Stewardship Programs. Proper utilization of antibiotics can help limit the development of antimicrobial resistance. Resistance in Gram-negative organisms such as *Pseudomonas*, *Enterobacter*, and *Acinetobacter* is a major issue given the paucity of new drugs in the antibiotic pipeline for these organisms. A novel relative carbapenem consumption metric (the Proportion of Carbapenem Consumption, or PoCC) was recently described in US academic medical centers. The PoCC is calculated as follows: PoCC = [(meropenem Days of therapy(DOT)/1,000 patient-days (PDs))/(meropenem DOT/1,000 PDs + cefepime DOT/1,000 PDs + piperacillin–tazobactam DOT/1,000 PDs)]. The regional mean PoCC for the South Atlantic region has previously been approximated at 17%.

***Methods.*** We examined the PoCC for the Bone Marrow Transplant (BMT) and dedicated Hematology/Oncology (H/O) inpatient wards at an academic medical center from August 2012 to June 2017.

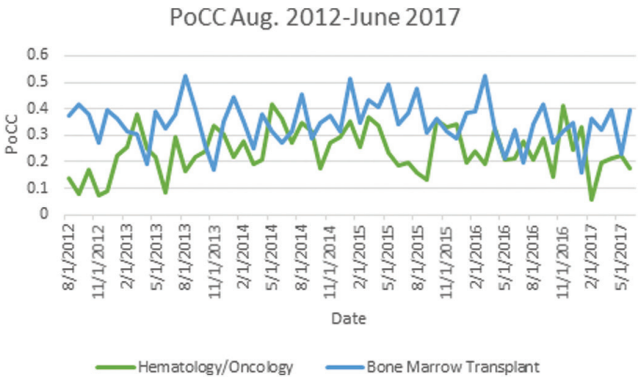
***Results.***

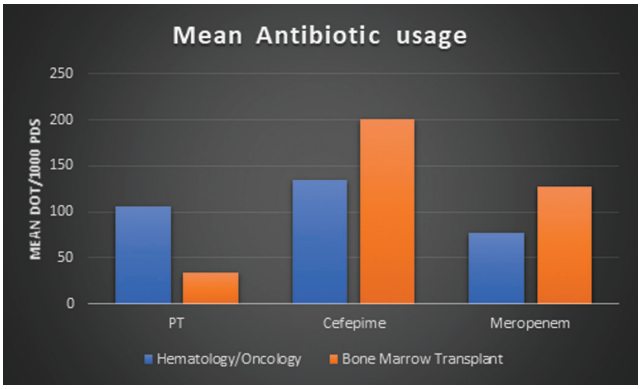
**Table 1:** Average Use of Antibiotics Expressed in DOT/1,000 PDs.

| Ward | Piperacillin–Tazobactam | Cefepime | Meropenem | Total | PoCC |
|---|---|---|---|---|---|
| Hematology/oncology | 105.1 | 134.4 | 76.6 | 316.1 | 0.24 |
| Bone marrow transplant | 34.3 | 201.0 | 127.4 | 362.7 | 0.35 |
| National means[a] | 76.2 | 60.2 | 30.7 | b | 0.18 |

[a]As described by Markley et al. Infect Control Hosp Epidemiol 2018;39:229–232.

[b]Data unavailable.




***Conclusion.*** This is the first description of the PoCC metric for dedicated Hematology/Oncology and Bone Marrow Transplant wards. When compared with national and regional mean PoCC scores for academic medical centers, the PoCC for these units was higher. More research is needed to determine the optimal PoCC scores for these types of units. The PoCC can contextualize relative carbapenem use and may be a useful antibiotic consumption metric. However, it does not provide data on absolute consumption. Further studies are needed to determine the best use of the PoCC metric by Antimicrobial Stewardship Programs for Hematology/Oncology and Bone Marrow Transplant wards.

***Disclosures.*** **All authors:** No reported disclosures.

### 253. Febrile Neutropenia Antibiotic De-escalation Study in Acute Myeloid Leukemia Patients With Prolonged Neutropenia

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**Session:** 52. Antimicrobial Stewardship: Special Populations
*Thursday, October 4, 2018: 12:30 PM*

***Background.*** The IDSA and NCCN guidelines recommend continuing IV anti-pseudomonal (IVPSA) therapy until neutrophil recovery (i.e., an ANC > 500 cells/mm$^3$) in high-risk acute myeloid leukemia (AML) patients with febrile neutropenia (FN). This recommendation is based on expert opinion and the current practice should be re-evaluated given the emergence of multi-drug-resistant organisms and high rates of *Clostridium difficile* infection (CDI) in this population. The purpose of this study was to evaluate whether IVPSA antibiotics could be safely de-escalated or discontinued in high-risk AML patients with FN following implementation of a guideline.

***Methods.*** This single-center, pre–post quasi-experimental study included patients with AML receiving induction chemotherapy hospitalized between September 2015 to February 2018. Patients in the intervention group were compared with a historical cohort of patients admitted before implementation of the guideline. The primary outcome was the incidence of suspected or documented bacterial infection after antibiotic de-escalation in the intervention group (or meeting criteria for de-escalation in the historical control group). Secondary outcomes included the incidence of CDI, IVPSA Days of Therapy (DOTs), hospital length of stay (LOS), and mortality. Patients in the intervention group were evaluated for antibiotic de-escalation on day 5 of FN and antibiotics were discontinued if patients were afebrile, hemodynamically stable, and without evidence of infection irrespective of their ANC (or de-escalated to fluoroquinolone prophylaxis in relapsed/refractory disease). In clinically stable patients with suspected or documented bacterial infection, antibiotics were continued for a defined duration per indication as outlined in the guideline.

***Results.*** A total of 93 patients were included in the analysis. Baseline demographics were similar between the two groups with the exception of more relapsed/refractory patients in the intervention group. Patients in the intervention group had similar clinical outcomes and lower rates of CDI and IVPSA DOTs (see Figure 1).

***Conclusion.*** In high-risk AML patients with FN, an antibiotic de-escalation guideline reduced the incidence of CDI and IVPSA antibiotic DOTs without adversely affecting clinical outcomes.

**Figure 1: Outcomes in High-risk AML Patients with Febrile Neutropenia**

| Endpoint | Historical Group (n=40) | Intervention Group (n=53) | P-value |
|---|---|---|---|
| Suspected or documented bacterial infection after antibiotic de-escalation[1], n (%) | 18 (45%) | 18 (34%) | 0.292 |
| De-escalated IVPSA antibiotics while neutropenic, n (%) | 3 (7.5%) | 38 (71.7%) | <0.001 |
| Incidence of CDI, n (%) | 11 (27.5%) | 3 (5.7%) | 0.007 |
| Hospital LOS, median (IQR) | 29 (24-37) | 27 (24-39) | 0.467 |
| All-cause mortality, n (%) | 6 (15%) | 6 (11%) | 0.757 |
| IVPSA antibiotic DOTs, median (IQR) | 25 (17-33) | 14 (9-24) | <0.001 |

[1]In the historical group, outcomes were evaluated after day 5 of FN once patients met clinical criteria for de-escalation as stated in the guideline

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### 254. Antimicrobial Use in Hospitalized Older Patients with Advanced Cancer

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**Session:** 52. Antimicrobial Stewardship: Special Populations
*Thursday, October 4, 2018: 12:30 PM*

***Background.*** Antimicrobial use may prolong hospitalization and suffering in patients with advanced cancer whose goals of care transition to comfort measures only (CMO).

***Methods.*** We conducted a retrospective study of all patients aged ≥65 years with stage III–IV solid tumors, stage III–IV lymphomas, or acute, refractory or active liquid tumors requiring chemotherapy or targeted therapies who were transitioned to CMO during hospitalization at Yale New Haven Hospital between July 2014 and November 2016. We performed chart review, determined antimicrobial use (including antibiotics, antifungal and antiviral agents) around CMO, and evaluated the association between antibiotic density (use of oral and IV antibiotics by calendar days) and length of stay (LOS) using multivariable linear regression.

***Results.*** We identified 461 patients. Median age was 74 years (range 65–99), 49% ($n$ = 226) were female, and 79.4% ($n$ = 366) had solid tumors. Overall, 113 patients (group 1) did not receive antimicrobials within 1 calendar day of CMO transition. Of the 343 patients who did, antimicrobials were continued after CMO in 20% ($n$ = 70, group 2) and discontinued in 80% ($n$ = 273, group 3). Patients who had antimicrobials continued after transition to CMO spent 1 more day inpatient until discharge compared with those who did not (group 2 vs. 3 in Figure 1). Five patients (group 4) started antimicrobials after CMO transition. In the multivariable model, antibiotic density remained associated with LOS ($\beta$ = 1.2, 95% CI 1.1, 1.3; $P$ < 0.0001) (Table 1).

***Conclusion.*** During their terminal hospitalization, most older adults with advanced cancer received antimicrobials, and increased antibiotic density was associated with prolonged LOS. Antimicrobial stewardship efforts should be focused on this population to optimize utilization and facilitate transitions of care.