Background. A national assessment of antibiotic appropriateness in intensive care units (ICUs) with benchmarking was performed to assist antibiotic stewardship programs (ASPs) identify improvement opportunities.

Methods. A Centers for Disease Control and Prevention tool was adapted by an expert panel from the Partnership for Quality Care (PQC), a coalition dedicated to high quality care in US hospitals, to validate appropriate antibiotic use measurement via a point prevalence survey on a single day. Data were collected by ASP personnel at each hospital, de-identified and submitted in aggregate to PQC for benchmarking. Hospitals identified reasons for inappropriate antibiotic use by category and antibiotics misused.

Results. Forty-seven ICUs from 12 PQC hospitals participated: California (2), Florida (2), Massachusetts (3), Minnesota (1), and New York (4). Most hospitals identified as teaching (83%) with 252-1550 bed size (median: 563) and 20-270 licensed ICU beds (median: 70). All hospitals reported a formal ASP. On March 1, 2017, 362 (54%) of 667 patients in participating ICUs were on antibiotics (range: 8-81 patients; 1 patient was not assessed. Of the remaining 361 antibiotic regimens, 112 (31%) were identified as inappropriate from among all 12 hospitals (range: 9-82%) (figure). The table displays inappropriate antibiotic use by ICU type. Reasons for inappropriate use included unnecessarily broad spectrum of activity (29%), duration longer than necessary (21%), and treatment of a non-infectious syndrome (19%). The antibiotic most commonly misused was vancomycin in 7 (58%) hospitals.

Conclusion. Up to 80% of antibiotic use in some ICUs is inappropriate, under-scoring the need for ASP interventions, standardized assessment tools and benchmarking. Strategies should focus on de-escalation of broad-spectrum antibiotics and reducing duration of therapy.