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<https://doi.org/10.1016/j.aprim.2017.09.006>
0212-6567/

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Respuesta de los autores



Author's reply

Dear Editor,

Although unrelated to the main paper, this letter addresses an important topic: how monitoring of antibiotic consumption should be carried out and what measurement systems a country should provide when submitting the antibiotic consumption data. I agree that two different indicators should always be calculated: the defined daily dose (DDD) per 1000 inhabitants per day (DID, *DHD in Spanish*) and the number of packages per 1000 inhabitants per day (PID, *EMHD in Spanish*). There are some reasons for considering both types of data. Bruyndockx et al. found that the latter indicator was more clearly associated with the proportion of pneumococcal non-susceptible strains isolated than DID.¹ In some countries, including Spain, DID and PID are increasingly differing which is mainly explained by the increasing numbers of DDDs per package, driven by increasing doses per unit of the two penicillin antibiotics (amoxicillin and co-amoxiclav) and bigger pack sizes (30 pills instead of the classic 24 pills). When it comes to beta-lactams, PID is not increasing at the European level but, conversely, DID is.² Therefore, having information about both DID and PID better monitors the trend of antibiotic consumption along the years.

This letter considers monitoring the antibiotic consumption with the use of only reimbursement data by the social security system as suggested by the *Agencia Española del Medicamento y Productos Sanitarios*. However, reimbursement data only gives partial information of the actual consumption. Campos et al. found that the disparity found between reimbursement data by the social security system and sales data was approximately 30% in 2002, 2004 and

2005.³ This difference between the two indicators is mainly explained by the over-the-counter sales of antibiotics, private health insurance (mainly in dentistry), pet veterinary prescriptions and other non-reimbursed courses. If we consider the latest consumption data published in 2016, antibiotic consumption in Spain was close to the average for European countries, a bit more than 22 DID, but it only provided reimbursement data.⁴ According to the *Agencia Española del Medicamento y Productos Sanitarios*, the overall antibiotic consumption in 2016 was approximately 33 DID, of which 11-one third-corresponded to non-reimbursed sales (unpublished data). It means that Spain would be in the top five antibiotic consumers among European countries. Portugal and Spain are the only countries providing reimbursement data whereas the rest of the European countries provide sales data, making the comparison across countries misleading.

Antimicrobial resistance is a major health problem that is mainly caused by antibiotic consumption as a whole and does not distinguish from reimbursement data and other non-reimbursed data. Reimbursement data are clearly different from sales data in Spain and, since these data are not always available we clearly advocate that the Iberian countries could accordingly change the data given and monitor the trend of antibiotic consumption with the utilisation of the whole antibiotic consumption data instead.

Conflicts of interest

I report receiving research grants from the European Commission (Sixth & Seventh Programme Frameworks and Horizon 2020), Catalan Society of Family Medicine, *Instituto de Salud Carlos III* and Alere.

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<https://doi.org/10.1016/j.aprim.2017.09.008>
0212-6567/

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