



The Global Point Prevalence Survey of Antimicrobial Consumption and Resistance (Global-PPS): Results of Antimicrobial Prescribing in 4 Guatemalan Hospitals in 2021

Herberth Maldonado^{1,4}, Brooke Ramay¹, Ann Versporten², Ines Pauwels², Herman Goossens², Alejandra Escobar³, Andrea Alvarado⁴, Diala Mudawar⁵, Ingrid Muj⁶, Jennifer Us⁷, Mario Melgar^{6,7}, Nancy Galvez⁷, Nuria Chavez³, Randall Lou⁷, Sonia Gil⁴, Stephany Muñoz⁷, Silvia Torres⁴, Sylvia Choi⁵, Nancy Sandoval³

¹Universidad del Valle de Guatemala, Guatemala City, Guatemala; ²Laboratory of Medical Microbiology, Vaccine and Infectious Diseases Institute, University of Antwerp, Antwerp, Belgium; ³Hospital Regional de Zacapa, Zacapa City, Guatemala ⁴Unidad de Cirugía Cardiovascular de Guatemala, Guatemala City, Guatemala ⁵ University of California San Francisco, United States ⁶Unidad Nacional de Oncología Pediátrica, Guatemala City, Guatemala ⁷Hospital Roosevelt, Guatemala City, Guatemala

Contact : haldonado@ces.uvg.edu.gt
nsandoval_paiz@hotmail.com



BACKGROUND & OBJECTIVES

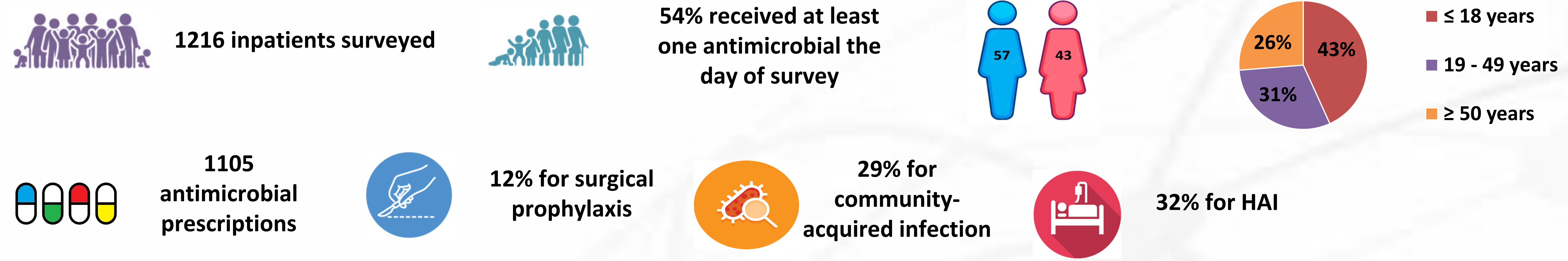
Antimicrobial resistance and healthcare-associated infections (HAI) are urgent threats across resource settings worldwide. A standardized method for surveillance of antimicrobial use in hospitals was used to assess antimicrobial prevalence and health-care associated infections in 4 hospitals in Guatemala.

METHODS

We conducted the Global-PPS in April, August, and November 2021. The survey included all inpatients receiving an antimicrobial on the day of PPS. Data collected included details on antimicrobial agents, reasons and indications for treatment, and a set of quality indicators. A web-based application was used for data entry, validation, and reporting (www.global-pps.com).

All hospitals implemented antimicrobial stewardship programs (ASP) supported by a quality improvement project. This included interventions for surgical prophylaxis, inappropriate use of broad-spectrum antibiotics, retrospective audit and feedback, education, and promotion of optimal antimicrobial use.

RESULTS



25% received microbiology-based treatment for multidrug-resistant organisms (MDRO)

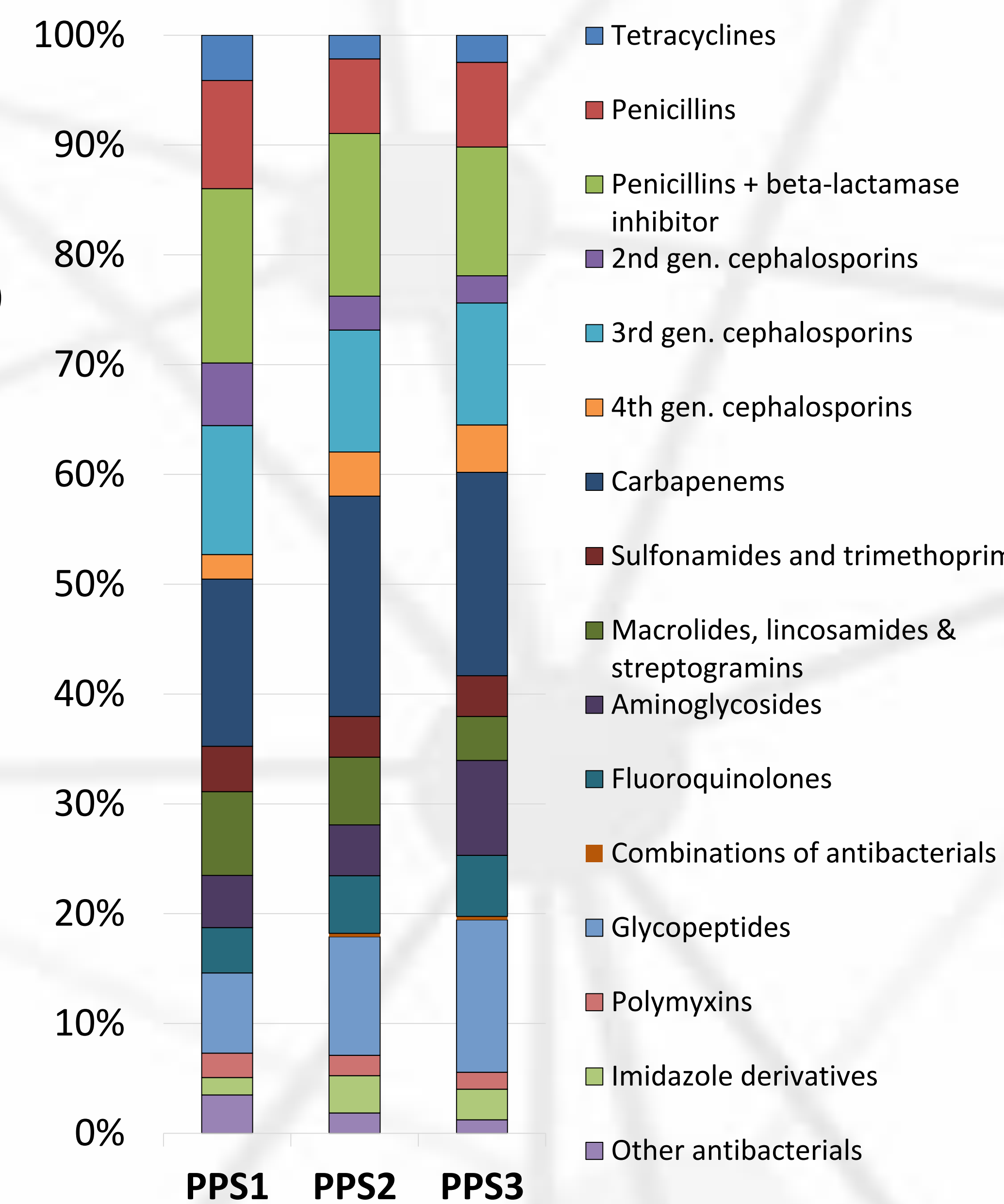
Antimicrobial Prevalence (%) by type of ward

	Adult wards (N=818)			Pediatric ward (N=316)			Neonatal ward (N=82)	
	Medical	Surgical	ICU	Medical	Surgical	ICU	Medical	ICU
PPS1	46.7	53.9	66.7	61.2	37.5	75.0	70.0	/
PPS2	35.2	50.8	73.7	52.7	0.0	82.1	32.1	100.0
PPS3	47.0	43.1	55.3	66.7	100.0	68.8	66.7	90.0

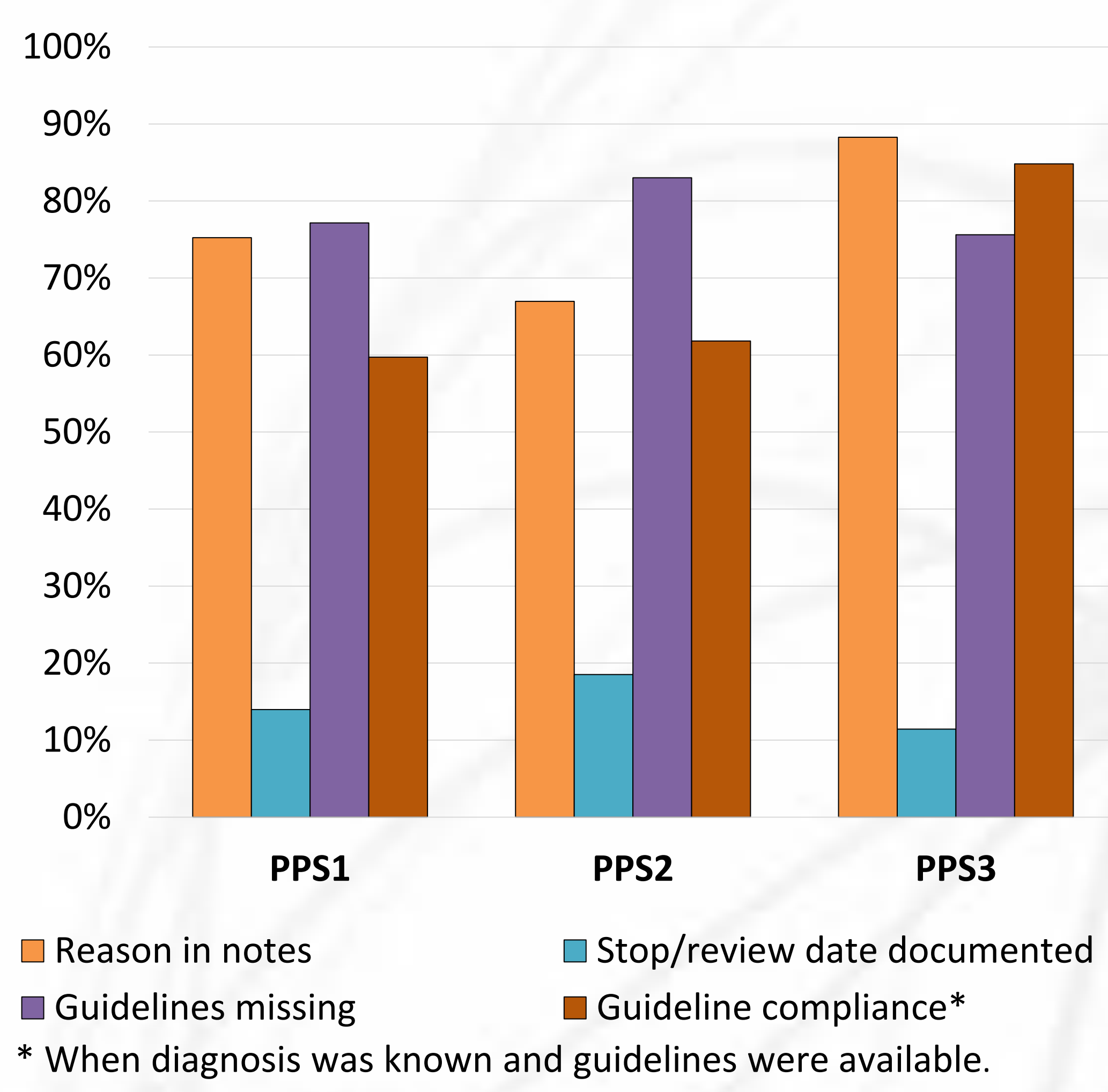
Most common antibiotics (% of prescriptions)

- Meropenem (13%)
- Vancomycin (11%)
- Ceftriaxone (10%)
- Piperacillin/tazobactam (8%)
- Ampicillin (6%)

Relative use of antibiotic (J01) subclasses



Quality indicators for antibiotic (J01) prescribing



Antibiotic (J01) use according to WHO AWaRe Classification

	Access	Watch	Reserve	Not recommended
PPS1 (n = 315)	37.5	52.7	9.8	0.0
PPS2 (n = 324)	32.4	59.6	7.4	0.6
PPS3 (n = 324)	34.0	59.5	5.6	0.6

Other key findings:

- Most frequent diagnosis for antimicrobial use: pneumonia (17%), skin and soft tissue infections (11%), intra-abdominal sepsis (6%).
- 18.3% patients were reported having at least one HAI.
- Prolonged surgical prophylaxis >1 day: 62%.
- Antifungals were prescribed for 9% of patients.

CONCLUSION

- Overall high antimicrobial prevalence was found in Guatemalan hospitals with high use of broad-spectrum antibiotics, many of which were aimed at treating MDRO infections and HAI.
- We observed a high use of antifungals which merits further investigation.
- The Global-PPS is valuable in supporting our ASP to identify antimicrobial misuse and HAI, and to further enhance antimicrobial stewardship and infection prevention and control interventions.

Disclosures: bioMérieux is the sole industrial partner of the Global-PPS. The company has no role in study design, data collection, data analysis, data interpretation, or writing the report. Data are strictly confidential and stored anonymously at the coordinating centre of the University of Antwerp. The project Smar Thrive of Antimicrobial Therapy (STAT-GT) was supported by the Antimicrobial Stewardship in the Latin American Region Grant #56248935 by Pfizer, and the International Society for Infectious Diseases (ISID).

