



Quantity and quality of antibiotic prescribing for sepsis in hospitalised adults: results of the 2015, 2017 and 2018 Global Point Prevalence Survey of Antimicrobial Consumption and Resistance (Global-PPS)



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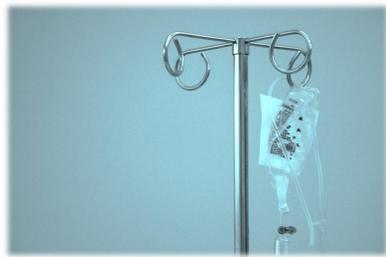
INTRODUCTION

Sepsis is a severe condition, requiring rapid initiation of antimicrobial therapy. We aimed to describe the quantity and quality of hospital antibiotic prescribing in adult sepsis patients throughout five continental regions.

METHODS

The Global-PPS (www.global-pps.com) assessed hospital antimicrobial prescribing patterns using a standardised and validated protocol. A total of 662 hospitals in 67 countries participated in a PPS of antimicrobial use at least once in 2015, 2017 or 2018. We descriptively analysed data for patients on systemic antibiotics (ATC J01), aged 18 years or older.

RESULTS



- Of 73,080 adults on systemic antibiotics, 2.6% were being treated for sepsis.
- Overall, 51.7% of sepsis cases were healthcare-associated.
- Figure 1 illustrates regional variations in healthcare-associated versus community-acquired sepsis.
- Of all healthcare-associated sepsis cases, 21.7% was related to the use of invasive devices.
- Microbiological results were used to inform treatment in 26.7% of prescriptions.

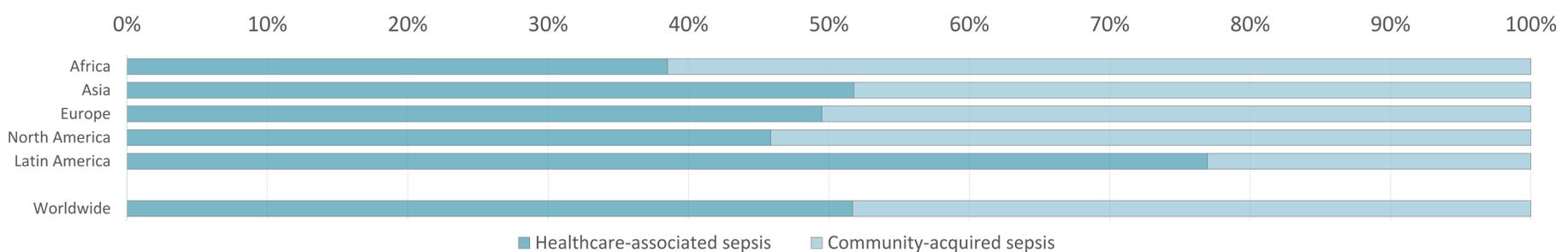


Figure 1: Proportion of healthcare-associated and community-acquired sepsis cases by UN region. Oceania was not included in the analyses.

Regional variations in treatment of sepsis

- The majority of adult sepsis patients (69.3%) was on single-agent therapy.
- Single-agent therapy for sepsis was highest in Europe (80.4%) and lowest in Latin America (48.7%).
- Overall, 12.1% of sepsis patients were being treated with one or more Reserve antibiotic, ranging from 7.7% in Africa to 25.6% in Latin America¹.
- Table 1 shows regional variations in treatment regimen.

Quality indicators

- A stop/review date for antibiotic therapy was documented for 35.9% of prescriptions.
- An indication for antibiotic therapy was written in the patient notes for 80.7% of prescriptions.
- Guideline compliance was reported to be up to 79.8%, yet guidelines were missing for 22.9% of prescriptions.

Africa (181 patients)		Asia (625 patients)		Europe (724 patients)		North America (195 patients)		Latin America (195 patients)		Worldwide (1920 patients)	
3 rd gen. cephalosporin	22.7%	Penicillin and inhib.	22.6%	Penicillin and inhib.	36.7%	Penicillin and inhib.	29.7%	Glycopeptide + carbapenem	14.4%	Penicillin and inhib.	25.7%
Carbapenem	10.5%	Carbapenem	16.2%	Carbapenem	10.6%	Penicillin and inhib. + glycopeptide	12.8%	Carbapenem	12.8%	Carbapenem	12.1%
Fluoroquinolone	9.9%	3 rd gen. cephalosporin	9.6%	3 rd gen. cephalosporin	7.0%	3 rd gen. cephalosporin	11.3%	3 rd gen. cephalosporin	10.3%	3 rd gen. cephalosporin	10.1%
Imidazole + 3 rd gen. cephalosporin	7.7%	Glycopeptide + Carbapenem	7.0%	Glycopeptide	6.5%	Glycopeptide	5.6%	Penicillin and inhib.	8.2%	Glycopeptide	4.9%
Penicillin and inhib.	7.2%	Glycopeptide	3.4%	Fluoroquinolone	5.1%	Carbapenem	5.1%	Penicillin and inhib. + glycopeptide	8.2%	Glycopeptide+ carbapenem	4.7%

Table 1: Most commonly prescribed therapeutic regimen (ATC level 4) for sepsis by UN region - as a percentage of sepsis patients. Oceania was not included in the analyses. Penicillin and inhib. = penicillin and β -lactamase inhibitor; 3rd gen. cephalosporin = 3rd generation cephalosporin

¹WHO, Model List of Essential Medicines, 20th edition, 2017

CONCLUSION

These data illustrate challenges related to antibiotic prescribing for sepsis patients, such as the use of broad-spectrum agents, low documentation of stop/review date, sub-optimal use of microbiology to inform treatment and a high proportion of Reserve prescribing. The use of Reserve antibiotics was particularly high in Latin America, with 1 in 4 sepsis patients exposed to these last-resort drugs. PPS results can support local stewardship teams in designing contextualised interventions, even for critical conditions such as sepsis.

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