Background. Ceferocol (CFDC) is a Gram-negative antibiotic (GNA) with a unique mode of cell entry against carbapenem resistance. This study described the initial use of CFDC in US hospitals since its approval in November 2019.

Methods. This was a retrospective study of patients treated with CFDC consecutively for ≥3 days in US hospitals, as captured in Premier Healthcare Data from January 2020 to June 2021. This study described the clinical characteristics, CFDC usage, and Post-CFDC initiation 14-day and 28-day in-hospital all-cause mortality (IH-ACM). For patients with microbiology results, the pathogen, susceptibility and culture site associated with CFDC use were described. Index culture was the culture(s) taken on the day closest to CFDC initiation.

Results. Among 313 of 360 in-patients who received ≥3 days CFDC, the median age was 58 years (range: 17 - 89 years), and 91% were hospitalized via emergency room, trauma, or urgent admission. The most common conditions were severe sepsis with septic shock, palliative care, and multi-drug resistant infection. Also 34% had a ‘do not resuscitate order’. About 64% of patients received mechanical ventilation and 79% had ICU stay. Median length of hospital stay was 27 days (range: 3 - 310 days). Median days on CFDC was 8 days (range: 3 - 66 days). Over 58% received ≥2 other GNAs within 14-days of initiating CFDC. Among 187 patients with microbiology results, 75% had index cultures with one pathogen, and 73% had confirmed carbapenem resistant pathogens. The most common pathogens were Pseudomonas aeruginosa, Stenotrophomonas maltophilia, Klebsiella pneumoniae and Acinetobacter baumannii. The most common index culture site was respiratory. The 14-day and 28-day crude IH-ACM from CFDC initiation was 16.3% (95%CI: 12.2%-20.4%) and 23.6% (95%CI: 18.9–28.4%), respectively. Among those with microbiology results, 14-day and 28-day IH-ACM was 17.1% (95%CI: 11.7 - 22.5%) and 23.5% (95%CI: 17.4-29.6%), respectively. Among patients who died, 83% had severe sepsis with septic shock, 76% were in palliative care, 71% had a ‘do not resuscitate order’, and 44% had COVID-19.

Conclusion. CFDC was used most frequently in critically ill patients. IH-ACM was comparable with other studies.