

# Possible measures to reduce antimicrobial use in animals: a veterinary perspective

Jornada del Día Europeo para el Uso Prudente de los Antibióticos  
*Madrid, 18 November 2016*

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FVE



Federation of  
Veterinarians of Europe



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# Federation of veterinarians of Europe

46 national associations  
 38 European countries

## 4 FVE Sections

- UEVP (*Practitioners*)
- UEVH (*Hygienists – Public Health Officers*)
- EASVO (*Veterinary State Officers*)
- EVERI (*Education, Research, Industry*)

***“One Profession-One Vision -One Voice”***





## FVE's Strategy 2015-2020



Veterinarians: caring for  
animals *and* people



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## FVE's mission

The European veterinary profession, embodied by FVE, strives to **enhance animal health, animal welfare, public health and protect the environment** by promoting the veterinary profession.

FVE President: Rafael  
Laguens (Spain)

CPME President:  
Jacques de Haller  
(Swiss)

Working in a 'One-Health  
approach'



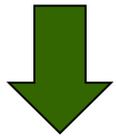
# AMR needs a holistic, one health global approach



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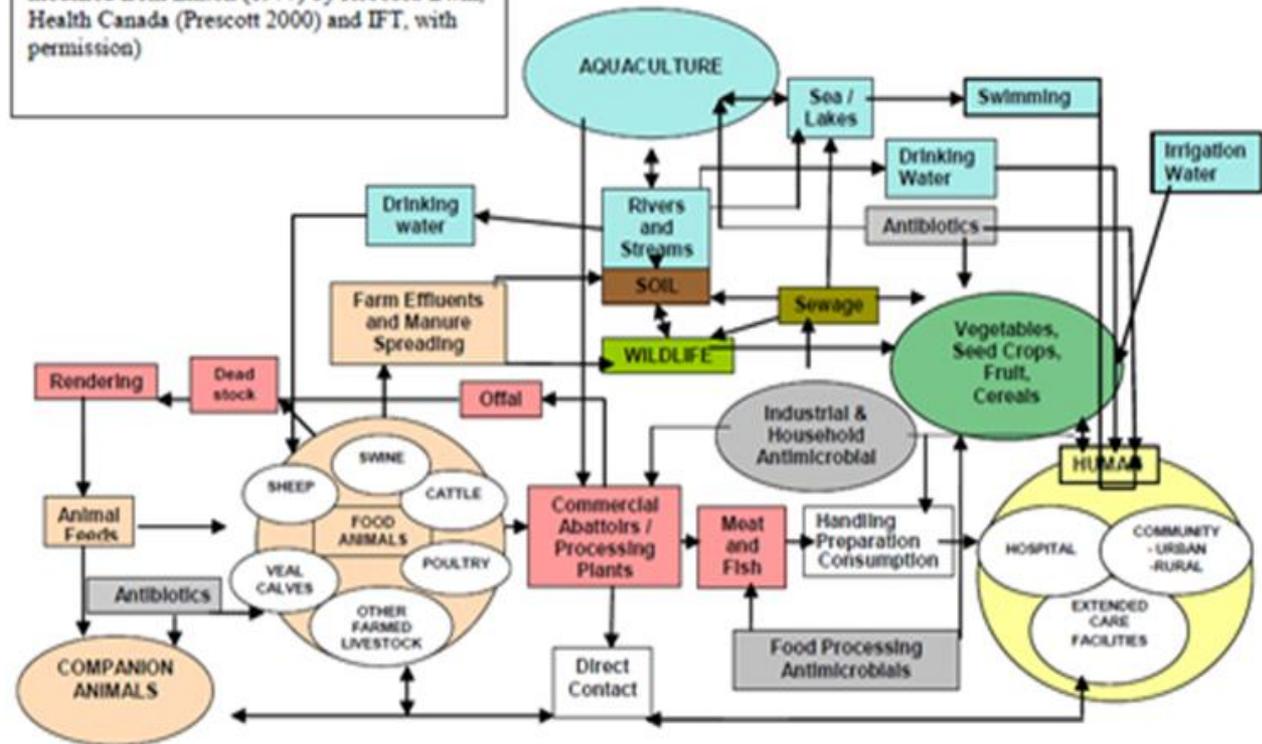
## ONE-HEALTH

*Multi-disciplinary, multi-sectoral & interprofessional approach needed*



*All stakeholders who have an impact on and are impacted by AMR shall be involved*

**Figure 1. Epidemiology of Antimicrobial Resistance** (adapted and modified from Linton (1977) by Rebecca Irwin, Health Canada (Prescott 2000) and IFT, with permission)



AMR is very complex and includes many unknowns, but we must prevent misuse and overuse and reduce as much as possible



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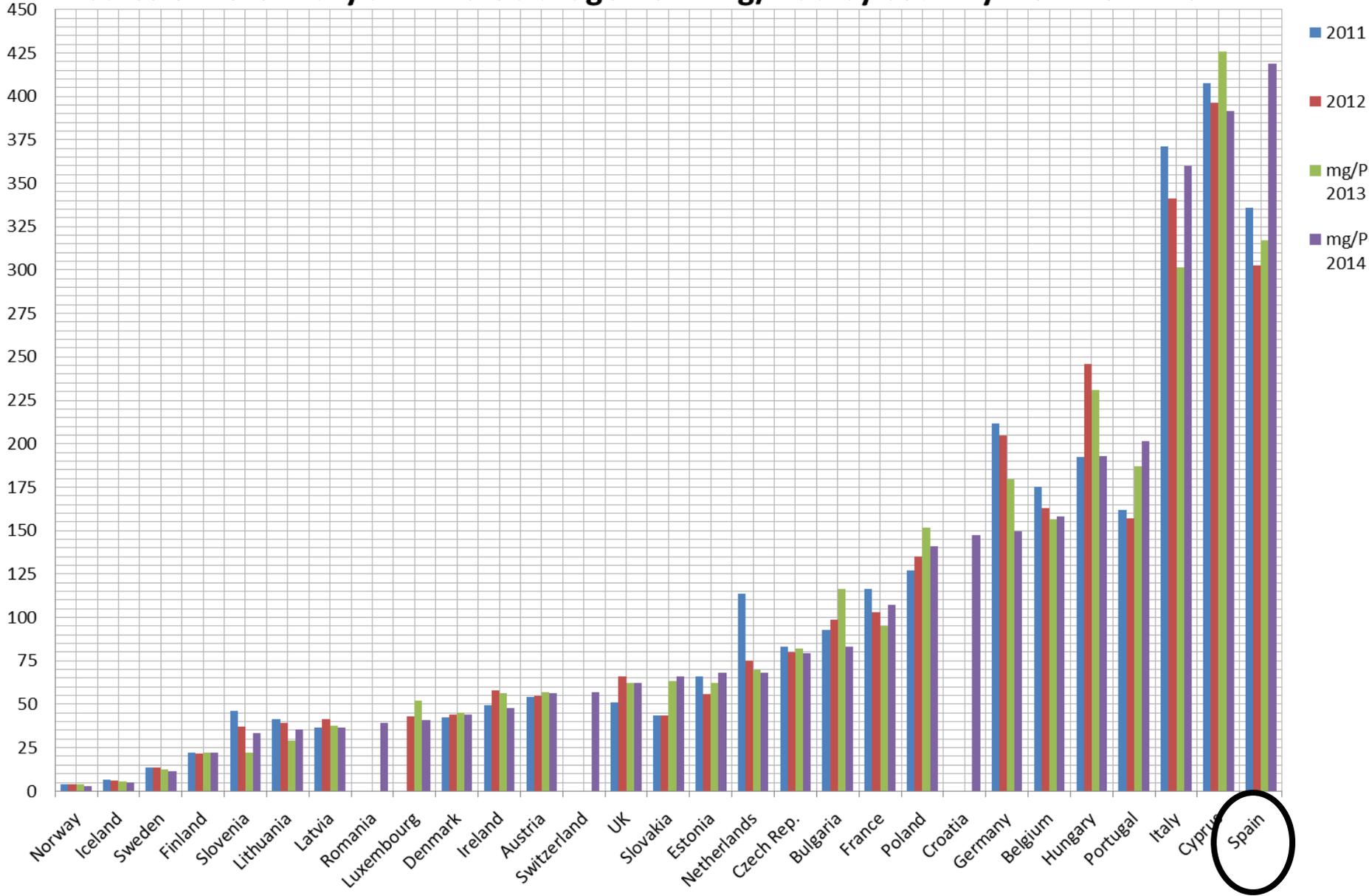
## Antibiotic consumption per country: wide variations!

- 6<sup>th</sup> ESVAC report published.
- Covers 29 EU and EFTA countries (not Greece)
- -2,4% between 2011-2014
- Some countries ↑
- Range 3.1–418.8 mg/PCU



mg/PCU

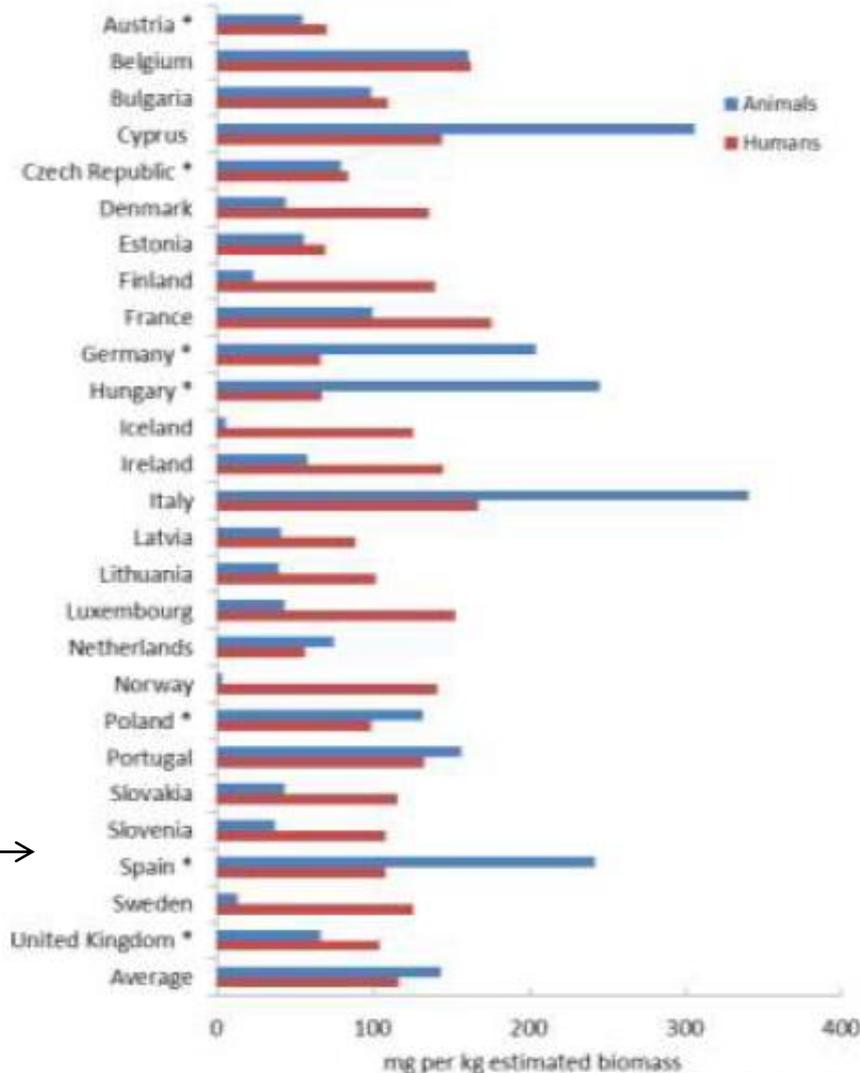
# Sales of veterinary antimicrobial agents in mg/PCU by country from 2011-2014



# Antibiotic use animals - humans



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## 2012 Data

Humans: 108.6 mg/kg (56.7–175.8 ) **excl hospitals!**

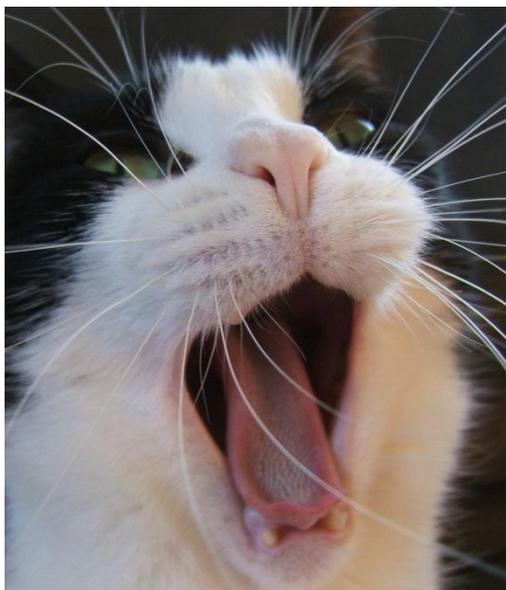
Animals: 242.0 mg/kg  
(3.8–396.5 mg/kg)

**2014 data: higher both in human as animal field**

*'The consumption of antimicrobials for animals in Spain is one of the highest among the European countries participating in ESVAC'*



# Antibiotic use in animals



## Companion animals

Individual treatment  
Close contact with owners  
Low volume, high use of CIA's



## Livestock

Often group treatment via feed  
High volumes  
Biosecurity



# For which indications are antimicrobials mostly prescribed in Europe?

- **Cattle:** mastitis, respiratory diseases, calf diarrhea
- **Pigs:** respiratory diseases, neonatal diarrhea, *streptococcus suis*, ...
- **Horses:** skin diseases (incl. wounds), respiratory diseases, locomotion problems, ...
- **Dogs:** skin diseases (incl. wounds, otitis, pyoderma), urogenital diseases, respiratory, dental diseases, ...
- **Cats:** skin diseases (including wounds, abscesses), respiratory, urinary tract, ..

**Veterinary Record**  
BVA British Veterinary Association Journal of the British Veterinary Association

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Veterinary Record doi:10.1136/vr.102462

**Paper**

**Antibiotics used most commonly to treat animals in Europe**

OPEN ACCESS

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**Abstract**

The Heads of Medicines Agencies and the Federation of Veterinarians of Europe undertook a survey to gain an insight into European prescribing of antibiotics for animals, in particular to highlight the diseases for which antibiotics are most commonly said to be prescribed and which different classes, including human critically important antibiotics (CIAs). The survey was completed by 3004 practitioners from 25 European countries. Many older antibiotics (eg,

Ref: *Veterinary Record* 2014 De Briyne et al,  
doi: 10.1136/vr.102462



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## ➤ **More details in 2016 report**

- **'production systems/life stages' – 'syndrome/disease' combinations** using the greatest amount of antimicrobials
- When is it **most difficult or easy to implement measures** to reduce need for antimicrobials
- Use of **vaccination** to reduce the use of antimicrobials
- specific **examples of good practices by which antibiotic use could be reduced**



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## ANTIMICROBIAL USE IN FOOD-PRODUCING ANIMALS



29-Feb-16

Replies to EFSA/EMA questions on the use of antimicrobials in food-producing animals in EU and possible measures to reduce antimicrobial use.

**FVE Report finalised  
Feb 2016**

**Input for EFSA/EMA  
opinion**

# PIGS

## Intensive pig farming



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### Fatteners:

- Respiratory disorders (e.g. Porcine Respiratory Disease Complex (PRDC))
- Digestive disorders (e.g. Proliferative Enteropathy (PE) by *Lawsonia intracellularis*, Swine dysentery, Ileitis, *Salmonella spp*).

### Sows:

- Urogenital disorders with Leptospirosis being important,
- Postpartum dysgalactia syndrome (PPDS) (*more CIAs are used*)
- *Actinobacillus pleuropneumonia* (APP) in gilts.

➔ *farms endemic to Porcine Reproductive and Respiratory Syndrome (PRRS) and Influenza may have significant impact on use of antimicrobials*

# General observations



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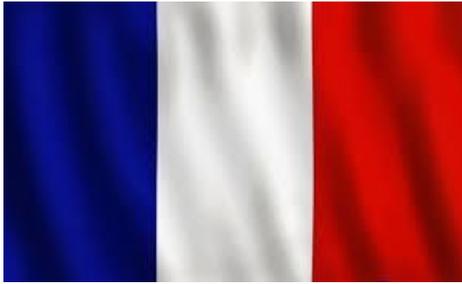
- **Young animals** are the very sensitive, especially around the time of weaning
- Other **critical phases** exist e.g. at end of lactation, after mixing, etc
- **Animals kept in an extensive way** generally use less antibiotics
- **Is important to not only look at bacterial diseases**, as often combo infections are seen eg. Viral + bacteria or parasite + bacteria.



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## Good practices

What was done in other countries?



- Started in 2012
- Multi-disciplinary, multi-stakeholder
- Communication, research, surveillance, law - per sector,
- Stage 2 - antibio2017, further reduction ab use (-25% in 5 years) and focus on CIA's
- Promoting preventing, improved livestock farming and an improved partnership between vet-farmer

### Results 2012-2015

- 20 % (all antibiotics)
- 21% critical antibiotics
- 25% colistin

**ÉCOANTIBIO**

**RÉDUIRE L'UTILISATION DES  
ANTIBIOTIQUES VÉTÉRINAIRES**

**REDUCING ANTIBIOTIC USE IN VETERINARY MEDICINE**



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- Started AMCRA in 2012
- Multi-disciplinary, multi-stakeholder
- Vision 2020: - 50% all antibiotics, - 75% critical antibiotics by 2020, -50% medicated feed by 2017
- 2015: monitoring antibiotic use per species/farm
- June 2016: from auto to co-regulation
- Ban preventive use CIA's, obligation sensitivity testing
- Oct 2016: only e-prescriptions medicated feed

#### Results 2011-2015

- 15,9 % (all antibiotics)
- 6,4% critical antibiotics
- 14,7% medicated feed



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- Started in 2008
- Public-private partnership
- Key elements:
  - use monitoring and benchmarking
  - Voluntary ban some CIA's and medicated feed
  - clear reduction targets (-20% by 2011, -50% by 2013 and -70% by 2015)
  - Increasing herd health & mandatory animal health plans with 1 vet/farm

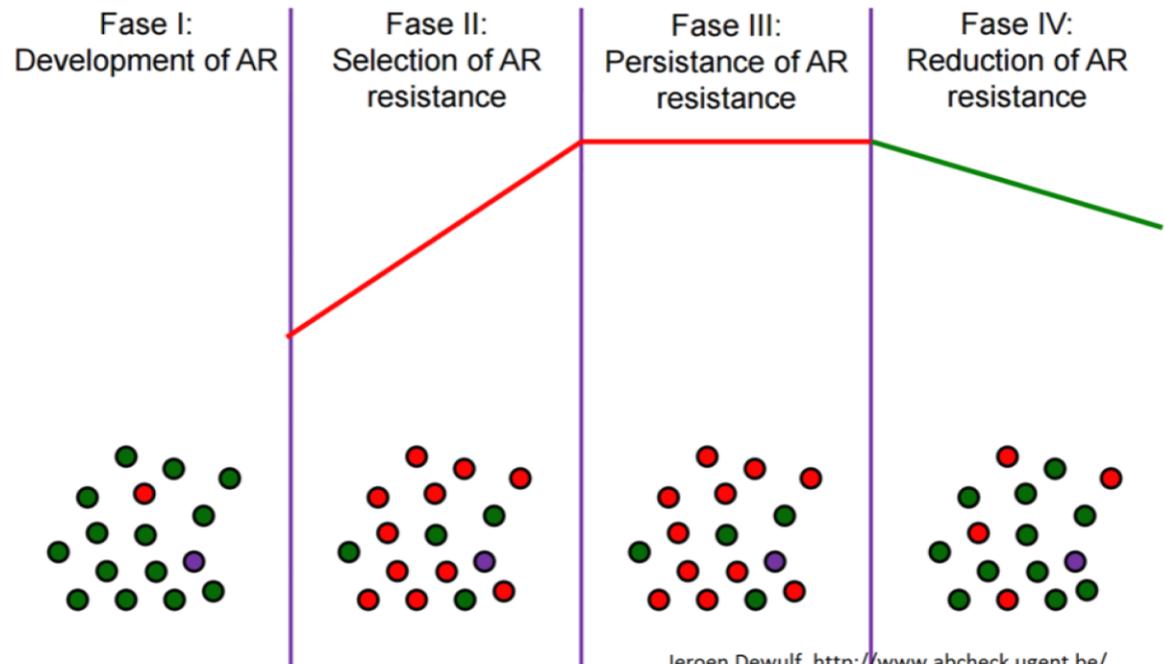
#### Results 2009-2015

- 58,4 % all antibiotics
- ~0% critical antibiotics FA
- Medicated feed stop



# Relationship antibiotic use and antibiotic resistance

## Epidemiology of antimicrobial resistance

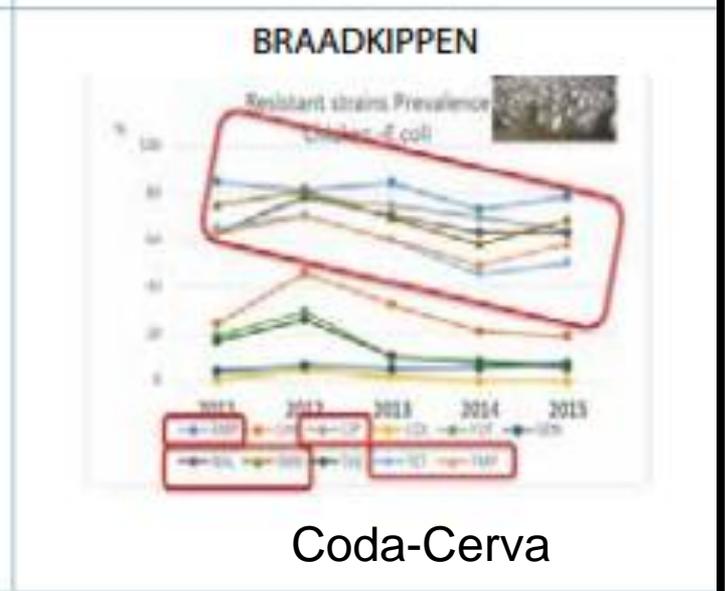
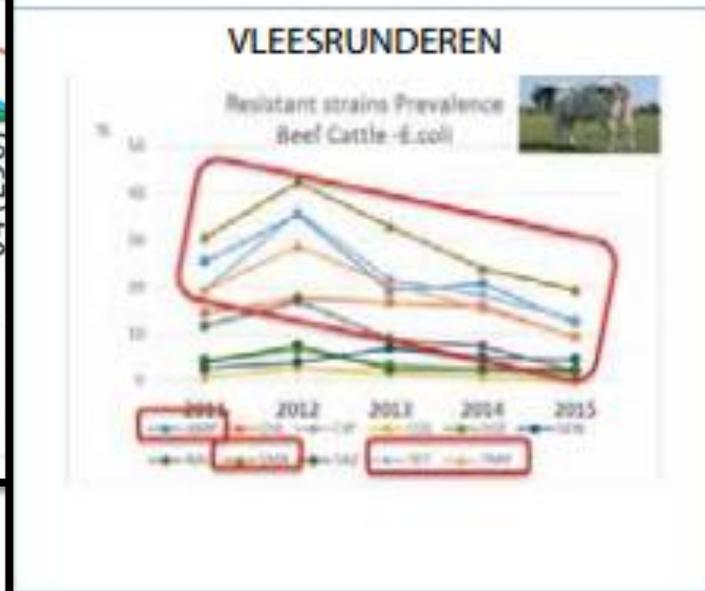
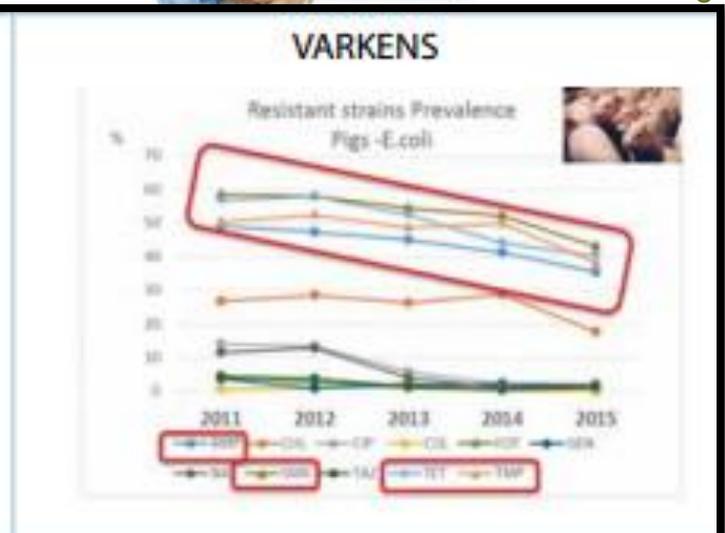
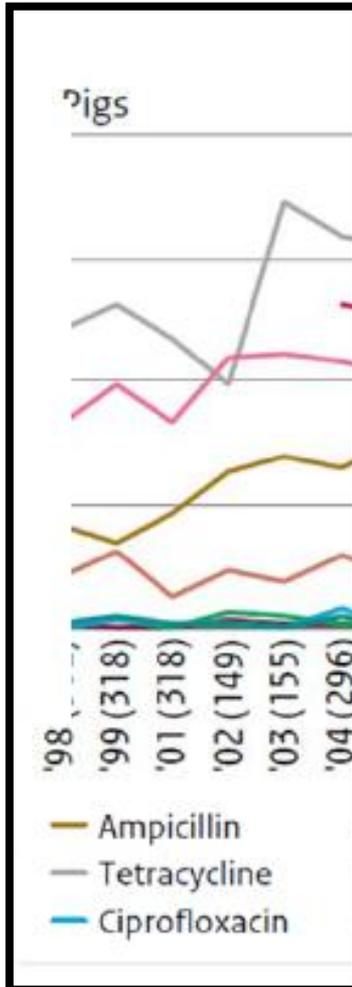


Jeroen Dewulf, <http://www.abcheck.ugent.be/>

# Antibiotic use ↓ = amr ↓



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Coda-Cerva



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# Relationship antibiotic use, productivity and animal welfare

# Antibiotic use reduction can be done without damaging production or endangering welfare

- ✓ E.g. Poultry UK, increased production by 5% while decreasing consumption antibiotic by 44%
- ✓ E.g. Netherlands 58% which did not appear to affect productivity nor farm profits.



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FVE/015/doc/063  
FINAL adopted GA 3 June 2016

## **Relationship between animal welfare and the use of antibiotics in food animals**

Antibiotic resistance is a very serious threat to human and animal health. It can only be tackled by an international coordination of all efforts as in the One Health Concept. Promoting responsible use and reducing the amount of antibiotics used in people, and animals worldwide is vital for maintaining the efficacy of the antibiotics to fight bacterial diseases in animals and humans. Animals that are well cared for and appropriately housed, will experience a better welfare, be less prone to infections and will need fewer antibiotics. The European veterinary profession, having a key role in animal health, welfare, food safety, environmental protection and sustainable keeping of animals is committed to take leadership in fighting antimicrobial resistance.

Bacterial resistance is not a new phenomenon, but an ancient one. Antibiotic resistance in bacteria against naturally occurring antibiotic substances is a natural phenomenon that predates the modern selective pressure of clinical antibiotic use. However, the resistance of bacteria against the “man-made” antibiotics that are used to fight bacterial disease in humans and animals poses an increasing threat to human and animal medicine, health and welfare. Antibiotic resistance can lead to failure of treatment for severe and fatal diseases that we currently perceive as curable. It also precludes interventions that modern medicine allows for both humans and animals.



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## Conclusions:

### 1/Antibiotic and amr reduction is possible

- No 'one-fits-all'
- But 'good practices' and key ingredients:
  - Transparent data per farm and vet
  - 1:1 relationship vet:farmer
  - Obligatory herd health visits to enhance prevention (Animal health Law!)
  - Use diagnostics
  - Strongly control medicated feed and oral use
  - Strongly control use of critical antibiotics
  - Communication by all stakeholders to create awareness
  - ...

# Conclusion

## 2/ Need for an approach which is

science based

multi-sectorial 'One Health'

Global approach



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- Whatever we do, let it **science-based** and make sure that it does what it intends, avoiding unwanted side-effects
- All strategies taken should be **balanced and consider both animal and human health** in a 'one Health' perspective
- Need to work in partnership
  - EU: EPRUMA, EC Action Plan, etc.
  - Internationally: OIE, WHO, ...
  - Nationally: UK (RUMA), BE (AMCRA), NL (SDa), SPAIN (VETRESPONSABLE), Portugal (PANRUAA), ...

# FVE activities



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## **FVE leaflets responsible use:**

- For veterinarians
- For policy makers
- Farmers
- Companion animal owners
- Horse owners
- Two “One Health leaflets”



Also available in Spanish

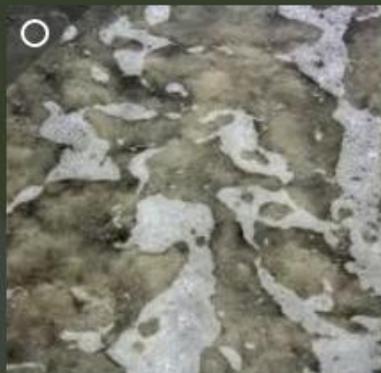
## **European Antimicrobial Awareness Day**

- FVE takes part in this yearly celebration

# How much do you REALLY know about animals and antibiotic resistance?

This quizz lets you explore the world of antibiotic use in animals and antibiotic resistance.

## Do you know how an animal can get an antibiotic resistant infection?



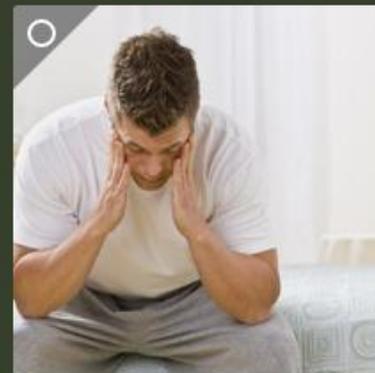
Contact with food or water carrying antibiotic-resistant bacteria.



All of these



Contact with another animal who has an antibiotic-resistant infection



Contact with a person who has an antibiotic-resistant infection

*Thank you*

