Conclusion. TNFα is not only linked to active TB, but also associated with other mycobacterial diseases including M. marinum. While CDC reports a delay of 17 months from time of onset of symptoms to establishing the diagnosis, our three cases were diagnosed much earlier. Early diagnosis relies probably on involvement of infectious diseases specialists early in the course of the illness and the readiness in sampling of the lesions. The challenge to the clinicians remains in the safety and the timing of resuming anti-TNFα treatment after M. marinum infection.

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1776. Establishing an Antimicrobial Stewardship Program in a Resource Limited Setting: Experience of an Ethiopian Hospital

Abera Balchi Baltu, MD, DTMB1; Anteneh Zewde, MD,2; Demisie Ayalew Anteneh, B. pharm3 and Kurt Stevenson, MD, MPH, FSHEA;4 Department of Internal Medicine, University of Gondar, College of Medicine and Health Sciences, Gondar, Ethiopia; 5Division of Infectious Diseases, Hospital General Plaza de la Salud, Santo Domingo, Dominican Republic; 6MD, University of the West Indies, School of Clinical Medicine and Research/Bahamas, The University of the West Indies, Nassau, Bahamas

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Background. Antimicrobial stewardship programs are nonexistent in most resource limited settings like Ethiopia. This has resulted in inappropriate use of antibiotics and widespread development of antibiotic resistance. Targeted initiatives surrounding antimicrobial use are needed to tackle this global health threat. Therefore, a program was established to generate data on antibiotic consumption, resistance, and facilitate appropriate use of antibiotics at an academic hospital in northwestern Ethiopia.

Methods. A committee was developed with a multidisciplinary team of clinicians, microbiologist, pharmacists and nurses. A baseline assessment of antibiotic use in the hospital was conducted through review of patient prescriptions and antibiotic inventory changes over time. To understand patterns, listed indication for use was recorded. Clinical audits, provider feedback mechanisms, and a quarterly antibiogram were also developed.

Results. Among 384 records of patients with infectious diseases, 250 adult and 134 pediatric cases were identified. Community acquired pneumonia (CAP) was the most common reason for use of antibiotics, accounting for 33.6% of adults and 22.2% of pediatric cases. Cephalosporins and penicillins were used in adults with CAP in 48.8% and 51.2% of cases, respectively, with or without macrolides or tetracycline. For severe CAP (30 cases), WHO or IDSA guideline concordance was identified in 53% of appropriate antibiotics used. Minimum Inhibition Concentration (MIC) testing of 25 (76.6%) of Gram-positive treatment duration in 15 (50.0%), and timely switch to oral therapy in 20 (66.7%) of the cases. The quarterly antibiogram included 516 bacterial isolates over one year. The most common organisms were Staphylococcus aureus and Escherichia coli, accounting for 34.7% and 16.8% isolates, respectively. The challenges faced in establishing the program were lack of electronic medical records for tracking antibiotic use and inconsistent supply of microbiological reagents for microbial surveillance.

Conclusion. An effective antimicrobial stewardship program can be established in a resource limited setting with a committed team. Data generated by the program will be used to guide appropriate use of antibiotics and design interventions.

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1777. Implementation of an Antimicrobial Stewardship Program (ASP) at the Princess Margaret Hospital, Nassau Bahamas

Victoria Johnson-Thompson, PharmD, BSc, RPh, FASHP, FAAHMS; 1Nikkiah Forbes, MBBS, DM, Medicine1 and 2Morton Anthony C. Fermin, MD, 3C. Franklin Frasch, MBBS, MPH, MCCP; 4Pharmacy, Princess Margaret Hospital, Nassau, Bahamas, 5The University of The West Indies, Nassau, Bahamas, 6School of Clinical Medicine and Research/Bahamas, The University of the West Indies, Nassau, Bahamas

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Background. ASPs optimize antibiotic use, achieve best outcomes, minimize adverse effects, reduce costs, and limit pressures contributing to the emergence AMR. SHEA, IDSA, and PIDS recommend mandatory implementation of ASP throughout healthcare institutions. The objective was to describe antimicrobial stewardship related lessons learnt in light of interventions made during the first year of implementation of an ASP at the Princess Margaret Hospital in Nassau, Bahamas.

Methods. A prospective audit of antimicrobial use with feedback and intervention was the strategy employed by antimicrobial stewardship between November 2016 and September 2017. The clinical pharmacist monitored patients on adult medical, surgical wards, and critical care unit for the use of carbapenems, vancomycin, antipseudomonal cephalosporins, pipercillin–tazobactam, fluoroquinolones, intravenous fluconazole, amphotericin B, and acyclovir. Antimicrobial stewardship rounds were done by the ID physicians and clinical pharmacist in order to make recommendations to the clinical team. These included de-escalation, escalation of antimicrobial therapy, infectious disease consultations, recommendations, and pharmacokinetic dosing. Acceptability of prospective and feedback recommendations, time to intervention, and patients' socio-demographics were also obtained.

Results. Eighty-eight patients were seen during this period in which 52 (59.1%) were females and 36 (40.9%) males. One hundred two recommendations were made by the antimicrobial stewardship team. Of these, 53 (52%) patient interventions were made. Forty-nine (48%) patients were reviewed and left on therapy. Antimicrobial stewardship interventions included de-escalation 22 (41.5%), ID consultation 21 (30.6%), escalation 17 (32.3%), and pharmacokinetic dosing 5 (5.2%). 16 (32%) de-escalation of therapy was accepted and 6 (12%) not accepted. The mean number of days that antimicrobials were administered before intervention was 3 (range: 0–18 days).

Conclusion. An ASP is a feasible strategy to reduce emerging antimicrobial resistance, and its implementation at The Bahamas, impact on ASP metrics and may result in significant de-escalation of antimicrobial therapy. The way forward is to formalize ASP into a sustainable, structured program within the institution.

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1778. Exploring Bacterial Resistance in Northern Oman, a Stewardship Initiative to Improve Antimicrobial Prescribing and Use

Diaa Al Rahman, Pharmacist1; Abel Albeloush, Pharmacist1; Iman Al Raissi, Pharmacist1; Ahmed Alzaabi, Pharmacist1; Mohammed Al Raissi, Physician2 and Islam M Ghaizi, PharmD3; 1Pharmacy, Sohar Hospital, Sohar, Oman, 2Sohar Hospital, Sohar, Oman, 3Oman, Microbiology Laboratory, Sohar Hospital, Sohar, Oman; 4Pharmacy Practice Amistation, Philadelphia College of Pharmacy at University of the Sciences, Philadelphia, Pennsylvania

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Background. Surveillance and characterization of bacterial isolates are the preliminary approaches to optimize the use of antibiotics and guide both clinical and institutional decisions surrounding the perspicious use of antibiotics. We sought to describe the local prevalence of bacterial resistance to direct our stewardship interventions.

Methods. Research Approval was obtained from Ministry of Health, Sultanate of Oman. We surveyed all bacterial isolates collected by microbiology laboratory of Sohar Hospital. We identified tertiary care serving patients of northern Oman) between January 1, 2016 to December 31, 2017. Acquired data included: patient demographics, requesting ward, relevant dates (admission, discharge, sample request and collection, result release), specimen type, isolate identification, and sensitivity. Samples from the same patient a week with identical phenotype were excluded.

Results. Isolates (n = 15,733) were Gram-positive 29%, Gram-negative 67%, Candida species 23%, other fungi 0.3%, mycobacteria 0.4%. Of Gram-positive group, Staphylococcus aureus (MSSA 27% and MRSA16%), S. agudactiae 25%, coagulase negative staphylococci 12% and others (18 organisms) 19%. Vancomycin was active against 99% of tested isolates. Of Gram-negative group, E. coli 32%, P. aeruginosa 22%, K. pneumoniae 19%, A. baumannii 5%, P mirabilis 4%, and others (57 organisms) 13%. Extended spectrum β-lactamase production was detected in 12% of cases, while phenotypic colorimetric testing revealed 4% carbapenemase production. Critical care units accommodated 79% of cases with carbapenem resistance infections consisting of 43% pneumonia, 27% blood stream infections, and 12% urinary tract infections.

Conclusion. Vancomycin resistance is limited, cefazolin, and other β-lactams are appropriate empirical agents for a wide range of cases, adequate vancomycin dosing and monitoring should be emphasized to hinder resistance development. Increasing number of carbapenem-resistant cases are being encountered, necessitating consideration of early detection and treatment, appropriate alternative agents and combinations, in addition to a multi-disciplinary approach to treat these recalcitrant infections.

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1779. Defining Antimicrobial Use and Resistance in a Teaching Hospital in the Dominican Republic: Key First Steps for Development of Antimicrobial Stewardship in a Resource Limited Setting

Rita Rojas Fermin, MD1; Anel Guzman, MS2; Alfredo J. Mena Lora, MD3; 1Department of Infectious Diseases, Hospital General Plaza de la Salud, Santo Domingo, Dominican Republic, 2Microbiology Laboratory, Hospital General Plaza de la Salud, Santo Domingo, Dominican Republic, 3Division of Infectious Diseases, University of Illinois at Chicago, Chicago, Illinois

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Background. Antimicrobial resistance is a rising threat in developing nations. Establishing antimicrobial stewardship programs (ASP) in resource-limited settings may help curb the rise of antimicrobial resistance. Understanding local resistance patterns and antimicrobial usage can help define appropriate empiric treatment regimens and gaps for ASP development. There is a paucity of data on antimicrobial usage and local susceptibilities in the Dominican Republic (DR). As part of our antimicrobial stewardship initiative, we seek to define antimicrobial resistance and antimicrobial usage at Hospital General Plaza de la Salud (HGPS); a 200 bed teaching hospital in the DR.

Methods. This is a retrospective review of local susceptibility patterns and antimicrobial use. Antimicrobial susceptibility data for Gram-negative organisms was collected from 2014 to 2017. Antimicrobial use was collected from all inpatient units from January 1, 2017 to December 31, 2017. Defined daily doses (DDD) of antimicrobials was calculated per 1,000 patient-days (DDD/1,000) was tabulated.
The most common Gram-negative organisms were Klebsiella pneumoniae and Escherichia coli. Extended-spectrum β-lactamase (ESBL) producing E. coli and K. pneumoniae were common (Figure 1). The average rates of ESBL E. coli and K. pneumoniae were 55% and 64%. The total average DDD/1,000 was 83. The average DDD/1,000 per drug is graphed in Figure 2.

**Figure 1.** Percentage of ESBL producing EC and KP.

**Results.** Ceftriaxone and ceftazolin were the most commonly prescribed antimicrobials. Rates of ESBL-producing EC and KP are high at HGHS, with average rates above 50%. This differs greatly from reported prevalence in the United States. Thus, local treatment guidelines need to be established and may differ from Infectious Diseases Society of America guidelines. Further studies are needed to identify the clinical characteristics and risk factors of patients with ESBL in the DR. This will help local ASP programs identify and advise carbapenem use for patients at risk. Our experience at HGHS suggests that assessing local antimicrobial susceptibilities and usage is a key initial step for understanding local needs toward ASP development in resource limited settings.

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**1780. Results of a Successful Implementation of a Antimicrobial Stewardship Program in a Public Hospital in Sao Paulo, Brazil**

Filipe Pastrutti Sr., MD; Giovanna Sapenzo, MD; Karina Borges, RN; Fernando Rodrigues, RN; Caroline Borba, PharmD; Juliana Gabriela Fernandes, MD and Cinthia Lima, PharmD; Sapopemba Hospital, Sao Paulo, Brazil

**Session:** 216. Antimicrobial Stewardship: Global Perspectives

**Background.** The implementation of antimicrobial stewardship program is one of the basis for the control of multidrug-resistant bacteria (MDR) and the reduction of unnecessary costs, especially in public hospitals. The use of a multimodal strategy is fundamental to the success of a stewardship program.

**Methods.** This is an analysis of antimicrobial consumption in intensive care unit (ICU) of a public hospital in Sao Paulo, Brazil, before and after the implementation of the antibiotic stewardship program. In the pre-intervention period—January 2014 to December 2015—the rational use of antimicrobials was based only on postprescription authorization by the infectious diseases doctor. Since January 2016 was established an antibiotic stewardship program based on authorization of antimicrobial use, implementation of an empirical antibiotic protocol according to institutional microbiological profile, measurement of adherence to the protocol and feedback to the leadership; pharmaceutical intervention, educational measures for medical staff and leadership engagement to the program. We compared consumption in DDD per 1,000 patient-days (1,000/pd) and mean cost with antimicrobials in the ICU in US dollars.

**Results.** The overall antimicrobial consumption reduced from 1,032 DDD/1,000 pd in the preintervention period to 785 DDD/1,000 pd postintervention. Analysis stratified by individual antibiotic was done for the five most commonly used antimicrobials. A reduction of 51% consumption for meropenem, 41% for colistin, and 41% for vancomycin was observed. Antibiotic costs were reduced from a monthly median of US$21,764 to US$3,722.5 between the two periods. No difference in mortality or mean Apache was observed over the period.

**Conclusion.** The implementation of the antimicrobial stewardship program can lead to a safe reduction in antibiotic use in the ICU, with significant reduction of costs that can be reapplied in the patient care. Further analyzes are needed to assess the impact on clinical patient outcomes.

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**1781. Impact of an Antimicrobial Stewardship Intervention in India: Evaluation of Post Prescription Review and Feedback as a Method of Promoting Optimal Antimicrobial Use**

Priscilla Rupali, MD1; Marcus J. Zervos, MD2 and Christian Medical College Hospital Antimicrobial Stewardship Team; Infectious Diseases, Christian Medical College, Vellore, India, Infectious Disease, Henry Ford Health System, Detroit, Michigan

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**Background.** Antimicrobial stewardship programs (AMSP) are effective in developed countries. This study assessed the effectiveness of an AMSP in a low middle-income country like India.

**Antibiotics Use**

An Infectious Diseases (ID) physician-driven prospective audit and feedback strategy to evaluate the effectiveness of an AMSP in two intensive care settings of a tertiary care hospital was performed from January 2016 to July 2017 in three phases: baseline, intervention and follow-up each consisting of 6 months. In the baseline and follow-up period, relevant data were recorded. In the intervention phase a patient on antibiotics for >48 hours was assessed by an ID physician and recommendations made. Primary outcome was days on antimicrobial therapy (DOT) and other secondary outcomes were assessed.

**Results.** A total of 401, 381, and 379 patients were recruited in the baseline, intervention, and follow-up phases. Baseline characteristics of the three groups were similar. Antimicrobial use decreased from 831.5 during baseline to 717 DOT per 1,000 patient days in the intervention (P < 0.0001) and the effect was sustained in the follow-up period (713.6 DOT per 1,000 patient-days). Among the study antimicrobials, DOTs were significantly lower in the intervention vs. baseline phase for Quinolones (21.5 vs. 33.3), Carbapenems (340.2 vs. 426.0) and Colistin (131.5 vs. 155.9) (P < 0.0001). De-escalation according to culture susceptibility was significantly higher in the intervention group compared with the baseline (42.7% vs. 33.6%; P < 0.0001). Compliance to hospital-based antibiotic guidelines significantly improved in intervention and follow-up phases compared with the baseline (19.5%, 21.8%, 33.2%; P < 0.0001). We found that 73.3% of antibiotic prescriptions were inappropriate and commonly occurred in the absence of an appropriate clinical indication. Recommendations by the ID team were accepted in 66.7% of the cases. All cause in hospital mortality rates were 22.4% and 27.6% in the baseline and intervention phases respectively (P = 0.093).

**Conclusion.** An ID physician-driven antimicrobial stewardship program was successful in reducing antibiotic utilization without compromising patient safety in low middle-income countries; however, this needs further validation.

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**1782. Guideline-Discordant Carbapenem Prescribing Policies at a Large, Urban Hospital in Manila, Philippines**

Katlin Mitchell, PhD1; Nasta Sadfar, MD, PhD2; and Cybele Lara Abad, MD, FIDSA3

1Department of Population Health Sciences, University of Wisconsin-Madison, Madison, Wisconsin, 2Medicine, University of Wisconsin, Madison, Wisconsin, 3Internal Medicine Section of Infectious Diseases, The Medical City, Pasig City, Philippines

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**Background.** Hospital antimicrobial stewardship programs are critical in countries such as the Philippines, where antibiotic-resistant infections are highly prevalent. At our institution, a Prior Antimicrobial Restriction Approval (PARA) is required for noninfectious disease specialists to prescribe carbapenem. PARA request forms include specification of empiric or definitive therapy based on diagnostic tests. Recommended duration of therapy is typically 3 days for empiric use and 7 days for definitive, with possible extension upon specialist approval.

**Methods.** The study took place at an 800-bed tertiary hospital in Manila, Philippines. Using retrospective chart review, patients with a PARA request for carbapenems between January and December 2016 were identified. Information on patient demographics, hospital stay, infection, treatment, and outcomes was collected using the hospital’s online record system. Carbapenem use was scored as concordant or discordant based on guidelines of the Infectious Diseases Society of America: de-escalation based on culture data, length of carbapenem therapy, and/or consultation with an Infectious Disease Specialist.

**Results.** Of 183 patients on carbapenem therapy, 56 (31%) were classified as discordant and 127 (69%) were empiric (Table 1). In addition, 56 (44%) of the patients on carbapenem therapy were found to have guideline discordant. The primary reason for discordance was failure to de-escalate the carbapenem following culture results (80% of cases with empiric prescriptions).

**Conclusion.** Patients who were prescribed carbapenems empirically were more likely to have overall discordant therapy, which was often due to unnecessarily long antibiotic courses or failure to revise treatment based on laboratory data. Interventions...