

D. GREGA^{1, 2}, T. PARKS^{2, 3} and H. MLČOCHOVÁ²

¹Department of Applied Pharmacy, Faculty of Pharmacy, Masaryk University, Brno, the Czech Republic
²Health Economics, Policy, and Innovation Institute (HEPII), Faculty of Economics and Administration, Masaryk University, Brno, the Czech Republic
³Department of Public Economics, Faculty of Economics and Administration, Masaryk University, Brno, the Czech Republic



OBJECTIVE

The analysis aims to ascertain how much money is saved when antibiotic referencing is discontinued, and a defined percentage reimbursement rate is established.

INTRODUCTION

Antibiotic resistance became a major driving force behind the development of antibiotics (1). Excessive use of antibiotics is an essential factor leading to antibiotic resistance (2). The yearly epidemiological study on antimicrobial consumption in the EU/EEA reveals that Slovakia will have one of the highest consumptions in 2022, with exceptionally high consumption of macrolides, lincosamides and streptogramins(J01D), as well as cephalosporins and other beta-lactams (J01F) (3). In Slovakia, the proportion between the co-payment and the insurance company’s payment for antibiotics was previously regulated by the decree of the Ministry of Health (4).

METHOD

- The National Centre for Health Information's (NCZI) dataset was used to analyse the usage of the twelve most common antibiotics from 2018 to 2022
- The most prevalent diseases were determined from the same dataset for analysed antibiotics
- The identification of the antibiotics was made possible by using the ATC codes and the special code (ŠUKL code) of each package available in Slovakia
- The final cost, reimbursement, and patient co-payment for each package during an investigated period were identified using the SUKL code
- The cost was taken from the List of Reimbursed Medical Products dataset, which is updated monthly

RESULTS

Between 2018 and 2022, the payment amount for antibiotics from public health insurance reached €11.3M in 2020 to €19.2M in 2022. Savings between €1.8M to €2.7M can be achieved if a 50:50 set reimbursement ratio between the insurance company and the patient is implemented. Savings between €6.5M to €10.9M for healthcare payers can be achieved if the insurance company-to-patient ratio were 25:75. Among all the disorders assessed for which antibiotics were suggested, the ten most common diseases accounted for 76–82% of cases annually. Roughly thirty per cent of all illnesses were caused by upper respiratory tract infections and acute bronchitis.

Table 1. Potential savings recalculation in €

	2018	2019	2020	2021	2022
Current situation					
a) Final price	30,022,809	29,783,072	18,931,993	23,061,278	33,509,187
b) Reimbursement	17,637,264	17,604,362	11,281,177	13,516,181	19,283,359
b) Co-payment	12,385,546	12,178,709	7,650,816	9,545,096	14,225,828
The situation with the fixed 50% reimbursement of the health insurance company					
d) Reimbursement	15,011,405	14,891,536	9,465,996	11,530,639	16,754,594
e) Co-payment	15,011,405	14,891,536	9,465,996	11,530,639	16,754,594
The situation with the fixed 25% reimbursement of the health insurance company					
f) Reimbursement	7,505,702	7,445,768	4,732,998	5,765,319	8,377,297
g) Co-payment	22,517,107	22,337,304	14,198,995	17,295,958	25,131,890
Potential savings					
Reimbursement b) - d)	2,625,859	2,712,827	1,815,180	1,985,543	2,528,765
Reimbursement b) – f)	10,131,561	10,158,595	6,548,179	7,750,862	10,906,062

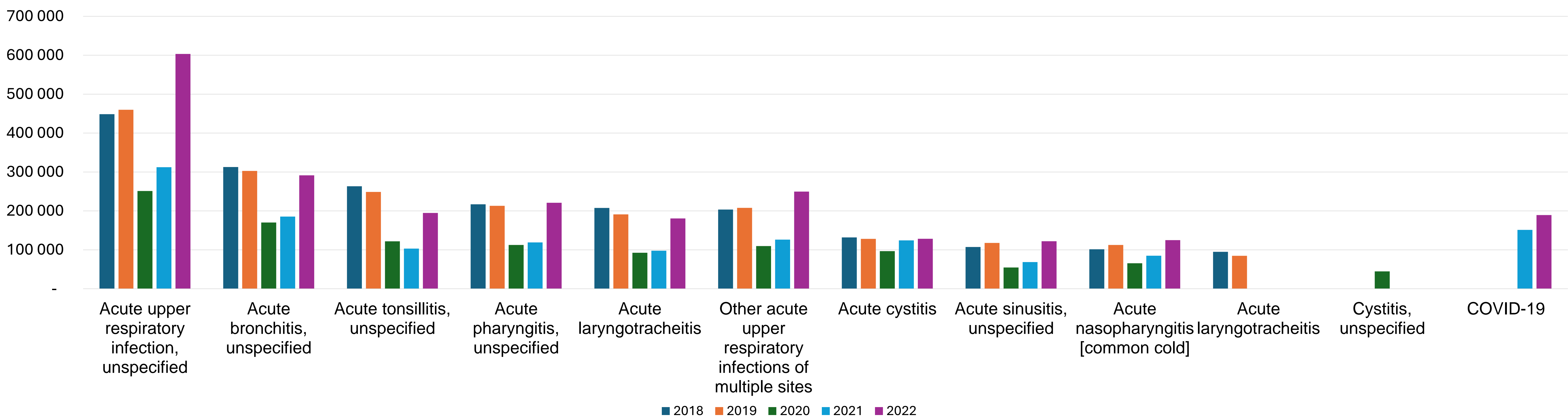


Figure 1. The most prevalent diseases for analysed antibiotics

CONCLUSIONS

It is feasible to divert the saved funds toward paying for novel, cutting-edge medications by establishing a set ratio between the patient's and the insurance company's reimbursement. Raising the price of antibiotics might discourage overuse. The increase in co-payments must not affect chronic patients because they represent a small percentage of the total, and their consumption is necessary for health. It is best to establish a separate payment group for chronic patients.

REFERENCES

1. Gould K. Antibiotics: from prehistory to the present day, Journal of Antimicrobial Chemotherapy, Volume 71, Issue 3, March 2016, Pages 572–575, <https://doi.org/10.1093/jac/dkv484>.
2. Shallcross LJ, Davies DS. Antibiotic overuse: a key driver of antimicrobial resistance. Br J Gen Pract. 2014 Dec;64(629):604-5. doi: 10.3399/bjgp14X682561.
3. European Centre for Disease Prevention and Control. Antimicrobial consumption in the EU/EEA (ESAC-Net) - Annual Epidemiological Report for 2022. Available at: <https://www.ecdc.europa.eu/sites/default/files/documents/AER-antimicrobial-consumption.pdf>.
4. Ministry of Health of the Slovak Republic. Decree No 435/2011 Coll. on the method of determining the standard dose of a drug and the maximum amount of reimbursement by the health insurance company for a standard dose of a drug.