

# The Global Point Prevalence Survey of Antimicrobial Consumption and Resistance (Global-PPS): 2015 and 2017 Results of Antimicrobial Prescribing in Medical Institute – Ministry of the Interior, Sofia, Bulgaria.

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## INTRODUCTION AND PURPOSE

A uniform and standardized method for surveillance of antimicrobial use in hospitals was used to assess the quality of antimicrobial prescribing in the Medical Institute – Ministry of the Interior, Sofia, Bulgaria. BioMérieux provided unrestricted funding support for the survey.

## METHODS

PPS was conducted in 1 week in April 2015 and 2017, in the national tertiary care 310-bed hospital. The survey included all inpatients receiving an antimicrobial on the day of PPS. Data collected included details on the antimicrobial agents, reasons and indications for treatment as well as a set of quality indicators. A web-based application is used for data-entry, validation and reporting as designed by the University of Antwerp, Belgium ([www.global-pps.com](http://www.global-pps.com)).

## RESULTS

Out of 215 and 224 admitted adult inpatients in 2015 and 2017, 23.7% and 29.5% were treated with antibiotics respectively. Commonest diagnoses were pneumonia (pneu), pyelonephritis (pye), genito-urinary infections (GUM), skin and soft-tissue infections (SST), intra-abdominal sepsis (IA) (Table 1). HAI rate was 4.5%. Empiric therapy accounted for 74.6% of CAI and 18.8% of HAI. There was an overall decrease of ceftriaxone in 2017 as compared to 2015 on the study day (Figure 1). Third-generation cephalosporins and carbapenems were most prescribed on ICU. The duration of surgical prophylaxis in 2015 was mainly 1 day, whereas in 2017 >1 day. A stop/review date was more frequently documented in the notes in 2017 (Figure 2).

Table 1. Main diagnostic indications of antibiotic prescribing in 2015 and 2017

Diagnosis	2015	2017
SST	9.1	25.0
IA	3.0	16.1
Pneu	24.2	16.1
Pye	18.2	16.1
Cys	3.0	8.9
Bron	9.1	5.4
ENT	6.1	1.8
FN	3.0	
GI	9.1	
GUM	12.1	

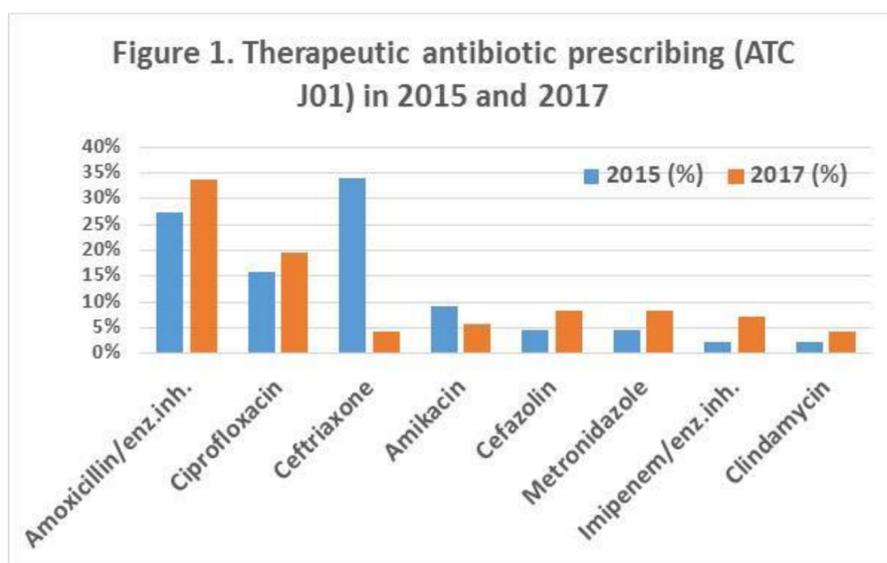
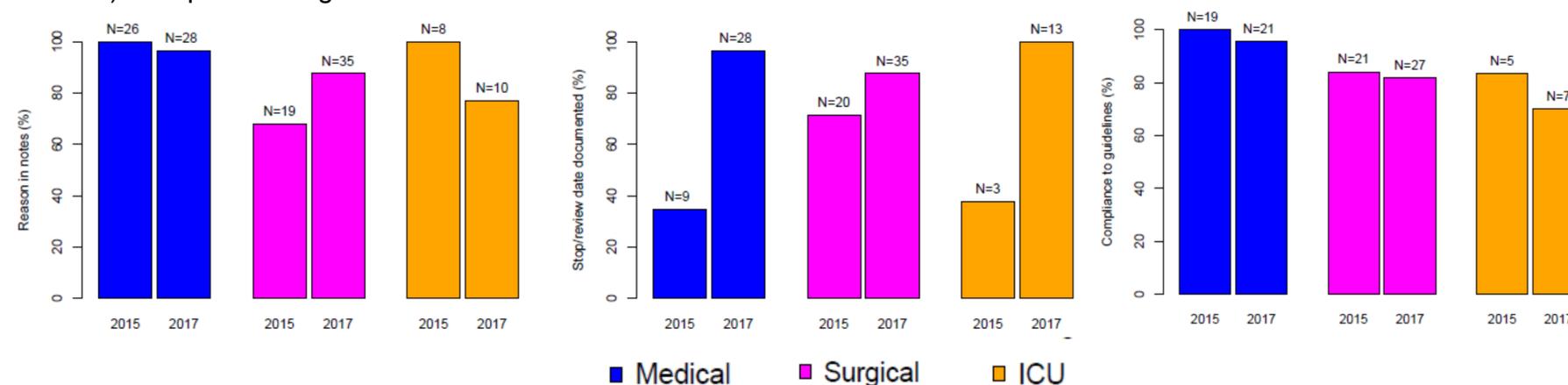


Figure 2. Antibiotic quality indicators in 2015 and 2017: 1) Reason in notes and 2) Stop/review date documented in notes; and 3) Compliance to guidelines.



## CONCLUSION

Global-PPS revealed in 2017 an increased rate of antibiotic consumption, carbapenem use and prolonged surgical prophylaxis. Government' involvement in Antimicrobial stewardship is necessary, including appropriate policy and guidelines, funding, control; and implementation of rapid diagnostic methods in order to support appropriate antibiotic prescribing.

Antibiotic therapy of pneumonia at MI in 2015 showed a substantial usage of amoxicillin/clavulanic acid – in 50 %, ceftriaxone – 25 % and ciprofloxacin – 25 %. In 2017 the first 3 top prescribed antibiotics were ciprofloxacin – 36 %, amoxicillin/clavulanic acid – 25 %, amikacin – 18 %. This treatment represents a deviation from the accepted Guidelines for pneumonia.

Global-PPS also identified a deviation from the accepted Guidelines for antibiotic prophylaxis in surgery. In 2017, the majority of prophylaxis courses lasted more than 1 day and the antibiotic choice included often the second/third choice amoxicillin/clavulanic acid (45%).