The Global Point Prevalence Survey (Global-PPS): quality indicators for antimicrobial use for adult patients in the Philippines 2017-2023

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BACKGROUND & OBJECTIVES

Assessment of the quality of antimicrobial prescriptions is essential for monitoring an antimicrobial stewardship program. This study aims to evaluate a set of quality indicators over a seven-year period and to identify areas for improvement in antibiotic use in the Philippine setting.

METHODS

The Global-PPS is a cross-sectional survey on the prevalence of antimicrobial use among admitted patients in the hospital. It was conducted in the Philippines from 2017-2023. The survey included all inpatients receiving an antimicrobial on the day of the survey. Data collected included details on the antimicrobial agents, indications for treatment and antimicrobial prophylaxis as well as a set of quality indicators. A web-based application designed by the University of Antwerp was used for data entry, validation, and reporting, (www.global-pps.com).

RESULTS

Data were collected from 72 hospitals in the Philippines (2017:16, 2018:28, 2019:31, 2020:34, 2021:50, 2022:57, 2023:61). A total of 71,659 patients on adult wards were monitored from 2017-2023, with 38,118 (53.2%) patients on at least one antimicrobial. Overall, 50.8% received at least one antimicrobial for a community-acquired infection, 14.8% for healthcare-associated infections, 24.4% for surgical prophylaxis, and 8.9% for medical prophylaxis. The most commonly used systemic antibiotics for adults were ceftriaxone, piperacillin and enzyme inhibitor, and cefuroxime (Table 1). The most common indication for therapeutic antimicrobial use was pneumonia (Table 2).

The quality indicators monitored included documentation of reason/indication in notes (range: 59.8–81.6%, mean: 73.1%), stop date documentation (range: 29.7–53.4%, mean: 44.8%), and compliance with treatment guidelines (range: 67.2–85.4%, mean: 79.6%) (Figure 1).

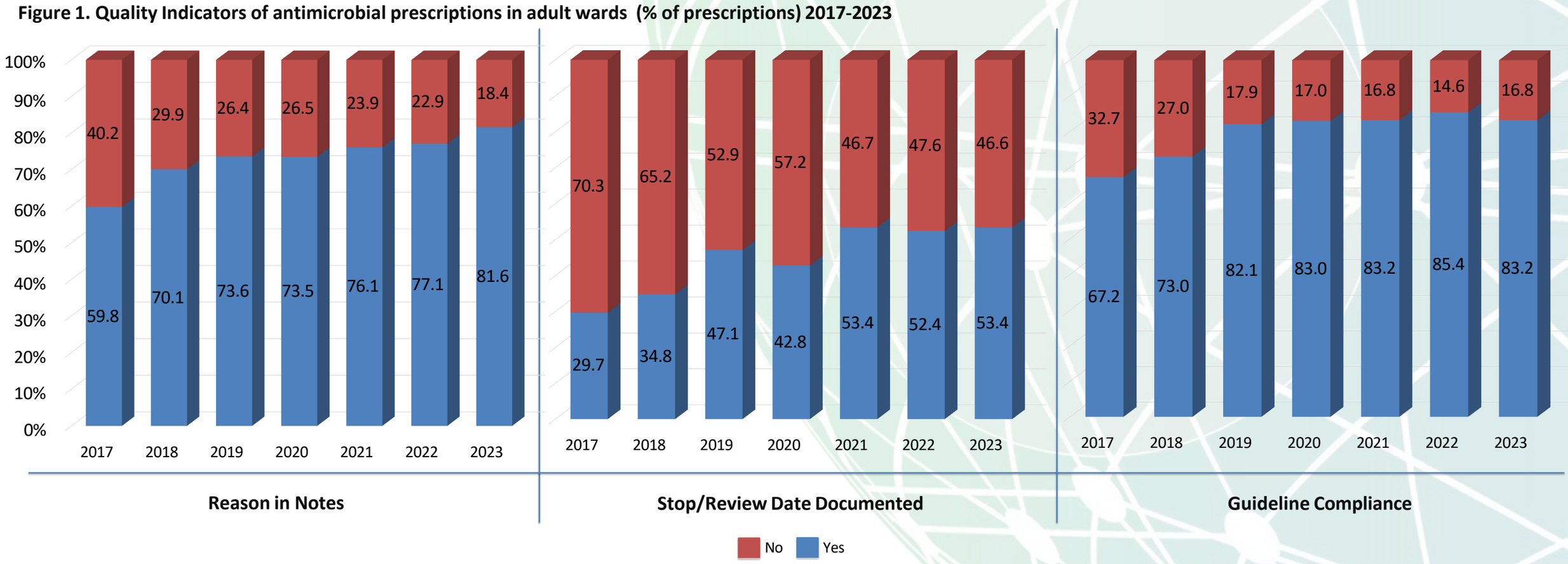
Table 1. Top 10 most commonly used antibiotics (% of J01 prescriptions) in adult wards

2017 (n=4,111)		2018 (n=5,546)		2019 (n=5,247)		2020 (n=3,439)		2021 (n=8,791)		2022 (n=11,224)		2023 (n=12,804)	
Cefuroxime	17.3	Cefuroxime	16.7	Cefuroxime	13.9	Ceftriaxone	11.3	Ceftriaxone	13.8	Ceftriaxone	13.8	Ceftriaxone	15.6
Ceftriaxone	10.0	Ceftriaxone	10.8	Ceftriaxone	11.9	Piperacillin and enzyme inhibitor	11.0	Cefuroxime	11.6	Cefuroxime	11.8	Piperacillin and enzyme inhibitor	12.1
Piperacillin and enzyme inhibitor	9.9	Piperacillin and enzyme inhibitor	8.2	Piperacillin and enzyme inhibitor	8.8	Cefuroxime	11.0	Piperacillin and enzyme inhibitor	11.2	Piperacillin and enzyme inhibitor	11.3	Cefuroxime	11.0
Azithromycin	6.4	Azithromycin	5.8	Azithromycin	7.4	Azithromycin	8.3	Azithromycin	9.2	Meropenem	6.4	Azithromycin	6.7
Clindamycin	5.3	Clindamycin	5.7	Clindamycin	5.0	Meropenem	7.2	Meropenem	6.5	Azithromycin	6.0	Clindamycin	6.1
Metronidazole	5.1	Meropenem	4.2	Ampicillin and enzyme inhibitor	4.5	Metronidazole	5.0	Clindamycin	4.3	Clindamycin	5.8	Meropenem	5.7
Meropenem	5.1	Metronidazole	3.9	Meropenem	4.5	Clindamycin	5.0	Levofloxacin	4.0	Metronidazole	4.6	Metronidazole	4.7
Cefazolin	3.4	Cefazolin	3.8	Metronidazole	4.1	Levofloxacin	4.0	Ciprofloxacin	3.5	Vancomycin	3.8	Vancomycin	3.5
Ciprofloxacin	3.3	Ciprofloxacin	3.5	Cefazolin	4.0	Vancomycin	3.2	Metronidazole	3.4	Cefazolin	3.8	Cefazolin	3.4
Ampicillin and enzyme inhibitor	3.1	Ampicillin and enzyme inhibitor	3.5	Levofloxacin	3.4	Ceftazidime	3.0	Ampicillin and enzyme inhibitor	3.0	Levofloxacin	3.2	Levofloxacin	3.3

Table 2. Top 5 diagnoses for therapeutic antimicrobial treatment (% of patients on antimicrobials) in adult wards

2017 (n=1,736 patients)			2018 (n=2,608 patients)			2019 (n=2,518 patients)			2020 (n=1,852 patients)			2021 (n=4,881 patients)			2022 (n=5,515 patients)			2023 (n=6,361 patients)		
	N	%		N	%		N	%		N	%		N	%		N	%		N	%
Pneumonia	717	41.3	Pneumonia	1065	40.8	Pneumonia	1129	44.8	Pneumonia	810	43.7	Pneumonia	2273	46.6	Pneumonia	2297	41.7	Pneumonia	2635	41.4
Skin and soft tissue infections	277	16.0	Skin and soft tissue infections	406	15.6	Skin and soft tissue infections	322	12.8	Skin and soft tissue infections	269	14.5	COVID-19	833	17.1	Skin and soft tissue infections	915	16.6	Skin and soft tissue infections	1010	15.9
Gastrointestinal infections	135	7.8	Gastrointestinal infections	156	6.0	Intra-abdominal infections	166	6.6	Intra-abdominal infections	151	8.2	Skin and soft tissue infections	447	9.2	Gastrointestinal infections	334	6.1	Gastrointestinal infections	414	6.5
Lower urinary tract infections	96	5.5	Lower urinary tract infections	154	5.9	Lower urinary tract infections	147	5.8	Sepsis	104	5.6	Obstetric/gynecological infections	262	5.4	Lower urinary tract infections	334	6.1	Lower urinary tract infections	394	6.2
Intra-abdominal infections	101	5.8	Upper urinary tract infections	153	5.9	Tuberculosis	145	5.8	Lower urinary tract infections	90	4.9	Lower urinary tract infections	221	4.5	Tuberculosis	312	5.7	Tuberculosis	359	5.6

Figure 1. Quality Indicators of antimicrobial prescriptions in adult wards (% of prescriptions) 2017-2023



CONCLUSION

Although the network of surveyed hospitals expanded over the years, there has been an overall increase in documentation of reason for antimicrobial use and guideline compliance between 2017 and 2023, but there is still room for improvement. Antimicrobial stewardship programs need to be strengthened further to improve documentation of stop or review dates, thereby facilitating de-escalation where appropriate, and optimising treatment duration.

Key words: Antibiotic stewardship (AMS), Public Health and surveillance, Quality indicators Acknowledgement: Pharmaceutical Division, Department of Health, Philippines

Scan for more info on Global-PPS