**Introduction**

The β-lactamase prevalence scenario in the US differs from other countries regarding the occurrence and distribution of β-lactamase-producing isolates and the enzymes encoded (ESBLs, CMY-2-like carbapenemases, KPC, NDM and/or MOPS). Important differences were noted across the three years of the INFORM survey and the admittance to the CLSI guidelines for β-lactamase screening.

**Methods**

**Screening for β-lactamase Producing Isolates**

A total of 15,898 clinical isolates of Enterobacteriaceae, 67% K. pneumoniae, 24% E. coli, and 9% P. aeruginosa were isolated from 304 hospitals between 2012 and 2014. Only one isolate per patient infection episode was included in the surveillance (n = 500; 0.0%). All isolates were subjected to β-lactamase screening confirmed when necessary by Matrix-Assisted Laser Desorption Ionization-Time Of Flight Mass Spectrometry (MALDI-TOF MS) using the BioTyper MALDI Biotyper (Bruker, Bremen, Germany, USA) by following manufacturer instructions.

**Results**

**Detection rates**

A total of 15,898 clinical isolates of Enterobacteriaceae, 67% K. pneumoniae, 24% E. coli, and 9% P. aeruginosa were isolated from 304 hospitals between 2012 and 2014. Only one isolate per patient infection episode was included in the surveillance (n = 500; 0.0%). All isolates were subjected to β-lactamase screening confirmed when necessary by Matrix-Assisted Laser Desorption Ionization-Time Of Flight Mass Spectrometry (MALDI-TOF MS) using the BioTyper MALDI Biotyper (Bruker, Bremen, Germany, USA) by following manufacturer instructions.

**Screening for β-lactamase Producing Isolates**

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**Conclusion**

Significant changes were noted in the occurrence of β-lactamase in USA hospitals over 3 years (2012-2014). CAZ-AVI was very active against isolates producing β-lactamase. The most significant changes were noted in the occurrence of these enzymes (data not shown). Only four NDM-producing isolates were detected (7.7% of the isolates), representing a small fraction of the overall β-lactamase-producing isolates.

**Conclusions**

**Importance of differences were noted across the three years of surveillance in US hospitals, with a decrease in CRE and a significant increase in β-lactamase-producing isolates.** This latter observation of KPC-producing organisms in the US was noted in a few hospitals that displayed elevated KPC rates in 2013.

The most significant changes in the occurrence of β-lactamase-producing isolates were noted in 2013, with a decrease in the presence of CTX-M and SHV ESBL-producing isolates that displayed a higher prevalence of CTX-M encoding genotypes (Verbavert et al., 2014). This trend was also noted with the increased prevalence of KPC and SHV ESBL in the later years of the study. The CTX-M/SHV carbapenem-resistant isolates were associated with increased mortality in the US, including KPC-producing isolates.

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**References**