ambulatory period. The predominant sources were skin and urine in the ambulatory setting whereas respiratory and skin were predominant in the inpatient setting. The highest number of MDR AB events were seen in the Midwest and South regions.

The limitations to this study include that many methodologies are available to determine projections, and projections beyond the underlying data sample always have underlying assumptions and carry some risk.

Figure 2. Source distribution for MDR A. baumannii (N=348) from 348 facilities

Figure 1. Distribution (N=348) of MDR A. baumannii events by region

Figure 2. Source distribution for MDR A. baumannii burden for projections of national prevalence by setting type

Figure 3. National projections of MDR A. baumannii events by region and setting

The investigators to this study include that many methodologies are available to determine projections, and projections beyond the underlying data sample always have underlying assumptions and carry some risk.

References