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Session: P-07. Antimicrobial Stewardship: Program Development and Implementation

Background. Antimicrobial stewardship initiatives can leverage metrics that make peer-to-peer comparisons. A commonly used metric compares how frequently a clinician prescribes antibiotics for acute respiratory infections (ARIs), as defined by diagnostic codes. However, it is unclear if clinicians differ in their use of ARI diagnostic codes. In this study, we evaluated differences in how frequently clinicians code for ARIs and factors that are associated with the use of ARI diagnostic codes in Emergency Department (ED) and Urgent Care (UC) visits across an integrated healthcare system.

Methods. We analyzed a retrospective cohort of all ED and UC patient-visits across 129 Veterans Affairs medical centers during 2016-2018. ARI visits were identified using ICD-10 codes for acute bronchitis, influenza, pharyngitis, sinussitis, and upper respiratory tract infections for clinicians with 100 or more visits. A generalized linear mixed model with a log link function that accounted for clustering at the clinician and facility-level was used to calculate median odds ratios (OR) and to identify factors associated with increased likelihood of entering an ARI code.

Results. There were 6,016,499 patient-visits, and 519,389 (8.6%) were coded as an ARI (Table 1). The mean rate of ARI diagnoses across all visits was 8.9% (SD 2.5%) at the facility-level and 7.4% (SD 4.5%) at the clinician-level (Table 2). The median OR was 2.19 (95% CI 2.18, 2.22), suggesting there was between-clinician variation in coding for ARI diagnoses. Visits were significantly more likely to be coded as ARIs if seen by an advanced practice provider (OR=1.97, 95% CI 1.96, 1.98). Approximately 2/5th of the variability (41.4%) in assigning an ARI diagnostic code was explained by differences across individual clinicians.

| Median Age (IQR) | Med (46-70) | 59 (46-80) | Non-ARI visit (n=4,549,710) |
|------------------|-------------|------------|---------------------------|
| Male             | 52,969,699  | (88.1)     | 4,563,737                 |
| Immunossuppression| 27,777,122  | (3.6)      | 20,202,300                |
| Respiratory Viral Season | 20,195,858  | (33.5)     | 17,637,952                |
| Abnormal Temperature | 5,261,169   | (9.9)      | 3,772,200                 |
| Chronic Disease  | 32,303,747  | (53.5)     | 30,466,126                |
| Obesity          | 11,069,94   | (18.4)     | 10,997,922                |

| Emergency Department visits | 5,190,738 | 42,950 | 47,960,003 |

Provider type
- Physician (n=35,955) 33,967,191 (92.9%)
- Advance practice provider (n=10,437,51) 2,958,815 (9.9%)
- Clinician-type not labeled (n=1,362,155) 173,214 (7.7%)

US Census Region
- Northeast 7,459,762 641,858 6,861,911
- Midwest 3,300,140 1,118,089 1,182,022
- South 2,620,143 273,020 2,347,123
- West 1,540,570 590,161 1,241,451

1. Limited to clinicians with ≥100 patient-visits during the study period.

Conclusion. There was substantial variability in how frequently ED and UC clinicians coded a visit as an ARI, and a large proportion of the variability was explained by differences across clinicians. Unmeasured factors could include different approaches to using diagnostic codes. ARI metrics based on diagnostic codes may need to account for differences in clinicians' coding behavior.

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Impact of an Antimicrobial Use Optimization Program in the First Year of Pandemic 2020 in a Large, Academic, Public Network Hospitals in Bogotá, Colombia

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Session: P-07. Antimicrobial Stewardship: Program Development and Implementation

Background. Antimicrobial resistance is a major public health threat internationally but, particularly in Colombia. High and increasing rates of carbapenemases are challenging. Implementing antimicrobial stewardship programs (AMSs) in a large, academic, public network hospitals in Bogotá, Colombia will help curb inappropriate antibiotic use.

Methods. AMS was established in April 2020 consisting of an administrative champion, Infectious Diseases staff, nurse, General Physician, microbiologist, and pharmacists. Antimicrobial stewardship program interventions included postprescriptive audit and establishment of institutional guidelines. The AMS tracked appropriate antibiotic selection including loading dose, maintenance dose, frequency, route, duration of therapy, de-escalation, and compliance with AMS recommendations. Defined daily dose (DDD) of drugs and health economics evaluations of antimicrobials (April–December 2020). Recommendations are placed in the electronic medical record as a progress note.

Results. From April to December 2020, 1,013 patients were evaluated by means of a prospective methodology. Unnecessary 689 days of hospitalization and 4420 days of antibiotic therapy were avoided. Among the top antibiotics discontinued were piperacillin tazobactam for the months of July, August, November and December, while for September and October was meropenem. The intensive care unit was the most frequently intervened service (52%), followed by hospitalization (43%) and the emergency department (5%). Over the course of the year, there was significant adherence to the program, with 100% in July, followed by 93.3% in April, 87% in December, 86.6% in May and June, 83% in November, 80% in September, 73.3% in August and 57% in October. The AMS program was able to save $47,409/US in antibiotics and $55,292/US in hospitalization, and 11% decrease in nephrotoxicity events (14 renal failures were avoided), which also saved additionally $23,503 US for a total of an estimated cost saving for the network public hospitals of $126,441 US by 2020.

Conclusion. Implementation of a multidisciplinary antibiotic stewardship program in this academic, large, academic, public network hospitals in Bogotá, Colombia demonstrated feasibility and economic benefits even in a Covid19 pandemic situation.

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116. Impact of an Antimicrobial Stewardship Program in the First Year of Pandemic 2020 in a Large, Academic, Public Network Hospitals in Bogotá, Colombia

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117. How Does Antimicrobial Stewardship Provider Role Affect Prospective Audit and Feedback Acceptance by the Attending Physician?

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Session: P-07. Antimicrobial Stewardship: Program Development and Implementation

Background. Antimicrobial stewardship (AMS) teams are commonly multidisciplinary. The effect of AMS provider role on prospective audit and feedback (PAF) acceptance has previously been investigated with mixed results. PAF of restricted antimicrobials (carbapenems, linezolid, daptomycin, and tigecycline) in adult inpatients at our large Canadian academic centre has been performed since 2018. Actionable feedback is communicated via chart note plus one of a phone call, direct message, or
Table 1. Demographics of Evaluated Inpatients, N = 39 (%)

| Category                        | N = 39 (%) |
|---------------------------------|------------|
| Gender                          | Male 57%   |
| Age (years)                     | Median 68  |
| Race                            | White 94%  |
| Education                       | High School 78% |
| Employment                      | Full-time 85% |

Table 2. Reported Reactions, N = 41 (%)

| Category                        | N = 41 (%) |
|---------------------------------|------------|
| Type of Reaction                |            |
| Drug                            |            |
| Asthma                           | 4 (9.8%)   |
| Bronchitis                       | 4 (9.8%)   |
| Dermatitis                      | 1 (2.4%)   |
| Diaphoresis                     | 1 (2.4%)   |
| Dyspnea                         | 1 (2.4%)   |
| Eosinopenia                     | 1 (2.4%)   |
| Erythema                        | 1 (2.4%)   |
| Eyes                             | 1 (2.4%)   |
| Fever                           | 2 (4.9%)   |
| Headache                        | 1 (2.4%)   |
| Integumentary                   | 1 (2.4%)   |
| Itching                         | 1 (2.4%)   |
| Laryngitis                      | 1 (2.4%)   |
| Nausea                          | 2 (4.9%)   |
| Rash                            | 1 (2.4%)   |
| Soreness                        | 1 (2.4%)   |
| Tongue                          | 1 (2.4%)   |
| Tongueitis                      | 1 (2.4%)   |
| Urinary tract                   | 1 (2.4%)   |

Total N exceeds evaluated patient number as one patient reported multiple reactions.