The use of antimicrobials in food animals

- The big picture -

Blaha, Thomas

DVM, Ph.D., Dipl. ECPHM and ECVPH

University of Veterinary Medicine Hannover, Germany – Field Station for Epidemiology

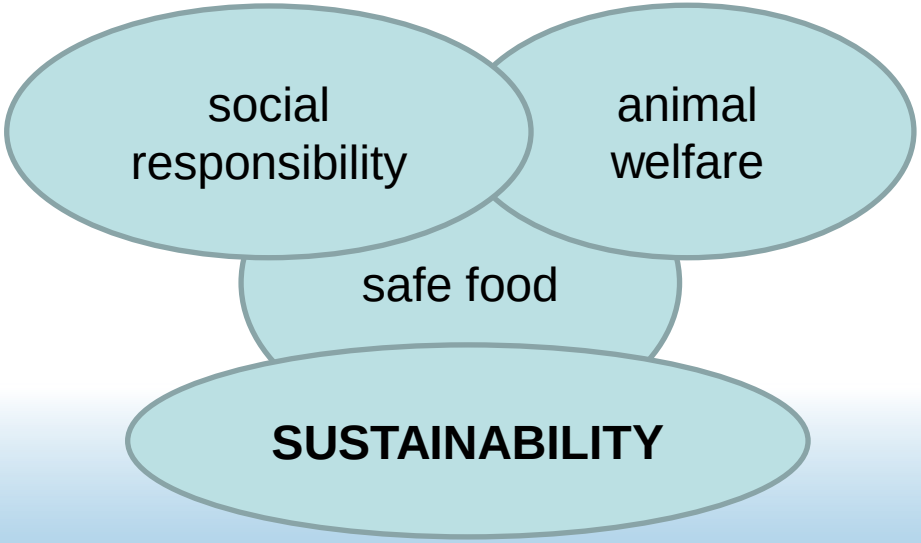
The Scientific Committee…

- Should we as „Safepork“ really have a session on

  „Ways to reduce the use of anticrobials“ ?

  (isn‘t it too much politics, too little science)
- In the end our answer was YES

Since safe food is not a separate issue any more



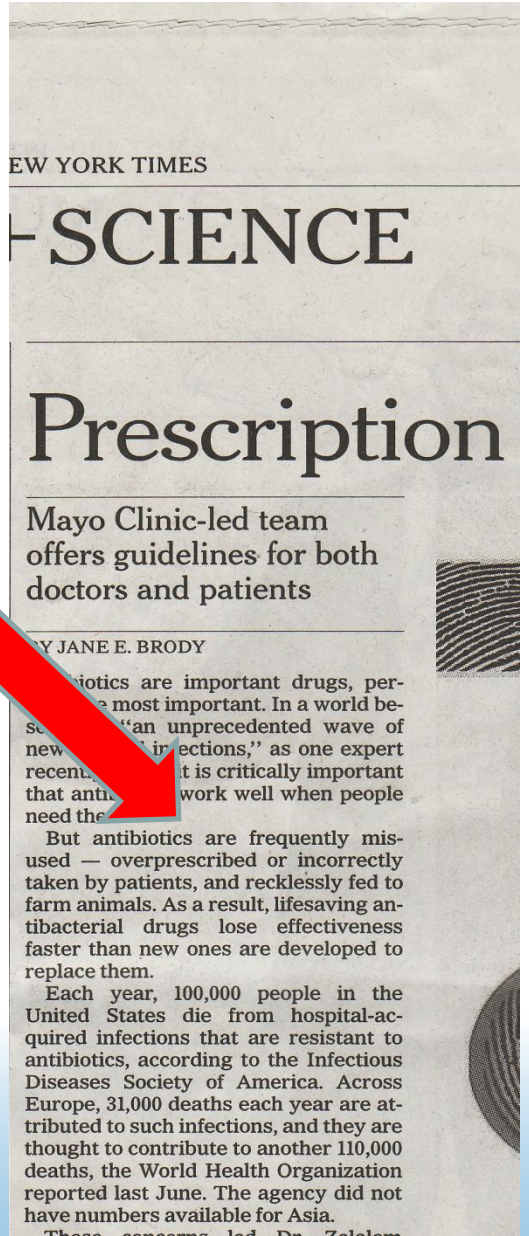
Wherever… whenever…

- The use of antimicrobials in food animals is all over the world criticised:

23. March 2011 on a flight to Newcastle:

„…frequently misused – overprescribed, or incorrectly taken by patients, and **recklessly fed to farm animals.“**

= the use in farm animals is increasingly seen as unethical, almost as criminal…



EW YORK TIMES

SCIENCE

Prescription

Mayo Clinic-led team offers guidelines for both doctors and patients

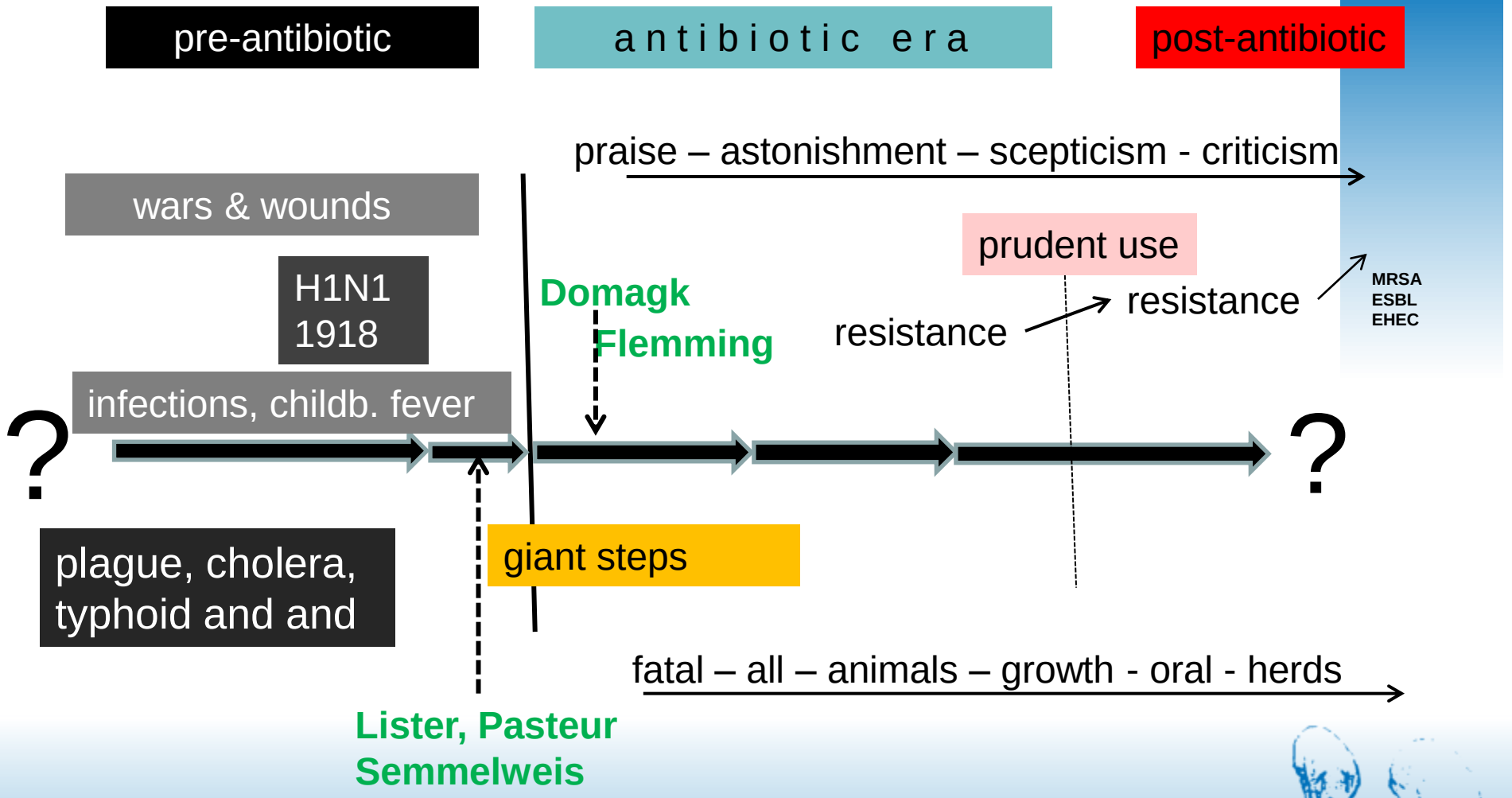
Y JANE E. BRODY

iotics are important drugs, per- most important. In a world be- "an unprecedented wave of new in ections," as one expert recent t is critically important that anti work well when people need the

But antibiotics are frequently mis- used — overprescribed or incorrectly taken by patients, and recklessly fed to farm animals. As a result, lifesaving an- tibacterial drugs lose effectiveness faster than new ones are developed to replace them.

Each year, 100,000 people in the United States die from hospital-ac- quired infections that are resistant to antibiotics, according to the Infectious Diseases Society of America. Across Europe, 31,000 deaths each year are at- tributed to such infections, and they are thought to contribute to another 110,000 deaths, the World Health Organization reported last June. The agency did not have numbers available for Asia.

The world with and without…



„Prudent“ use of antimicrobials (1)

- **Prudent use** (WHO, APUA, and national guidelines….)

  = highest efficacy at lowest risk of bacterial resistance

  The goal: Curbing bacterial resistance

  The rules: - no prophylactic use

  - disganostics, pathogen isolation
  - testing the susceptibility/resistance

    (discs, MIC: clin. breakp. vs epidem. cut-off)
  - only narrow spectrum, highest doses
  - as much as **necessary**, as little as possible

  The focus: ***antimicrobials***

  The target: the **veterinarian** **(only indirectly the farmer)**

„Prudent“ use of antimicrobials (2)

- The principles are common sense and reasonable!!!

- Nobody knows, how well they are complied with
- Nobody knows, what the overall resistance patterns would be without the rules of prudent use

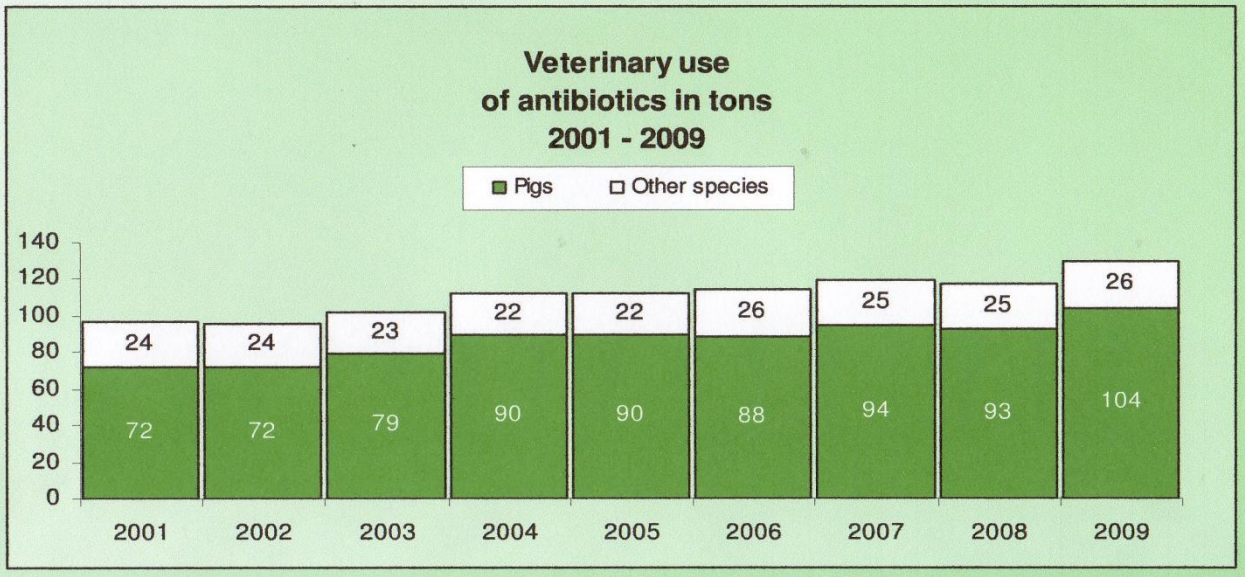
- What we know is that the prudent use did not reduce the problem of bacterial resistance
- The rules address „only“ the target pathogens, but…
- The rules do not address the „necessity“ of using antimicrobial substances

Despite of prudent use...

- The **criticism** with the use of antimicrobial substances in farm animals (reclessly fed…) is not decreasing, but **increasing**
- DT104, MRSA, ESBL-producing Enterobacteriacae, EHEC, Vancomycine-resistant enterococci (VRE) etc. etc. etc.
- The (somewhat justified) „metaphylactic“ use (instead of profylactic use) did not convince anybody that „feeding antibiotics“ to farm animals is something good… (antibiotics is animal welfare…)
- In most countries the amount of antimicrobial substances in farm animals increased in the last yeras (35% in DK from 2001 to 2009)

Increase of AB use

Use of Antibiotics in Animal Production in Denmark



Data from Vetstat

The amount of antimicrobials…

- **Reduction** (WHO, Governments and NGO‘s)

  = food produced with as little antimicrobials as possible

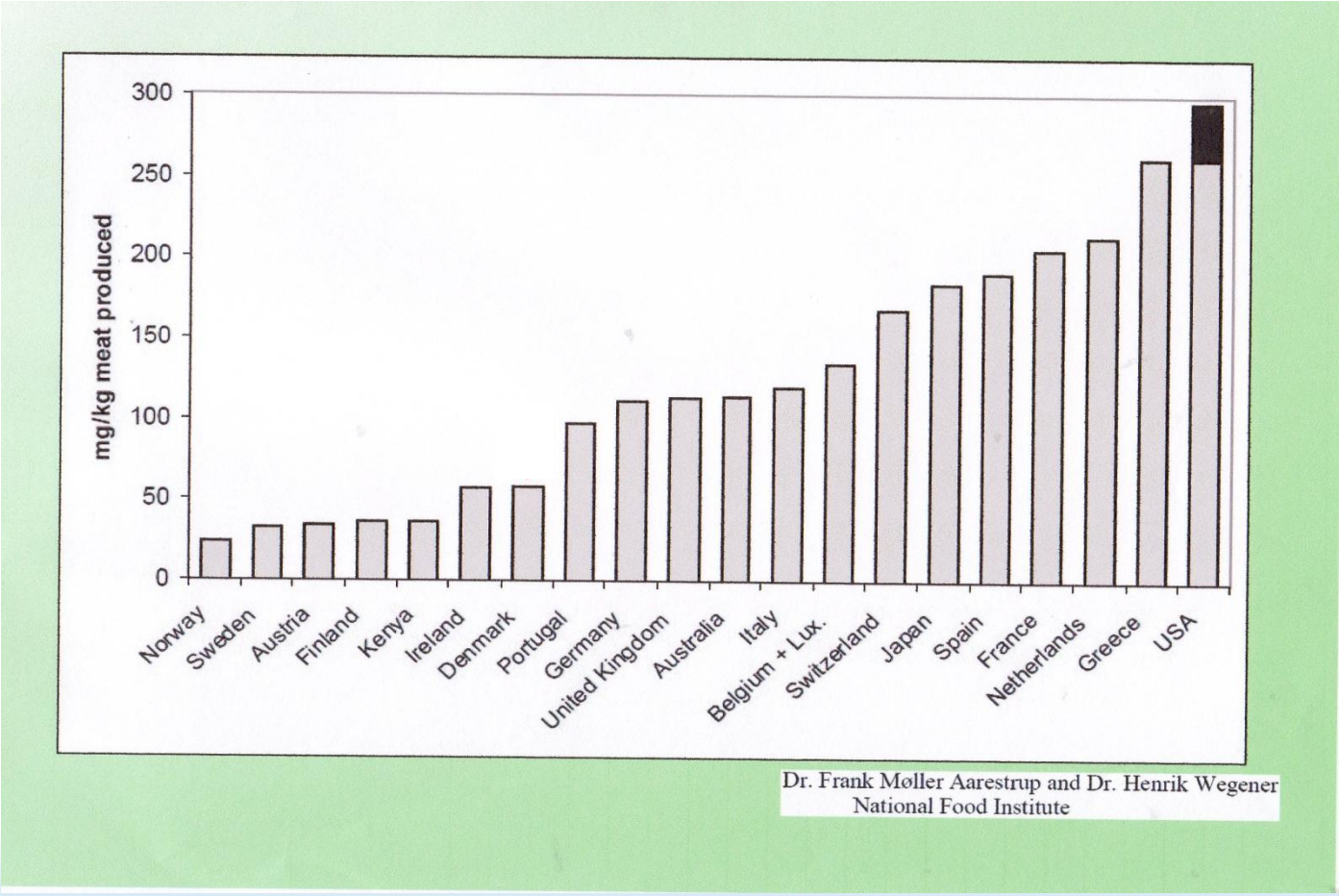
  The goal: minimising the selection pressure

  The rules: - recording and measuring usage
  - comparing average figures
  - benchmarking (ranking) per herd usage
  - carrot and stick incentives

  The focus: ***animal health***

  The target: the **farmer** **(and only indirectly the veterinarian)**

The often seen distribution…



So: what about the veterinarians

- If veterinarians are called to diseased herds and bacterial infections are prevailing, they have to do something…
- If farmers do not comply with consulting advice for herd health improvement, the veterinarians have no legal „power“ at all…
- The veterinarians are the wrong group to be pushed and blamed…

Various (very different) approaches

- NL: „voluntary“ reduction by 30% until end of 2011 and by 50% by the end of 2013 – we will see
- D: recording the sold amounts to areas (vets) ???
- Switzerland and Austria couple the sale of orally applicable drugs to animal health consulting
- DK: The „yellow card initiative“
- Research into association between health and drug use

The Yellow Card Initiative in DK

- Based on the Danish transparency (Vetstat, CHR)
- Amount of antibiotics used on farm in specific age groups (ADD/100 animals per day)
- The limits: - slaughter pigs (30-120 kg): **8** (ADD/100/day)
  - post weaners (7,5 -30kg): **28**
  - breeding pigs (>120 kg): **5.2**

Exceeding these values asks for (9 months each):

Farmer needs to reduce AB, inspection, vet. consulting

Farmer needs other vet, provide a plan to reduce AB

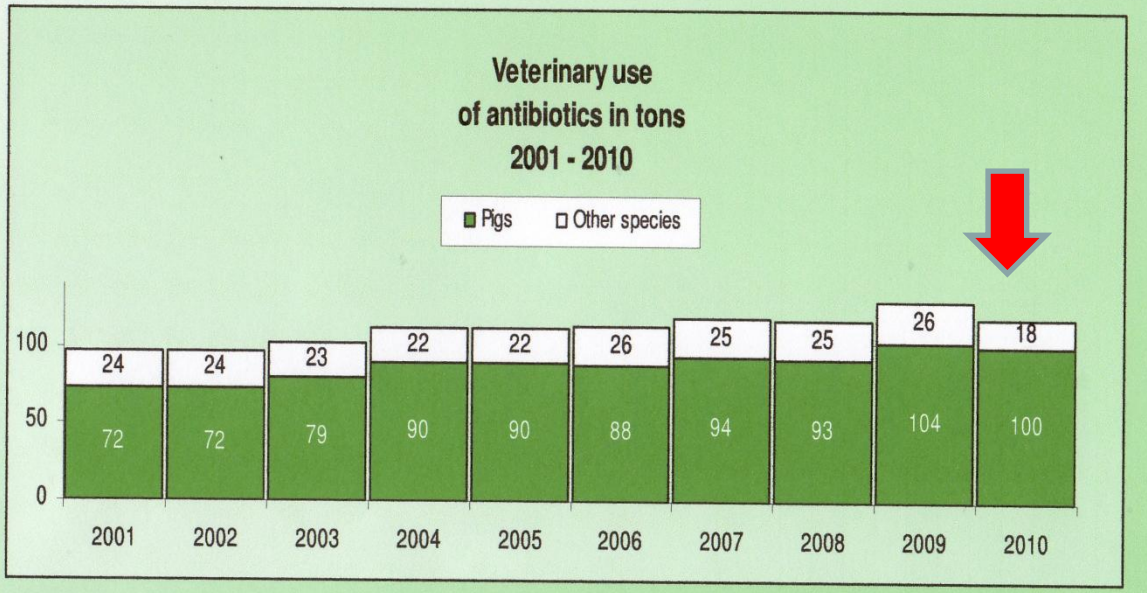
Farmer needs to reduce stocking density

From a paper by Tim Pedersen

The result so far:
Use of Antibiotics in Animal Production in Denmark

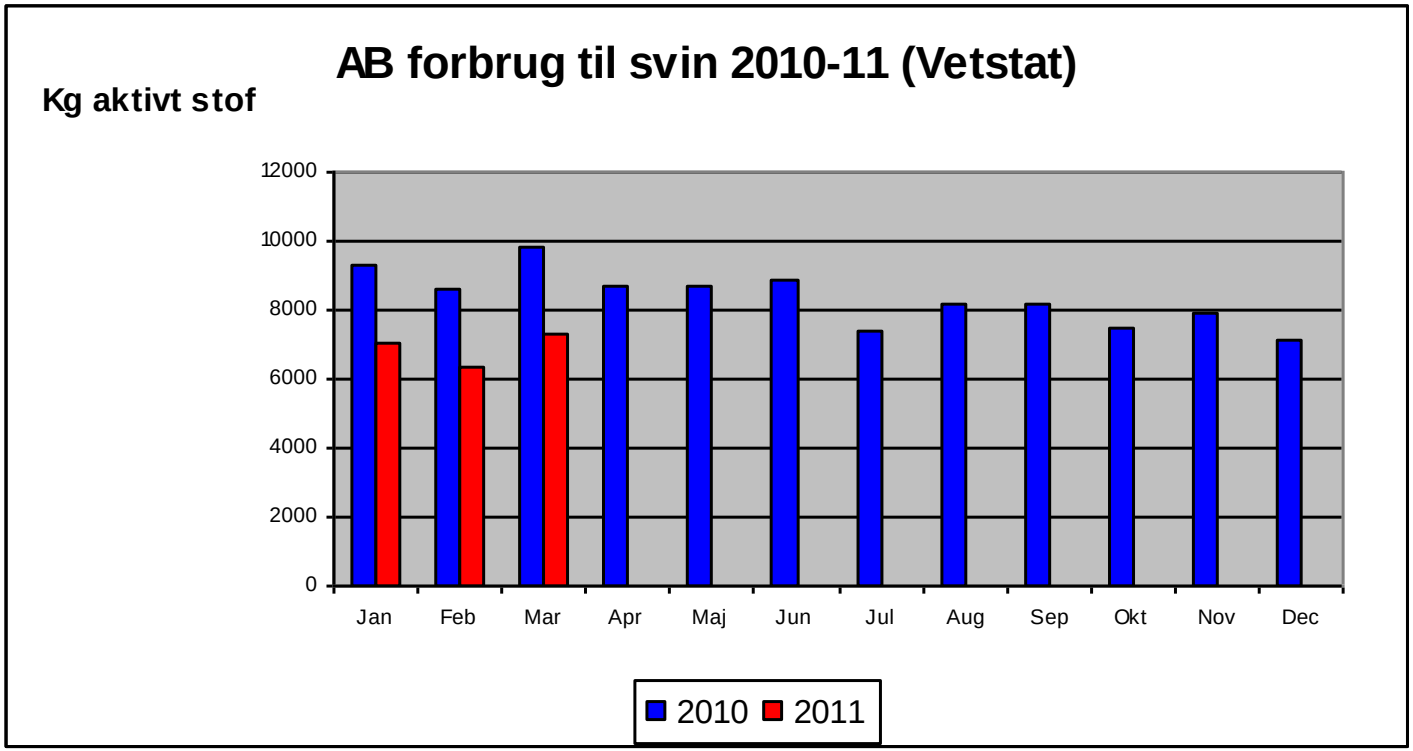
Decrease in AB-use:

3,5 % from 2009 - 2010



Data from Vetstat

From a presentation of J.P. Nielsen



A tool for quantifying herd health

presented at the IPVS in Copenhagen (Blaha et al., 2006)

The Animal Treatment Index (ATI):

The epidemiological assumption:

Groups of animals that were several times treated with antimicrobials had been less healthier than groups of animals that were not treated with antimicrobials

$$ATI = \frac{\text{(\# treated animals) x (\# days of treatment)}}{\text{(\# animals in the fattening group)}}$$

The ATI indicates the average number of days that each animal has been treated with therapeutic drugs

There is the possibility of a „herd-ATI“ and a „group-ATI“

One example of testing the ATI

- **The herd-ATI‘s found in 22 herds ranged from:**

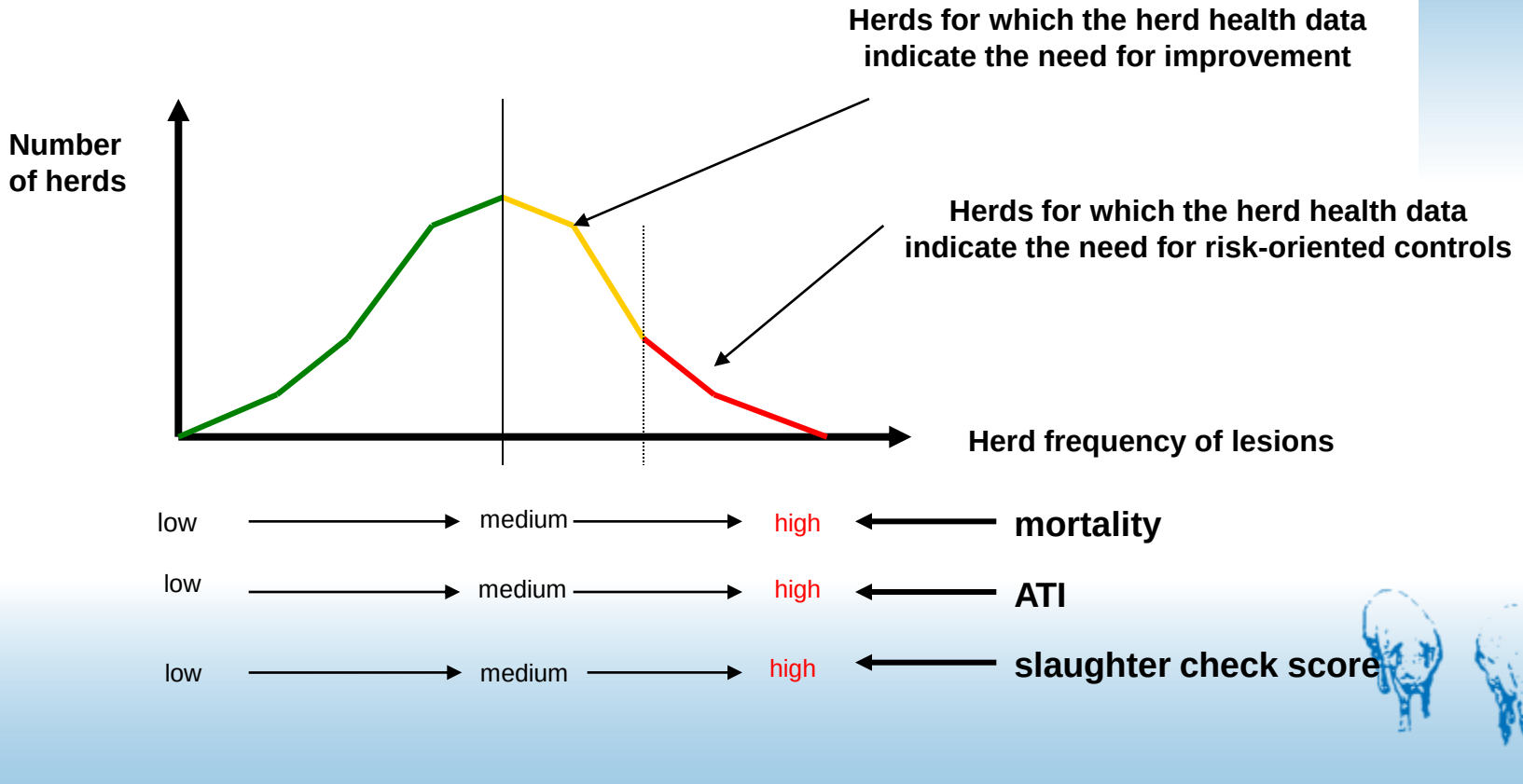
ATI:	0,00	to	49,12
Mortality:	1,05%	to	9,49%
Slauhgter check score:	1,28	to	4,57

- **The group-ATI‘s found in the 126 fattening groups of these 22 herds ranged from:**

ATI:	0,00	to	**98,12**
Mortality:	0,00%	to	16,77%
Slaughter check score:	1,2	to	6,85%

Benchmarking pig herds by herd-health indicators

Herd-health criteria: Mortality, ATI, slaughter check score



PCV2 Vaccination and animal origin

- Data from Dr. Peter Veldtmann (Vechta, Germany):

- Four farms that started PCV2 Vaccination in 2008:

Farm A (700 places, one origin): 90% less AB in 2010
Farm B (1000 places, one origin): 50% less AB in 2010
Farm C (1350 places, one origin): 60% less AB in 2010
Farm D: (1250 places, multiple origins): 10% less AB in 2010

Peter‘s comment: we still earn the same amount of money from these farms, but we now deal with healthy herds and not with diseased ones!!!

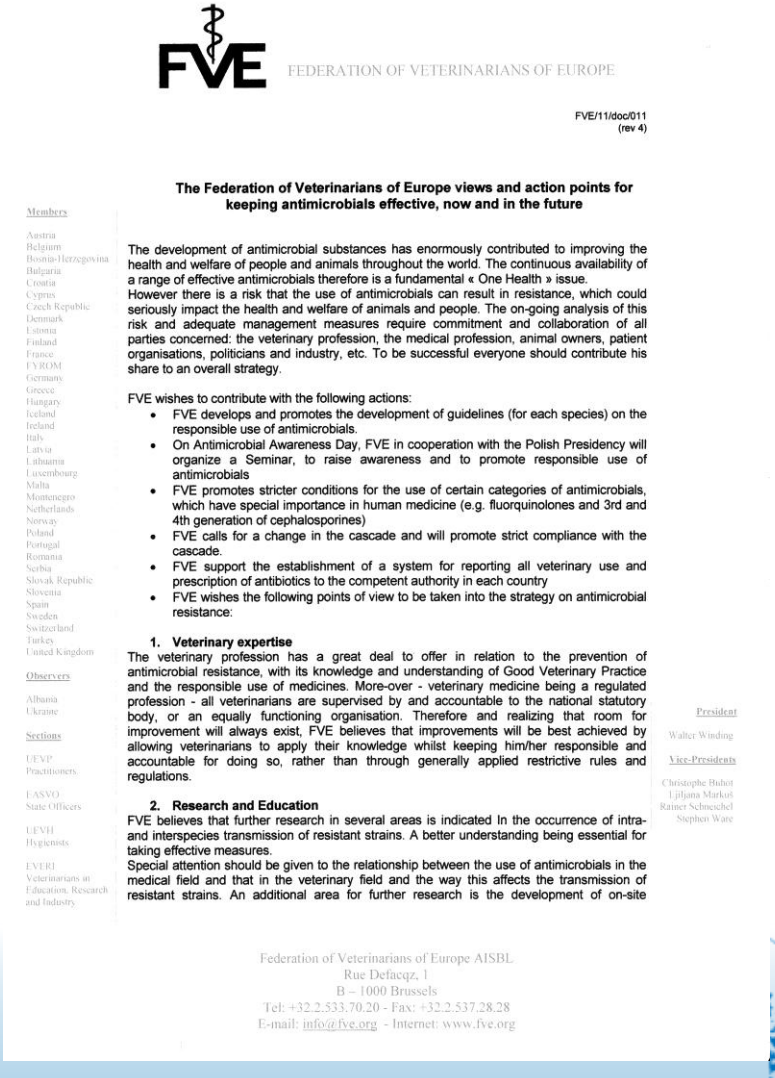
See also posters 127 and 128

FVE looks beyond „prudent use“

Husbandry (not so much veterinarians) seems to be recognised more and more as THE determinant for the need to use antimicrobials

FVE recognises that recording the amount of antimicrobials is not doing harm to veterinarians, but will help to identify room for herd health improvements

That‘s a callenge, but much more **a chance for the veterinary profession**



FVE FEDERATION OF VETERINARIANS OF EUROPE

FVE/11/doc/011
(rev 4)

The Federation of Veterinarians of Europe views and action points for keeping antimicrobials effective, now and in the future

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The development of antimicrobial substances has enormously contributed to improving the health and welfare of people and animals throughout the world. The continuous availability of a range of effective antimicrobials therefore is a fundamental « One Health » issue.
However there is a risk that the use of antimicrobials can result in resistance, which could seriously impact the health and welfare of animals and people. The on-going analysis of this risk and adequate management measures require commitment and collaboration of all parties concerned: the veterinary profession, the medical profession, animal owners, patient organisations, politicians and industry, etc. To be successful everyone should contribute his share to an overall strategy.

FVE wishes to contribute with the following actions:

- FVE develops and promotes the development of guidelines (for each species) on the responsible use of antimicrobials.
- On Antimicrobial Awareness Day, FVE in cooperation with the Polish Presidency will organize a Seminar, to raise awareness and to promote responsible use of antimicrobials
- FVE promotes stricter conditions for the use of certain categories of antimicrobials, which have special importance in human medicine (e.g. fluorquinolones and 3rd and 4th generation of cephalosporines)
- FVE calls for a change in the cascade and will promote strict compliance with the cascade.
- FVE support the establishment of a system for reporting all veterinary use and prescription of antibiotics to the competent authority in each country
- FVE wishes the following points of view to be taken into the strategy on antimicrobial resistance:

1. **Veterinary expertise**

The veterinary profession has a great deal to offer in relation to the prevention of antimicrobial resistance, with its knowledge and understanding of Good Veterinary Practice and the responsible use of medicines. More-over - veterinary medicine being a regulated profession - all veterinarians are supervised by and accountable to the national statutory body, or an equally functioning organisation. Therefore and realizing that room for improvement will always exist, FVE believes that improvements will be best achieved by allowing veterinarians to apply their knowledge whilst keeping him/her responsible and accountable for doing so, rather than through generally applied restrictive rules and regulations.

2. **Research and Education**

FVE believes that further research in several areas is indicated In the occurrence of intra- and interspecies transmission of resistant strains. A better understanding being essential for taking effective measures.
Special attention should be given to the relationship between the use of antimicrobials in the medical field and that in the veterinary field and the way this affects the transmission of resistant strains. An additional area for further research is the development of on-site

President
Walter Winding

Vice-Presidents
Christophe Bisbet
Ljiljana Markuš
Rainer Schneichel
Stephen Ware

Federation of Veterinarians of Europe AISBL
Rue Defacqz, 1
B – 1000 Brussels
Tel: +32.2.533.70.20 - Fax: +32.2.537.28.28
E-mail: info@fve.org - Internet: www.fve.org

We need to change the language…

If you plan to reduce the use of antimicrobials in food animals, do not talk about

Antimicrobials

but about

ANIMAL HEALTH

= husbandry, management, biosecurity, hygiene

Pay the veterinarian for health insted for disease!!!

Animal Health over time

is not a simple „No“ or „Yes“, but a complex „Low“ or „High“

The tools

- **Animal health management**
- **Drugs (antimicrobials)**
- **Vaccination**
- **Biosecurity, Trade restr., eradication**

Worms and Epidemics	Pneumonia and Diarrhoea	Little disease with lots of drugs	No disease with no drugs	No animal and no human pathogens

Low **Animal Health** **High**

Thank you!