O603
2-hour Oral Session
Tools and interventions to improve hospital antimicrobial prescription quality

The global point prevalence survey of antimicrobial consumption and resistance (Global-PPS) in 335 hospitals worldwide

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Background: Point Prevalence Surveys (PPS) are well established surveillance methods for monitoring antimicrobial prescribing in hospitals. The Global-PPS expanded this method to monitor antimicrobial prescribing and resistance rates worldwide. bioMérieux provided unrestricted funding support for the survey.

Methods: Data were collected in February-September 2015 from 335 hospitals (H) in 53 countries (C), including Europe (24C;214H); Africa (5C;12H), Asia (16C;57H), South-America (3C;19H), North-America (3C;24H), and Oceania (2C;9H) using a standardized and validated method. Detailed data was collected for all inpatients receiving an antimicrobial on the day of the survey. Denominator included all admitted inpatients. A web-based application was used for data-entry, validation and reporting as designed by the University of Antwerp (www.global-pps.com).

Results: In total, 100,127 patients admitted to 5,824 wards were surveyed. Antimicrobial prevalence was 34.5%, which varied between continents (range: 31.8% in Europe to 48.7% in Africa), hospital type (range: 27.3% in primary care to 45.8% in specialized hospitals) and countries (range: 23.7% in Bulgaria to 88.2% in Bahrain). Among all antimicrobials (n=48,388); antibiotics, antifungals and drugs to treat tuberculosis represented 89.6%, 4.3% and 2.3%. Out of 43,373 antibiotics, 70.5% (n=30,557) were prescribed for treatment and 25.3% (n=10,975) for medical or surgical prophylaxis. Among antibiotics prescribed for treatment, 34.3% were for a hospital acquired infection ranging from 17.2% (of which 22.9% targeted) in Africa to 45.9% (of which 43.1% targeted) in South-America. Top 3 antibiotics used were ceftriaxone (11.2%; range 8.1% in Oceania to 17.2% in Africa); amoxicillin/clavulanic acid (10.4%; range 0.7% in South-America to 14.9% in Europe) and piperacillin/tazobactam (7.0%; range 0.2% in Africa to 10.6% in North-America). Meropenem represented 4.0% of prescriptions (range: 2.3% in Africa to 5.5% in Asia). Highest quinolone use was in North-America (15.7% of all antibiotic prescriptions, mainly levofloxacin). Among 34,594 treated patients, 21.7% got a targeted treatment, among which 6.7% (range: 3.9% in Africa to 17.9% in South-America) received an antibiotic targeting a multidrug resistant organism. ESBL-producing Enterobacteriaceae was the most often reported cause (range: 1.4% in Africa to 6.2% in South-

America). The reason for treatment was recorded in 77.6% of antibiotic prescriptions. A stop/review date was less often recorded (range: 30.0% in Oceania to 42.3% in North-America). Local guidelines were missing in 20.4% of antibiotic prescriptions ranging from 17.1% in Europe to 27.1% in Asia. Guideline compliance ranged from 66.1% in South-America to 84.2% in North-America.

Conclusions: This Global-PPS demonstrated that worldwide surveillance can be accomplished with voluntary participation. This tool provided quantifiable outcome measures to assess and compare quantity and quality of antibiotic prescribing in hospitalized patients worldwide. These data serve to identify targets for quality improvement of antibiotic prescribing, the development of local prescribing guidelines, education and practice changes, and for measuring the impact of interventions through repeated PPS.