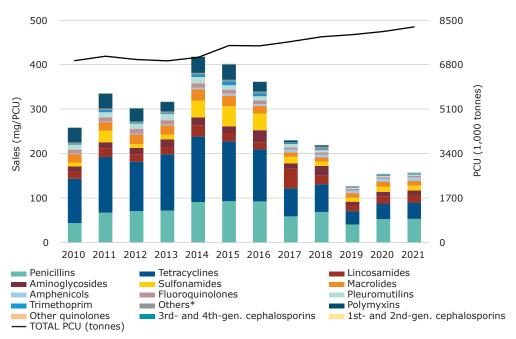
Sales trends (mg/PCU) of antibiotic VMPs for food-producing animals

Sales trends by antibiotic class (mg/PCU) from 2010 to 2021^{1,2,3}

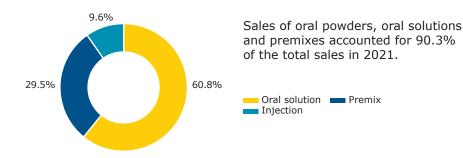


- ¹ Sales data sorted from highest to lowest in 2021.
- ² No sales of other quinolones were reported in 2018, 2019 or 2020.
- ³ From 2010 to 2013, sales are underestimates due to underreporting.
- * The class 'Others' includes sales of bacitracin, rifaximin and spectinomycin (classified as other antibacterials in the ATCvet system).

Since 2011:

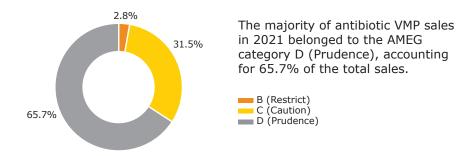
- 53.2% overall annual sales (from 335.8 mg/PCU to 157.2 mg/PCU in 2021)
- 24.0% 3rd- and 4th-generation cephalosporin sales (from 0.26 mg/PCU to 0.33 mg/PCU in 2021)
- 63.8% fluoroquinolone sales (from 9.2 mg/PCU to 3.3 mg/PCU in 2021)
- 36.1% other quinolone sales (from 0.60 mg/PCU to 0.38 mg/PCU in 2021)
- 98.8% polymyxin sales (from 33.5 mg/PCU to 0.39 mg/PCU in 2021)
- The PCU increased by 15.8% between 2011 and 2021

Proportion of sales (mg/PCU) by product form in 20211



 $^{\scriptscriptstyle 1}$ Sales of oral powders and other forms (intramammary, intrauterine, bolus and oral paste products) are not included in the figure and represent <0.01% and 0.1% of total sales, respectively.

Proportion of sales (mg/PCU) by AMEG categories in 2021



2021 sales data

In 2021, overall sales increased by 1.9% in comparison to 2020 (from 154.3 mg/PCU to 157.2 mg/PCU). The three highest selling antibiotic classes were penicillins, tetracyclines and lincosamides, which accounted for 33.8%, 23.2% and 10.1% of total sales, respectively.



Country information

Spain's datasets and data collection systems were changed during the period of participation in the ESVAC project under observation. From 2010 to 2016, datasets included sales of antimicrobial VMPs declared by MAHs, but in 2014 Spain changed its sales data collection system. From 2017, the reported data also includes sales by retailers, pharmacies and feed mills, representing sales closer to the end-users. The collection system is currently being updated. In addition, underreporting was identified for the years 2010 to 2013. On account of this (along with other factors), the data for these years are underestimates. Due to these differences, data from the periods of 2010–2014, 2014–2016 and 2017–2020 are not directly comparable and observations regarding trends should be made with caution.

Notwithstanding the foregoing, the highest annual sales during the period under observation (2010–2021) were registered in 2014, while the lowest were recorded in 2019. The overall decline in sales is attributed to the adoption of the Spanish National Plan against Antibiotic Resistance¹ in June 2014, recently updated for 2019–2021. The plan is based on six strategic lines across the veterinary, human and environmental sectors. These strategic lines aim at promoting appropriate antimicrobial use, ensuring effective surveillance systems, promoting research and innovation and developing different awareness-raising campaigns.

Within the specific activities focused on the prudent use of antimicrobials in animals that were carried out, the implementation of voluntary reductions in the use of antibiotics (mainly those included in AMEG category B) in the different food-producing species was particularly successful, known as 'PROGRAMAS REDUCE'. For instance, a voluntary reduction in colistin of 99% in the pig sector was achieved.

Other remarkable initiatives led by the Spanish National Plan were the development of Veterinary Therapeutic Prescription Guidelines to promote antimicrobial stewardship, and the creation and implementation of a Spanish Surveillance Network for bacterial pathogens from diseased animals. This activity also enabled setting up an interactive map where veterinary practitioners and other stakeholders are able to see trends and resistance profiles of different pathogens of interest. Moreover, different training activities were provided for veterinarians, farmers and the general public. All the above contributed to an overall reduction in antimicrobial VMP sales in Spain.

¹ http://www.aemps.gob.es/publicaciones/publica/home.htm