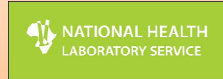




The Global Point Prevalence Survey of Antimicrobial Consumption and Resistance (Global-PPS) in The Outpatient Departments of a Gauteng Academic facility

Ms. A. Moolman², Prof. V Chabibhai^{1,3}, Dr. S Stacey¹ and Dr. T Thomas^{1,2}



1. Clinical Microbiology and Infectious Diseases Department at University of the Witwatersrand. 2. National Health Laboratory Services Charlotte Maxeke Complex, Infection Control Services. 3. National Institute of Communicable Diseases

Introduction

Local evidence-based guidelines and resistance patterns at the hospital level outpatient prescribing setting in low to middle - income settings are often lacking, impairing the optimal use of antibiotics. A systematic review by Sulis *et al* (2020) showed pooled prevalence proportion of antibiotic prescribing in low to middle income countries was 52% (95% CI: 51%–53%).¹ Drug-resistant bacterial infections (including tuberculosis) are estimated to cause at least 700,000 deaths globally each year. Estimates predict that by 2050, approximately 10 million deaths will occur annually due to drug-resistant bacteria (including tuberculosis), malaria, and HIV infections, with 90% of these deaths occurring in low- and middle-income countries (LMICs) in Africa and Asia.² In a ED department in Nepal the most common antibiotic used was ceftriaxone (34.1%) versus ampicillin (39%) as baseline in outpatient study conducted.³ The antimicrobial stewardship committee (AMS) of a South African academic facility conducted an outpatient Global Point Prevalence Survey (GPPS) in November 2024 to determine a baseline for outpatient stewardship initiatives.

Aim

This study aimed to describe the baseline prescribing practices in clinics and emergency settings in a tertiary-level, academic hospital.

Methods

The outpatient module of the Global-PPS was conducted among 15 outpatient clinics and 3 emergencies units, including adults and paediatrics. The survey included all outpatients seen on the day of the PPS. Data collected included details on the antimicrobial agents, reasons and indications for treatment and a set of quality indicators. GPPS protocol guidelines were followed for data collection. A web-based application <https://www.global-pps.com/documents/> developed by the university of Antwerp. was used for data entry and validation.

Results

Table 1: Antimicrobial Prescriptions per age group (Adult and Child)

	Total number of patients	Number of Treated patients	% Treated patients
Adult	412	27	6.6
Child	96	6	6.2
Total	508	33	6.5

Overall antimicrobial prescription prevalence was 6.5% of 508 patients surveyed. This varied by age group: 27/412 adult patients (6.6%) and 6/96 paediatrics (6.2%) were treated with at least 1 antimicrobial agent.

Table 4: WHO AWaRe classification

Overall antibiotic use	Number prescriptions	% Treated
Access	33	81
Watch		19
Adult		
Access	27	84
Watch		16
Children		
Access	6	100
Watch		

Based on the WHO AWaRe classification 22/27 (81%) access and 5/27 (19%) watch antibiotics were prescribed in adults, while only access antibiotics were prescribed to paediatrics 6/6 (100%).

Table 2: Antimicrobial prevalence by type of unit

Unit	Total Patients Survey	Number of Patients Treated	Watch	Access
EM	16	10		10
HO	74	4	1	3
ANC	3	3		3
OBST	26	3		3
GM	38	3	1	2
Medical OPD	50	2	1	1
TB HIV Clinic				
OPD	44	2		2
ENT	29			
GAS	57			
SM	16			

Total=overall prevalence for all units combined; ANC=Antenatal Care; EM=Emergency; ENT=Ear, Nose and Throat; GAS=Gastroenterology; GM=General Internal Medicine mixed; HIV/TB=Clinic; HO=Haematology; OB=Observation; OBST=Obstetrics; REN=Nephrology-urology; RESP=Respiratory; SM Surgical mixed

The most adult prescriptions that include antibiotics were from Emergency 10/27 (37%) followed by the Haematology unit 4/27 (14.8%). Most Antimicrobials prescribed were from the Access group 24/27 (88.8%) and Watch group 3/27 (11.1%)

The guideline-related quality indicators which can be improved upon such as antibiotic guideline non-compliance (2.2%), not indicating the duration of treatment (3%), and lacking prescribing the correct dose (3%) antimicrobial.

Table 3: Most common antibiotic prescribed

	Total number prescriptions	Number Treated Patients	% Treated
Penicillins	33	13	39
Tuberculosis treatment		8	23
Sulphonamides and Trimethoprim		5	16
Other antimicrobials		3	9
Nitromidazole derivatives		1	4
Other Beth-lactams		1	2
Macrolides, Lincosamides and Streptogramins		1	2
Aminoglycosides		1	2
Quinolones		1	2

Proportional antibiotic use below 0.5% is not reported
The most commonly prescribed antimicrobials included penicillin at 13/33 (39%).

Table 5: Guideline-related quality indicators for antimicrobial use

Quality indicators for antimicrobial use.	Total Prescriptions	% Treated
Availability of guidelines	33	71.7
Yes		2.3
No		13
Unknown indication when diagnosis is not known		13
Unknown or not available guidelines		
Drug name entered		
Yes		95.8
Dose		
Yes		95.7
Not available		3
Duration		
Yes		95.7
Not available		1
Route of administration		
Yes		100
Not available		3

Detailed information on compliance to the type of drug, dose and duration are only available if 'Availability of guidelines' equals 'Yes'. Information is shown for all antimicrobial prescriptions.

Discussion and Conclusion

The WHO AWaRe classification is a useful framework for evaluating the patterns of antimicrobial use and prescribing practices according to Access, Watch, Reserve antimicrobial usage. The Access choice includes first and second choice for empiric treatment of the most common infections and has a lower risk of resistance. The selection of antibiotics includes for example, amoxicillin, cefazolin, cloxacillin and clindamycin. The Watch choice of antimicrobial should be used for limited indications only due to its higher risk of resistance. The selection of antibiotics includes for example, quinolones and carbapenems. According to the WHO recommendation at least 60% of total antibiotic consumption should come from the Access group followed by 40% from the Watch group and not more than 10% from the Reserve group.⁴ Therefore, it is important to establish baseline data in the facilities' outpatient departments in LMIC facilities, to assist in identifying gaps in prescribing of antimicrobial agents. This study showed that most of the antibiotics that were prescribed represented the Access group (88.8%) followed by Watch group (11.1%). The effective use of clinical guidelines in LMIC facilities is greatly impacted by the contextualisation of clinical guidelines, end-user engagement and alignment of the implementation of clinical guidelines within the institutional arrangements in the broader health system.⁵ There is a lack of the optimal use of antimicrobial treatment guidelines as evidenced by prescribers being unaware of them. The AMS committee in this facility needs to create awareness on the available guidelines at adult clinics that can assist with antimicrobial prescribing and encourage its use in future. In addition, antimicrobial indications must be recorded always.

References and Funding

1. Sulis *et al*, (2020), Pubmed, 16:17(6): e1003139.

2. Gandra *et al*, (2020), Clinical Microbiology, 33:10.

3. Basnet *et al*, (2024), *Journal of International Medical Research*, 52(9).

4. Adam *et al*, (2019),The Lancet Global Health, 7(7): e861 - e871.5.

5. Saluja *et al*, (2022) Health research Policy and Systems, 20:98.

This research project was funded by the department of Clinical Microbiology and Infectious Diseases