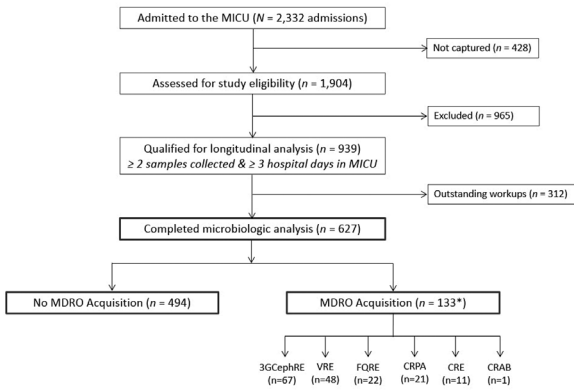


Figure 1. Patient Enrollment



*133 patients acquired 170 MDROs. Abbreviations: VRE, vancomycin-resistant enterococcus; 3GCep/RE, 3rd-generation cephalosporin-resistant Enterobacteriaceae; FQRE-Enterobacteriaceae, fluoroquinolone-resistant Enterobacteriaceae; CRPA, carbapenem-resistant *Pseudomonas aeruginosa*; CRE, carbapenem-resistant Enterobacteriaceae; CRAB, carbapenem-resistant *Acinetobacter baumannii*.

Figure 2:

OTUs identified by LEfSe as differentially abundant in the microbiota of MDRO-negative MICU patients that remain MDRO-negative and that acquire an MDRO

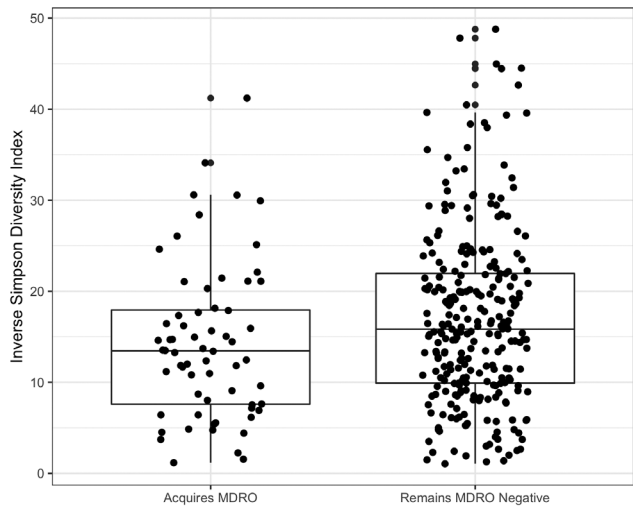
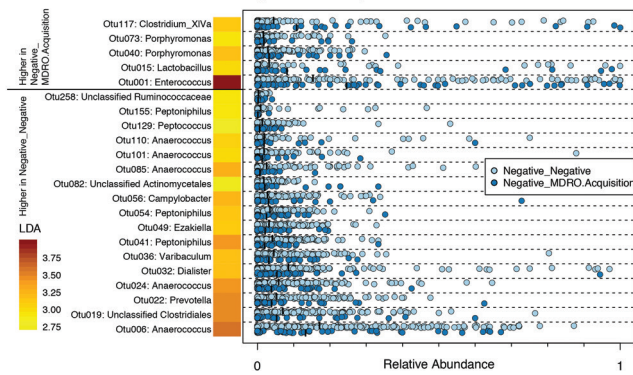


Figure 3: Gut microbiota diversity of MDRO-negative patients at admission

Disclosures. All Authors: No reported Disclosures.

2850. Burden of Difficult-to-Treat Antibiotic-Resistant (DTR) Gram-Negative Infections in the United States, 2012–2017

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Background. Difficult-to-treat resistance (DTR) is a metric for clinically relevant “pan-resistance” to available high-efficacy, low-toxicity antibiotic treatment options at any given time. Previous DTR prevalence estimates in Gram-negative (GN) bloodstream isolates from 2009 to 2014 have ranged between 1 and 1.5%. We sought to estimate the national burden of DTR GN isolates and more recent trends by region, site, and species.

Methods. Clinical cultures with GN isolates were identified from inpatient encounters in hospitals reporting at least one culture with susceptibility testing for a given month to Premier Healthcare Database or Cerner Health Facts Database from 2012 to 2017. DTR was defined as intermediate susceptibility or resistance to all tested carbapenems, other β -lactams, and fluoroquinolones, but not including agents introduced 2014 onwards. For each year, a raking procedure generated weights to extrapolate the sample estimate to match American Hospital Association distributions based on US census division, hospital bed capacity, teaching status, and urban designation. A weighted means survey procedure was used to extrapolate the sample estimate to obtain national DTR burden. Trends in DTR incidence were examined by using weighted multivariable logistic regression.

Results. Extrapolating from a 373-hospital sample, the estimated 2017 US inpatient burden of DTR isolates was 3,315 (1.3%) among sterile-site and 31,509 (1.7%) among all cultures, ranging from 0.5% to 3.3% in Mountain and New England regions respectively. *P. aeruginosa* was the most common species overall (37%), while *A. baumannii* was most common among sterile sites (31%). Between 2012 and 2017, there was no annual percent change in DTR incidence for sterile sites [OR 0.99 (0.93, 1.06)] but for all cultures it decreased 4.1% annually [OR 0.95 (0.91, 0.99)], including 9% annually for *A. baumannii* [OR 0.905 (0.860, 0.953)] and *K. pneumoniae* [OR 0.903 (0.824, 0.991)], respectively.

Conclusion. The US inpatient burden of GN isolates displaying DTR is relatively low, varies by region, and has remained stable or declined slightly in recent years. Periodic inclusion of emerging antibiotics in the DTR classification will allow for a dynamic index between resistance and available agents.

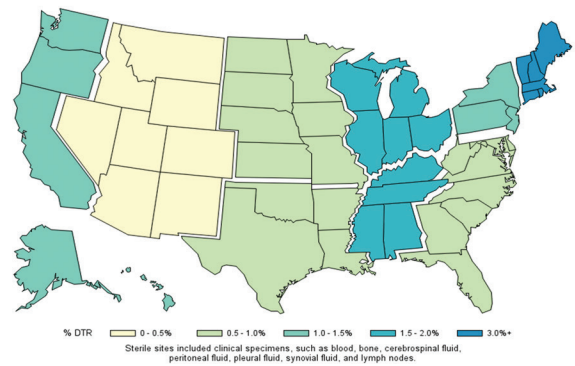
Figure 1. United States Inpatient Burden of Difficult-to-Treat Resistance (DTR) among Gram-negative Isolates in [A] all clinical cultures and [B] sterile-site clinical cultures in 2017.

The estimated 2017 U.S. burden of DTR Gram-negative isolates among [A] sterile-site clinical cultures (i.e. 3,315 or 1.3%) and [B] overall clinical cultures (i.e. 31,509 or 1.7%) is shown distributed across 9 US Census divisions. The %DTR represents the percentage of gram-negative isolates that display difficult-to-treat resistance (DTR).

Data Source: 373 hospitals reporting to the Premier Healthcare Database or Cerner Health Facts Database in 2017 extrapolated to match American Hospital Association Annual Survey Distributions.

Subfigure A

Estimated Percent of Difficult to Treat (DTR) by Region, Sterile Specimens



Subfigure B:

Estimated Percent of Difficult to Treat (DTR) by Region, All Specimen Sources

