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

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FVE
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 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

ONE-HEALTH

Multi-disciplinary, multi-sectoral & interprofessional approach needed

All stakeholders who have an impact on and are impacted by AMR shall be involved
AMR is very complex and includes many unknowns, but we must prevent misuse and overuse and reduce as much as possible.
Antibiotic consumption per country: wide variations!

- 6th 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
Sales of veterinary antimicrobial agents in mg/PCU by country from 2011-2014

- 2011
- 2012
- mg/PCU 2013
- mg/PCU 2014

Countries: Norway, Iceland, Sweden, Finland, Slovenia, Lithuania, Latvia, Romania, Luxembourg, Denmark, Ireland, Austria, Switzerland, UK, Slovakia, Estonia, Netherlands, Czech Republic, Bulgaria, France, Poland, Croatia, Germany, Belgium, Hungary, Portugal, Italy, Cyprus, Spain
Antibiotic use in animals - humans

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, ..

Ref: Veterinary Record 2014 De Briyne et al, doi: 10.1136/vr.102462
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**
ANTIMICROBIAL USE IN FOOD-PRODUCING ANIMALS

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

**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 (PPRS) and Influenza may have significant impact on use of antimicrobials*
General observations

→ 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.
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
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
 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

Fase I: Development of AR
Fase II: Selection of AR resistance
Fase III: Persistance of AR resistance
Fase IV: Reduction of AR resistance

Antibiotic use ↓ = amr ↓

Coda-Cerva
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.
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

• 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

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

European Antimicrobial Awareness Day
- FVE takes part in this yearly celebration

Also available in Spanish
How much do you REALLY know about animals and antibiotic resistance?

This quiz 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