Results. A total of 36,828 DOT were included for 56 physicians at two hospitals. Prescriber rank changed for all top five prescribers at each hospital after incorporating physician-specific denominator metrics as compared with DOT alone (Table 1). The largest change in rank observed was 19 spots using admissions as a denominator.

Conclusion. Incorporating physician-specific denominator metrics to account for differences in patient volume enhances peer comparison and results in significant changes in prescriber rank. Choice of meaningful denominator is highly dependent on staffing model for hospital physicians.

Table 1: Comparison of AU Metrics for Prescriber-specific Feedback Reports (Top 5 Prescribers (by DOT) per Metric)

Denominators: Shifts Worked and Total Patients Seen						
Prescriber	DOT (%)	Rank (N = 21)	DOT/ Shift	Rank (N = 21)	DOT/Total Patients Seen	Rank (N = 21)
A	1323 (8.2)	21	11.9	21	1.0	19
B	1106 (6.9)	20	8.6	15	0.93	16
C	981 (6.1)	19	7.4	10	1.2	20
D	891 (5.5)	18	7.4	9	0.94	15
E	828 (5.1)	17	8.2	14	0.7	7
Denominators: Admissions and 1,000 Prescriber Patient Days (PD)						
Prescriber	DOT (%)	Rank (N = 35)	DOT/ admission	Rank (N = 35)	DOT/1,000 PD	Rank (N = 35)
F	3,208 (15.5)	35	7.32	28	1,161.9	25
G	2,731 (13.2)	34	4.76	23	956.2	20
H	1,796 (8.7)	33	9.71	30	1,322.5	27
I	1,297 (6.3)	32	3.38	13	1,035.9	22
J	1,034 (5.0)	31	4.79	24	1,007.8	21

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

1820. Indirect Standardization: A Convenient Benchmarking Approach to Antibiotic Utilization Based on Patient Mix

Andras Farkas, PharmD[1]; Kimberly Sarosky, PharmD[2]; Joseph Sassine, MD[3] and Arsheena Yassin, PharmD[2]; [1]Mount Sinai, New York, New York, [2]Mount Sinai St. Luke's Hospital, New York, New York, [3]Medicine, Mount Sinai St. Luke's and Mount Sinai West Hospitals, New York, New York

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Background. Antimicrobial stewardship programs are recommended to risk-adjust antimicrobial use in order to support intra- and inter-hospital comparisons. The purpose of our investigation was to evaluate a benchmarking strategy for its ability to accurately identify changes in risk-adjusted utilization as a result of known stewardship interventions.

Methods. Antimicrobial drug use was measured as days of therapy (DOT) from billing records. Based on diagnosis-related group (DRG) assignment, we calculated expected (E) use determined by indirect standardization and compared with observed (O) use for three targeted groups of antimicrobials: anti-pseudomonals β-lactams; ceftriaxone; and fluoroquinolones. As a stewardship strategy, a clinical pharmacist-driven, individualized pseudomonal risk assessment based antibiotic prior authorization process was implemented in the third quarter of 2016, focusing on commonly encountered community-onset infections.

Results. The 10-month time period prior to implementing the intervention was used to establish the benchmark with over 10,000 billing records. Utilization assigned to DRGs from this time period was used to predict expected utilization. As a result of the intervention, a decrease in anti-pseudomonal agent utilization at the cost of an increase in ceftriaxone utilization was observed (Figure 1), with the lack of a significant impact toward change in the utilization of the fluoroquinolones. Variability in use is explained by the treated patients within each DRG.

Conclusion. Antibiotic utilization was benchmarked to expected use adjusted for patient mix based on DRGs, and trends in changing antibiotic consumption were correctly identified. Differences between expected and observed use reflect usage patterns that take into consideration type of patients treated and provides the basis of evaluation of outcome measures for our stewardship interventions.

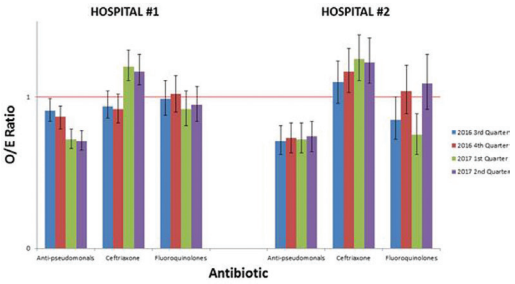

Figure 1. O/E Ratios (95% CI) Calculated for the 12 Month Time Period Following Implementation of the Intervention.

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

1821. Understanding the Components and Calculation of the SAAR, Illustrative Data

Sean Avedissian, PharmD[1]; Nathaniel Rhodes, PharmD, MSc[2]; Jiajun Liu, PharmD[3]; Doaa Aljefri, PharmD, MSc[2]; Michael Postelnick, RPh BCPS AQ ID[2]; Sarah Sutton, MD[4]; Teresa Zembower, MD, MPH, FIDSA[4]; David Martin, PharmD[5]; Gwendolyn Pais, PhD[6]; Caroline Cruce, PharmD[5] and Marc H. Scheetz, PharmD, MSc, BCPS AQ-ID[2]; [1]Pharmacy Practice, Midwestern University Chicago College of Pharmacy/Northwestern Memorial Hospital, Downers Grove, Illinois, [2]Department of Pharmacy, Northwestern Medicine, Chicago, Illinois, [3]Pharmacy, Edward Hines, Jr. VA Hospital, Hines, Illinois, [4]Division of Infectious Diseases, Northwestern University Feinberg School of Medicine, Chicago, Illinois, [5]Northwestern, Chicago, Illinois, [6]Midwestern University, Downers Grove, Illinois

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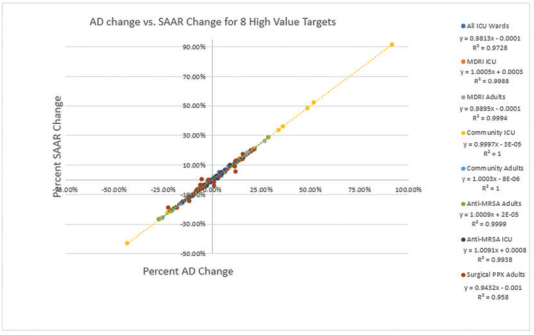
Background. The standardized antimicrobial administration ratio (SAAR) compares each hospital's observed to predicted days of antimicrobial therapy. However, confusion exists about how hospital-level, seasonal, and hospital-peer-based variations in antibiotic use might impact an institution's SAAR. We characterized the impact of each of these three types of variation on predicted SAARs utilizing local NHSN data.

Methods. Analysis of antibiotic consumption data from an academic medical center in Chicago, IL was conducted. SAAR and antimicrobial days per 1,000 days present (AD/1,000DP) were compiled in monthly increments from 2014 to 2016. Antimicrobial consumption was aggregated and classified into agent categories according to NHSN criteria. Month-to-month changes in both the SAAR and AD/1,000DP were evaluated. Azithromycin AD/1,000DP from 2012 through 2017 were explored for seasonal variation as defined as >20% increase in AD/1,000DP from each quarter to the overall mean AD/1,000DP for all months. A simulation was performed to explore the potential effect of seasonality on the SAAR. Demographic covariates within the SAAR model were altered while holding constant observed antibiotic use; thus we were able to observe the potential impact of demographics. Finally, a simulation explored the effect of altered consumption at other hospitals on a local institution's SAAR.

Results. Across all antibiotic agent categories for both ICU (n = 4) and general wards (n = 4), the average matched-month percent change in AD/1,000DP was highly predicted and correlated with the corresponding change in SAAR (Figure 1, Pearson's r = 0.99). The monthly mean ± SD AD/1,000DP was 235.0 (range 47.2–661.5), and the mean ± SD SAAR was 1.09 ± 0.26 (range 0.79–1.09) across the NHSN antibiotic agent categories. Five quarters were found to have seasonal variation in AD/1000DP for azithromycin (Figure 2). Simulations demonstrated that changing antimicrobial usage at comparator hospitals does not impact the local SAAR, and seasonal variation may cause fluctuating SAARs.

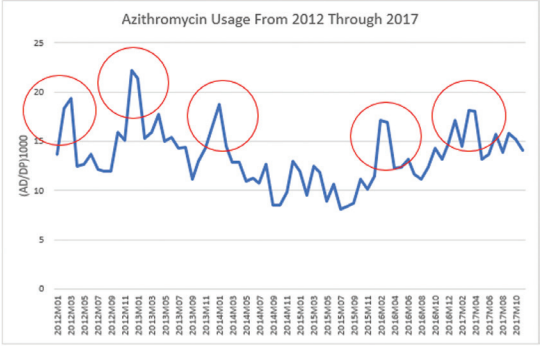
Conclusion. Month-to-month changes in the SAAR mirror monthly changes in an institution's AD/1,000DP. Seasonal variation can impact the SAAR, and the effect changing peer hospital antibiotic consumption is not currently captured by the SAAR methodology.

Figure 1. Overall Matched-Month Percent Change for all 8 Classifications



Abbreviations: ICU= intensive care unit, MDRI = multidrug resistant infections, MRSA= methicillin resistant Staphylococcus aureus, PPX= prophylaxis, AD= antimicrobial days

Figure 2. Facility-wide, Seasonal Variation of Azithromycin Between 2012 and 2017



*Each circle represents a quarter found to have quarterly variation

** Seasonal variation was defined as quarter change >20% above the overall mean for all months[9].

Abbreviations: AD = antimicrobial days, DP = days present