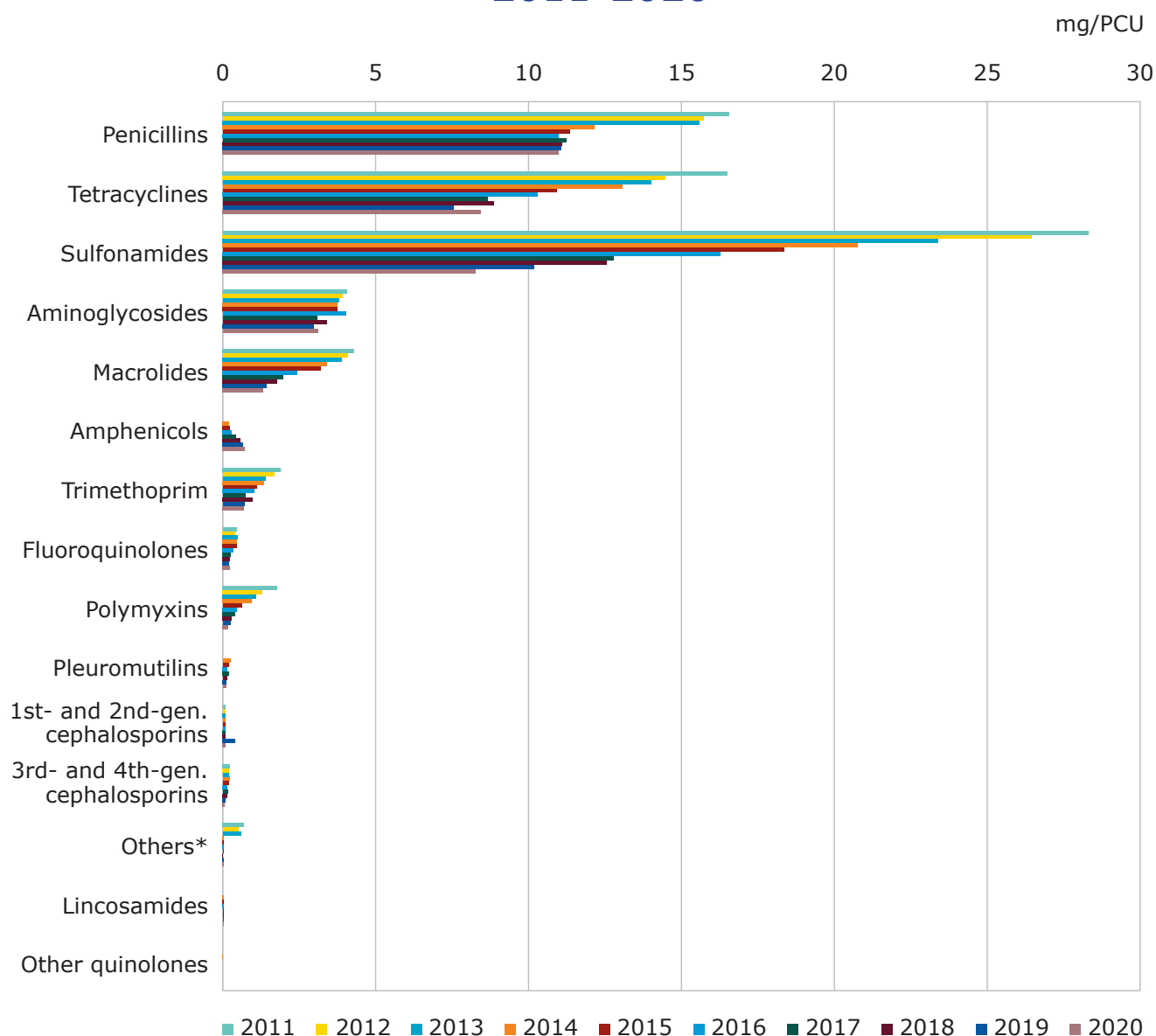




## SALES TRENDS (MG/PCU) OF ANTIMICROBIAL VMPs FOR FOOD-PRODUCING ANIMALS

2011-2020



From 2011 to 2013, for reasons of confidentiality, amphenicols, other quinolones and pleuromutilins are grouped with 'Others' and lincosamides are grouped with macrolides.

Data for 2011–2013 have not been submitted to the ESVAC database and changes to conversion factors are not reflected in these years. The data were provided by the country and can be retrieved from the 2011–2013 (third–fifth) ESVAC Report in Annex 9.

\* The class 'Others' includes sales of the following sub-classes: Imidazole derivatives (metronidazole) and Other antibacterials (spectinomycin). Of note is that some of the sales could be for non-food-producing animals.

Since 2011, sales of almost every antimicrobial class have decreased in Switzerland and total sales declined by 54.2% from 2011 (74.8 mg/PCU) to 2020 (34.3 mg/PCU).

In comparison to 2014, when Switzerland adhered to the ESVAC protocol requirement, decreases were observed in sales of the three highest-selling antimicrobial classes: sulfonamides (60.1%), penicillins (9.7%, out of which 53.6% were beta-lactamase sensitive penicillins) and tetracyclines (35.3%). In 2020, these classes represented 24.1%, 32% and 24.6%, respectively, of total antimicrobial sales.

Between 2014 and 2020, sales of amphenicols and 1st- and 2nd-generation cephalosporins increased by 251.9% and 26.2%, respectively, but have remained relatively low over the years (<0.75 mg/PCU). In 2019, sales of 1st- and 2nd-generation cephalosporins peaked at 0.41 mg/PCU but decreased by 76.7% in 2020 (0.10 mg/PCU).

Sales of 3rd- and 4th-generation cephalosporins decreased by 66.8%, from 0.23 mg/PCU in 2011 to 0.07 mg/PCU in 2020, representing 0.2% of total antimicrobial sales in 2020. Aggregated sales for the 25 countries were 0.16 mg/PCU. The strongest decrease in sales of 3rd- and 4th-generation cephalosporins was observed from 2018 (0.15 mg/PCU) to 2019 (0.09 mg/PCU). This continuous decline is a long-term effect of the change in the Swiss legislation in 2016 forbidding stock delivery of products containing highest priority critically important antimicrobials. Since then, such products may only be applied by the treating veterinarian but cannot be delivered in stock to the animal owner.

The restrictions introduced in 2016 also apply to fluoroquinolones, with sales decreasing in absolute numbers from 0.45 mg/PCU in 2011 to 0.24 mg/PCU in 2020 and in relative terms by 47.2%. Although fluoroquinolones represented only 0.7% of total antimicrobial sales in 2020, a small increase in sales was observed in comparison with 2019 (0.21 mg/PCU). The most significant reduction in sales (0.13 mg/PCU) was observed between 2015 and 2016.

Products containing macrolides — very often premixes — are subject to the same restrictions described for fluoroquinolones and 3rd- and 4th-generation cephalosporins. Sales thus declined by 61.5% from 2011 (4.29 mg/PCU) to 2020 (1.32 mg/PCU).

Apart from other antimicrobials, polymyxins — which are exclusively sold and used as colistin in food-producing animals — achieved the highest reduction in sales (89.6%) of all antimicrobial classes on sale in Switzerland, from 1.78 mg/PCU in 2011 to 0.18 mg/PCU in 2020, representing 0.5% of total sales. From 2019 (0.25 mg/PCU) to 2020, sales decreased by 27.2%. Under current Swiss legislation, colistin is not subject to the same restrictions as 3rd- and 4th-generation cephalosporins and fluoroquinolones and can still be stock-delivered to (mainly pig) farmers. The strong reduction in colistin sales therefore might be linked to an increased awareness among veterinarians (through continuing education) and farmers about antibiotic use and its effects and also to the introduction and extensive use of vaccines against both porcine circovirus and Lawsonia infections, which have reduced the occurrence of diarrhoea and hence the need to treat secondary bacterial infections.

Total PCU fluctuated during the years under investigation, decreasing between 2014 and 2017, increasing in 2018 and 2019 and decreasing again in 2020. The overall decrease in sales (in mg/PCU) in the years under investigation is mainly linked to a reduction of use, mostly in pigs and calves treated as a group. As expected, two of the three top sellers (tetracyclines and sulfonamides) are mainly used in the form of premixes, very often in combination with a macrolide. The use of such premixes showed a sharp decline following the interdiction of stock delivery. A decrease in individual treatments with critical antibiotics is also observed. In the context of the national strategy on antimicrobial resistance (StAR), with the development of guidelines on the prudent use of antimicrobials in cattle/calves, pigs and companion animals, vaccination campaigns and strengthened continuing education, management measures are being promoted and the restrictions introduced in 2016 are continuously monitored. As of 2019, veterinarians are also legally required to declare every antibiotic treatment performed, either as group or individual therapy, in food-producing animals as well as in horses or companion animals. This mandatory declaration to a central database may partly explain the overall decrease in sales (in mg/PCU and in tonnes) observed for the years 2019 and 2020 following a slight increase in 2018. This increase was partly due to the switch to use of higher doses of older-generation antibiotics instead of the critical antibiotics affected by the restrictions introduced in 2016.

All of the measures taken have strongly contributed to decreased sales of premixes and hence, the overall decrease in sales.

Of note is that sales of antimicrobials for veterinary use reported by Switzerland are considered to be slightly overestimated, as data also cover trade in Liechtenstein, although no animal data characterising Liechtenstein are covered in the denominator currently used for analysis. Consumption of antimicrobials for veterinary use in Liechtenstein is considered to be very low.

