



## PAPER

# Antibiotics used most commonly to treat animals in Europe

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## Context

The use of antibiotics in animals is under close scrutiny; in particular, use of those antibiotics defined by the World Health Organization as being critically important antibiotics (CIAs) for use in people. The CIAs that are used in animals are (fluoro)quinolones, third- and fourth-generation cephalosporins and macrolides.

While the European Surveillance of Veterinary Antimicrobial Consumption (ESVAC) Report details the total sales of antibiotics for use in animals, there is limited information available on prescribing practices or the use of antibiotics in animals in Europe. In order to support responsible antibiotic use in animals, intervention strategies must be targeted to the correct areas. To inform such strategies, it is necessary to have a better understanding of the species and diseases in which different antibiotics, and particularly CIAs, are used. This study aimed to provide more information on this topic.

## Main conclusion

Many older antibiotics are cited as the most frequently prescribed classes used to treat the main food-producing species. There is variation in treatment strategies and CIA use between countries, which may be due, in part, to national guidance/policies, preferences, national customs and practice, but may also be a reflection of the availability of antibiotics and alternative treatment options.

## Approach

The Heads of Medicines Agencies and the Federation of Veterinarians of Europe (FVE) undertook a web-based survey. FVE member organisations made their members aware of the survey through their national newsletters, websites and social media channels. There was no active recruitment and particular veterinarians were not targeted, neither was participation incentivised. Veterinarians were asked to specify, using free text, the five most common antibiotics/species/indication combinations that they used. The survey, which was available in five languages, was completed by 3017 practitioners practising in 25 European countries. The data were analysed first at species level and were subdivided when appropriate (for example, cattle/calves), secondly by indication, and thirdly by antibiotic

classes, which were subdivided into CIAs and non-CIAs. Analysis was done at a country level for Belgium, France, Germany, Spain, Sweden and the UK – countries for which there were sufficient responses (at least 50 responses per species per country).

## Results

CIAs were most frequently found to be prescribed for: urinary diseases in cats (62 per cent), respiratory diseases in cattle (45 per cent), diarrhoea in cattle and pigs (29 per cent and 34 per cent, respectively), locomotion disorders in cattle (31 per cent), postpartum dysgalactia syndrome complex in pigs (31 per cent) and dental disease in dogs (27 per cent). There were differences in the extent and circumstances of use of CIAs in the countries considered. In Sweden, for example, veterinarians rarely cited CIAs whereas German veterinarians cited CIAs more frequently.

## Interpretation

The survey was not based on a random selection of practitioners, but instead relied on practitioners volunteering to answer the survey. This may have introduced a degree of bias into the results, with those responding more likely to be interested in antibiotic resistance. While the responses cannot be used as a quantitative measure of the relative use of the different antibiotics, they do provide a broad insight into the different classes of antibiotics that are used for different indications.

In order to have a true and accurate picture of the different extent and circumstances of antibiotic use by veterinarians across the European Union (EU) it will be necessary to develop a standardised EU-wide system to monitor and report antibiotic use, something the European Commission and ESVAC are considering.

## Significance of findings

This study highlights the therapeutic areas that should be targeted if the total amount of CIAs or total antibiotics used is to be reduced, including diarrhoea in calves and pigs.

The differences observed between countries indicate that the use of national formularies and guidance can help to drive the responsible use of antibiotics and can significantly reduce the use of CIAs.

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