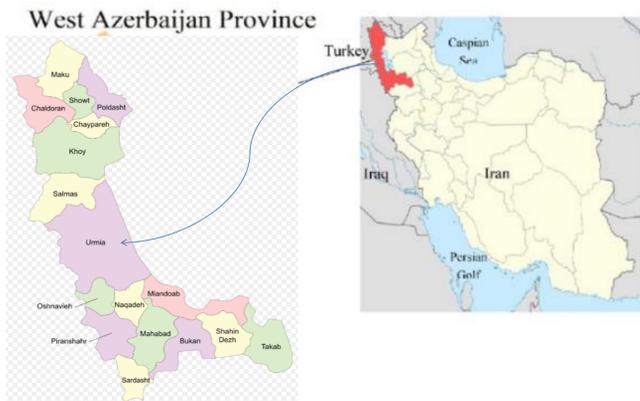


THE GLOBAL POINT PREVALENCE SURVEY OF ANTIMICROBIAL CONSUMPTION AND RESISTANCE (GLOBAL-PPS) RESULTS OF ANTIMICROBIAL PRESCRIBING FOR A GENERAL HOSPITAL IN URMIA, IRAN



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INTRODUCTION AND PURPOSE

We aimed to measure the prevalence of antimicrobial prescribing and address quality of the antimicrobial prescriptions in a general teaching hospital in Urmia, Iran.

METHODS

We used a uniform and standardized method to survey antimicrobial use in hospitals (www.global-pps.com). The PPS was conducted in two separate studies in June-July 2018 and October-December 2018. The survey included all inpatients receiving an antimicrobial on the day of the 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 was used for data entry, validation, and reporting as designed by the University of Antwerp (www.global-pps.com). We present overall antibiotic (ATC code J01) prevalence's, merging the two periods.

RESULTS

- ❑ The overall antibiotic prevalence was 47.3% (238 out of 503 admitted inpatients) with highest rates observed among neonatal wards (70.6%; 60/85 admitted neonates), followed by paediatric wards (59.0%; 115/195 admitted children) and adult wards (25.7%; 53/206 admitted adults) (Figure 1). Figure 2 provides a detailed overview of the prevalence's observed for the different paediatric and neonatal ward types.
- ❑ The most prescribed antibiotics in paediatric wards were third-generation cephalosporins (J01DD; 60.6% of which mainly ceftriaxone (72.0%) and ceftizoxime (23.0%)). The most prescribed antibiotic in neonatal wards was a beta-lactam penicillin with extended spectrum, namely ampicillin (36.1%), mainly in combination with gentamicin (25.2%).
- ❑ The three most common diagnosis for which antibiotics were prescribed in paediatric wards included gastro-intestinal surgical prophylaxis (24.2%), treatment of lower and upper urinary tract infections (15.2%), and pneumonia (13.9%). In neonatal wards, antibiotics were mainly prescribed as medical prophylaxis for maternal risk factors (76.5%).

Figure 1. Overall antibiotic prevalence for adults, paediatric and neonatal wards

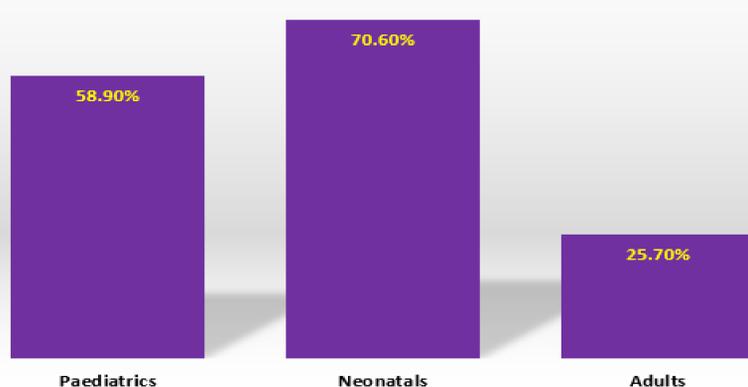
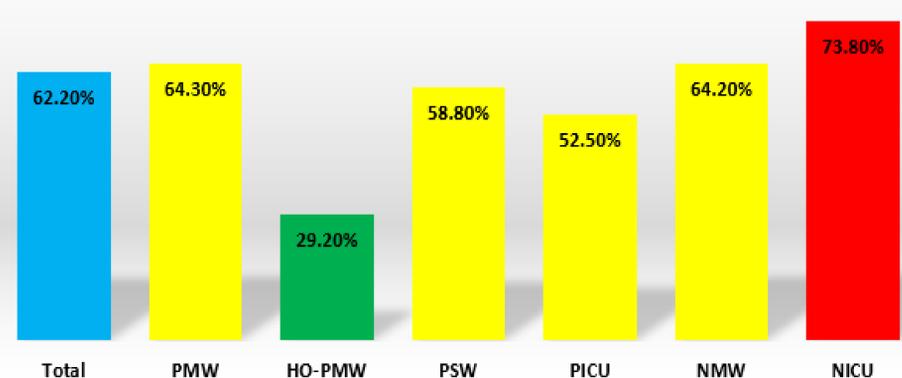


Figure 2. Overall antibiotic prevalence for child and neonatal wards



Antibiotic quality Indicators

- ❑ Overall, the reason for treatment was recorded in 80.1% (289 out of 361) prescriptions, and a stop or review date in 11.6% (42 out of 361) prescriptions. Local antibiotic guidelines were most often missing for prescriptions administered in adult and paediatric wards. Guideline compliance was high. Table 1 provide an overview of antibiotic quality indicators for adult, paediatric and neonatal wards.
- ❑ None of the patients received a targeted antibacterial treatment for systemic use.

PMW: Paediatric Medical Ward, HO-PMW: Hematology–Oncology PMW, PSW: Paediatric Surgical Ward, PICU: Paediatric Intensive Care Unit, NMW: Neonatal Medical Ward, NICU: Neonatal Intensive Care Unit

	Reason in notes (%)	Stop/review date (%)	No guidelines existing (%)	Guideline compliance (%)
Adult wards (n=75)	65.3	0	97.3	100 (n=2/2)
Paediatric wards (n=167)	74.9	23.4	74.9	92.9 (n=39/42)
neonatal wards (n=119)	96.6	2.5	42.9	95.6 (n=65/68)

Table 1. Summary of antibiotic quality indicators for adult, paediatric and neonatal wards
(n=number of antibiotic prescriptions)

CONCLUSION

Overall antibiotic prevalence rates in neonatal and paediatric wards in this general hospital in Urmia in Iran is remarkably high with observed high broad spectrum antibiotic prescribing of mainly third-generation cephalosporins among children. Areas to improve antibiotic prescribing include the absence of empiric antibiotic guidelines. The initiation of an intervention promoting the implementation of a stop/review date should be part of a tailored antimicrobial stewardship program in the hospital in order to prevent prolonged unnecessary antibiotic use.