



Veterinary
Medicines
Directorate

High level summary of the Veterinary Antibiotic Resistance and Sales Surveillance Report (UK-VARSS)

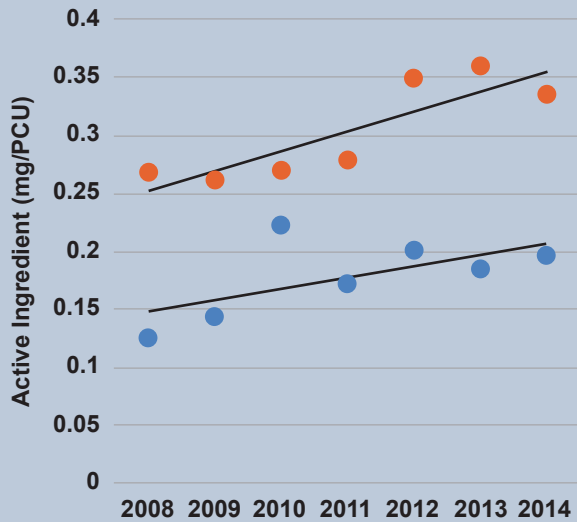
2014

At a glance - antibiotic sales data

Overall trends

Critically Important Antibiotics*

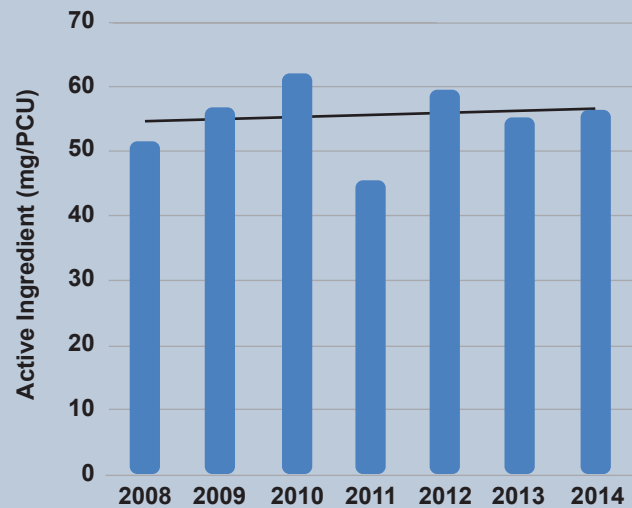
● Fluoroquinolones ● 3rd/4th Gen Cephalosporins



Tonnes of active ingredient sold



Total antibiotic sales (mg/PCU)*

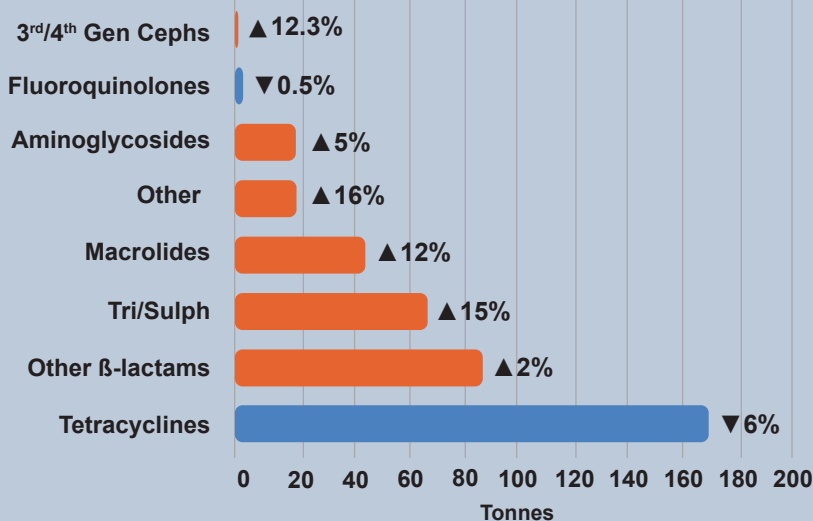


* based on active ingredient sold for use in food producing animals only (excluding horses)

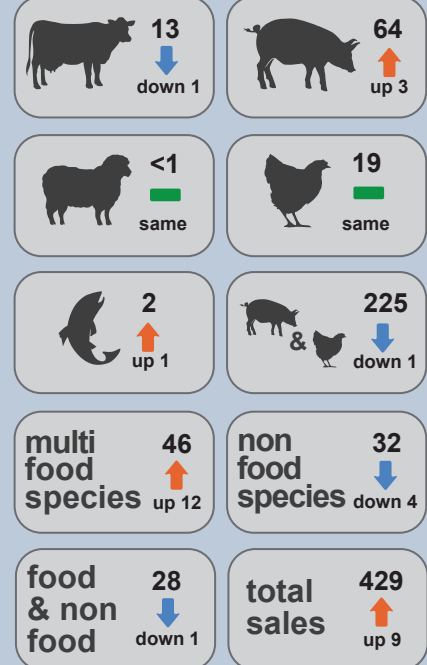
— Trend

2013-2014 comparison

Tonnes of active ingredient sold for all animals

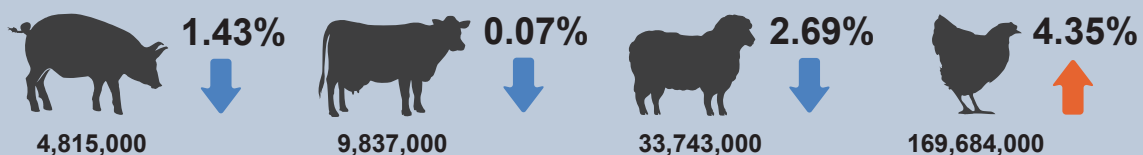


Sales in tonnes



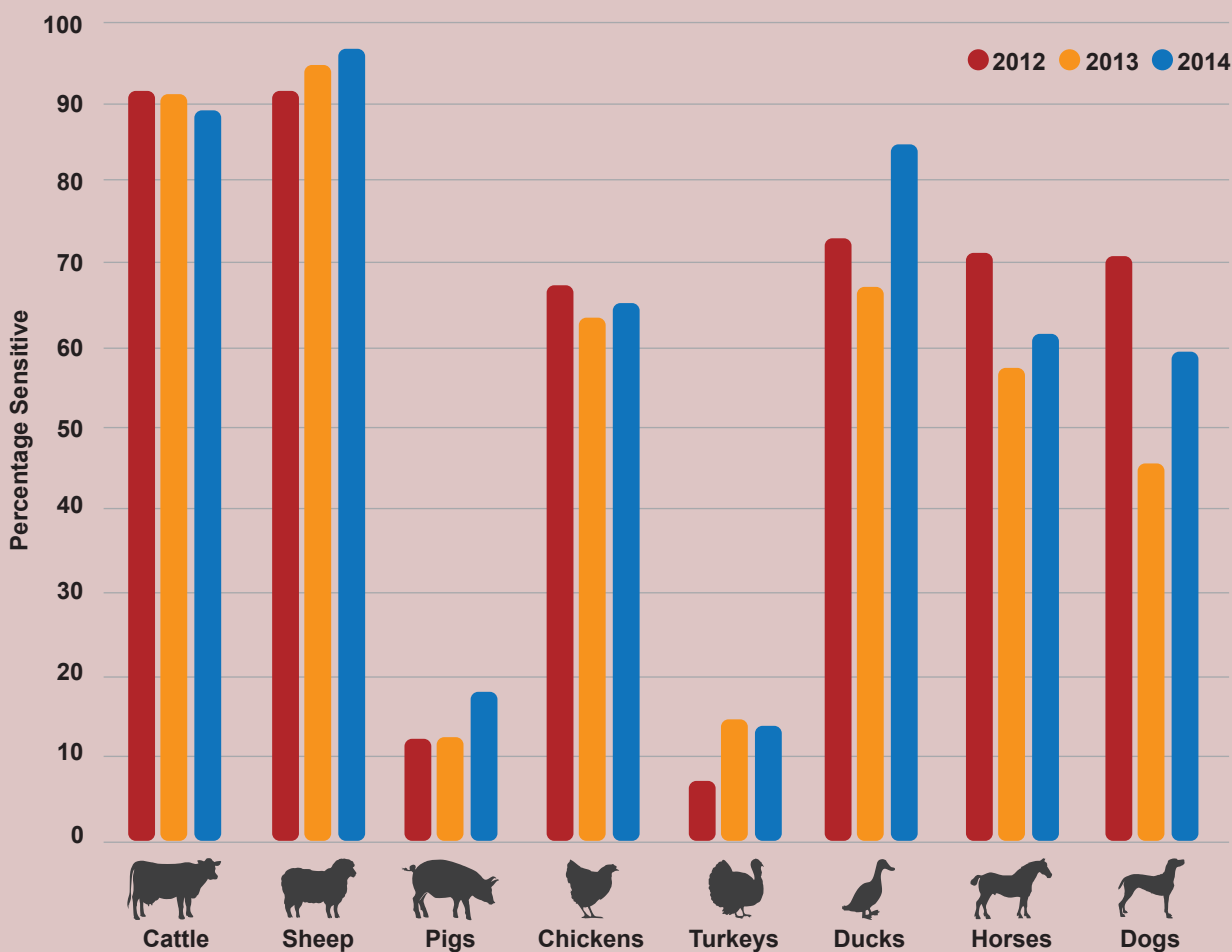
Livestock production in the UK

Source: Defra agricultural survey



At a glance - antibiotic susceptibility data

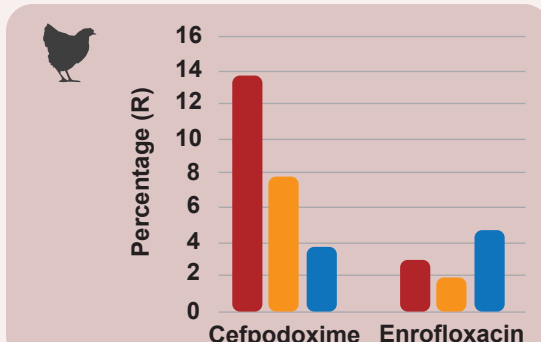
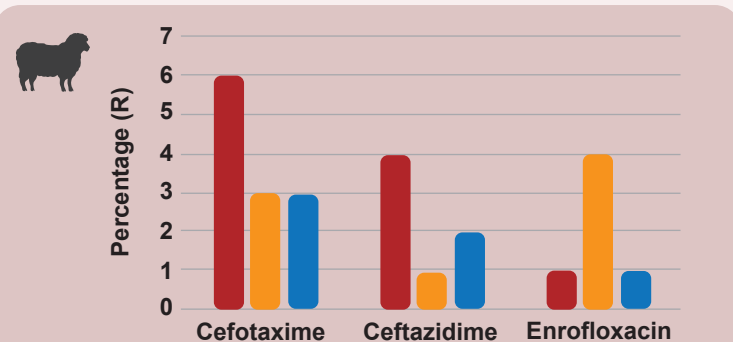
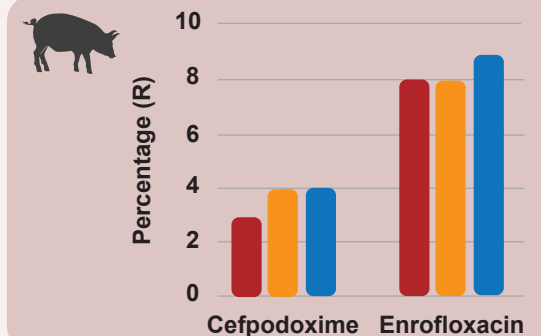
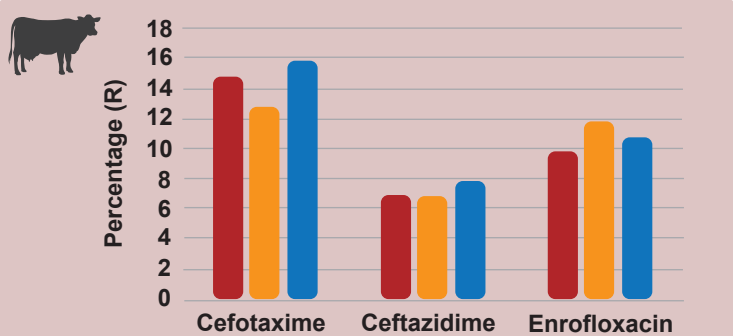
Percentage of *Salmonella* isolates sensitive to all antibiotics



Percentage resistance (R) in *E. Coli*

for 3rd/4th gen cephalosporins (Cefotaxime, Cefpodoxime & Ceftazidime) and fluoroquinolones (Enrofloxacin)

● 2012 ● 2013 ● 2014



Background to antibiotic resistance & sales data

How sales data are collected?

In the UK the quantity of antibiotics sold for use in animals has been reported to the VMD by pharmaceutical companies since 1998. Initially data were provided on a voluntary basis, but since 2005 it has been a statutory requirement. The data represented do not take into account wastage, imports or exports of veterinary antibiotics. However, they serve as the best currently available approximation of the quantity of antibiotics administered to animals in the UK.

Antibiotic sales data have many limitations and are not suitable for assessing use in each species. Consumption data, i.e. the amount of antibiotics purchased, prescribed and/or administered, have the potential to provide much more precise estimates. The VMD is currently working in partnership with key livestock sectors to develop a system for the collection of antibiotic consumption data in food producing animals, facilitating and coordinating sector-led collection systems for the priority livestock sectors (pigs, poultry and cattle).

What is the Population Correction Unit (PCU)?

Since total annual tonnage does not permit useful trend analysis by year due to variation in animal populations over time, adjustment is made using the population correction unit (PCU). This is a standard technical unit of measurement adopted by EU countries. It represents the estimated weight at treatment for each species and the estimated numbers of each species which will have been eligible for treatment over a 12 month period, using a standard formula developed by the European Medicines Agency. PCUs are set by species groups; the top level whole-country PCU incorporates data from across the livestock species populations. Companion animal (non-food) species are excluded from this formula. Using the PCU, the overall sales of products authorised for use in food producing species can be presented as mg/PCU. This enables year-on-year comparison to see whether sales for livestock are changing in real terms.

What are Critically Important Antibiotics (CIA)?

Certain antibiotic classes are categorised by the World Health Organisation (WHO) as critically important antibiotics for human use, of which several are designated 'highest priority critically important antibiotics'. In December 2014, the European Medicines Agency (EMA) published scientific advice on the risk to humans from resistance in bacteria from animals to antibiotics classed as CIA by the WHO. This advice was prepared by an expert group composed of representatives and experts from human and animal disciplines. The EMA scientific advice classed macrolides as category 1, where the risk of use in animals to public health is low or limited. The scientific advice did not make recommendations for avoiding use of macrolides in animal health beyond what is consistent with responsible use principles. The same document classed fluoroquinolones and 3rd and 4th generation cephalosporins as category 2, or "antimicrobials used in veterinary medicine where the risk for public health is higher".

How is antibiotic resistance interpreted?

Antibiotic resistance in bacteria isolated from animals is collected in two distinct antibiotic resistance surveillance programmes in place for animals: the EU Harmonised Monitoring Scheme and the Clinical Surveillance programme.

Bacteria collected under the EU Harmonised Monitoring Scheme are presented as epidemiological cut-off values (ECV) for consistency with recent European Food Safety Authority (EFSA) Summary Reports. Bacteria collected under clinical surveillance are presented using human clinical breakpoints (CBP).