FEDERAL INSTITUTE FOR RISK ASSESSMENT

BfR
Bundesinstitut für Risikobewertung

AMR in the food chain in Germany

- the one health aspect

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Outline of my presentation

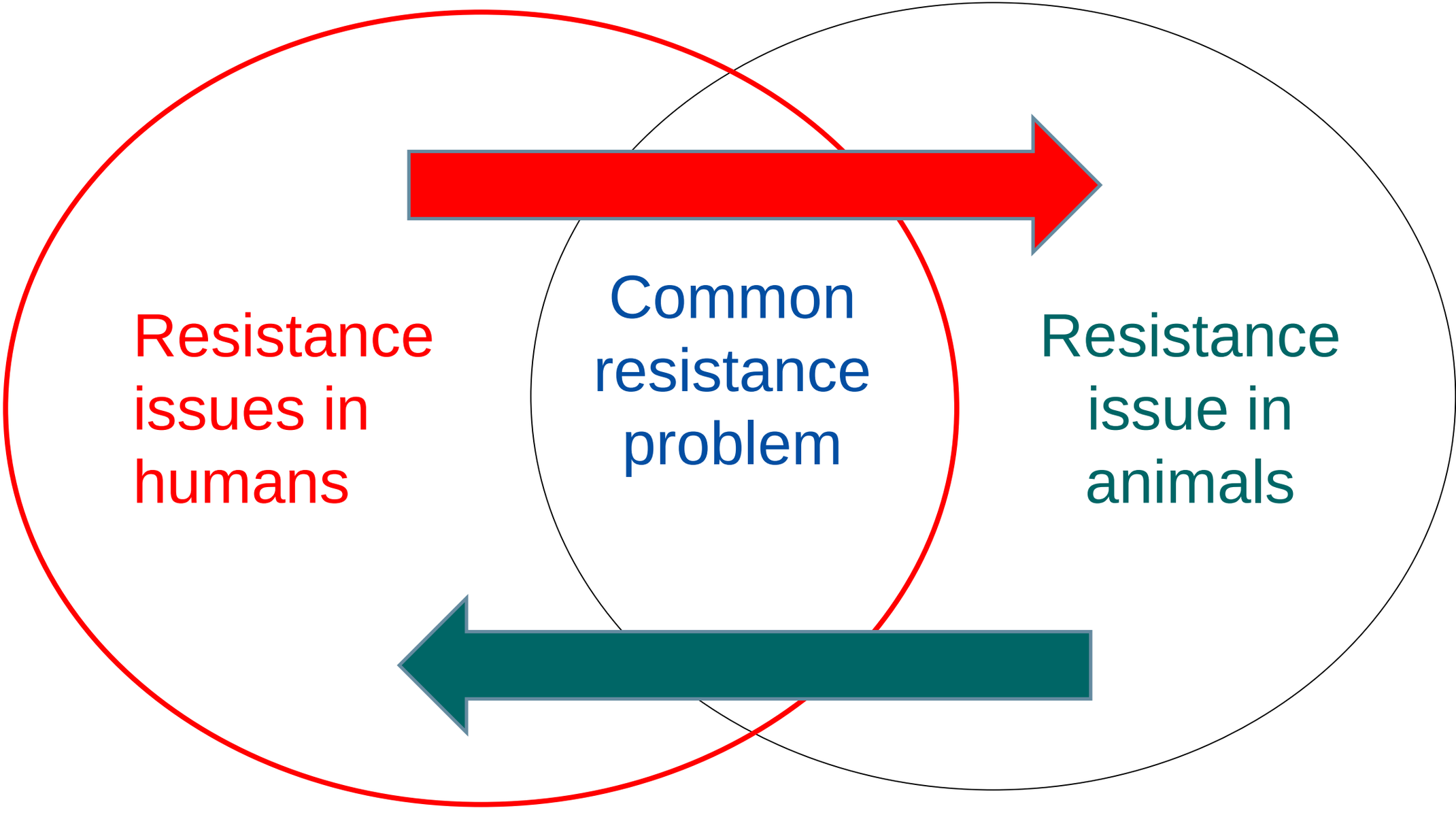
Introduction – Antimicrobial Resistance and public opinion

Development of Resistance in Humans

Development of Resistance in Animals

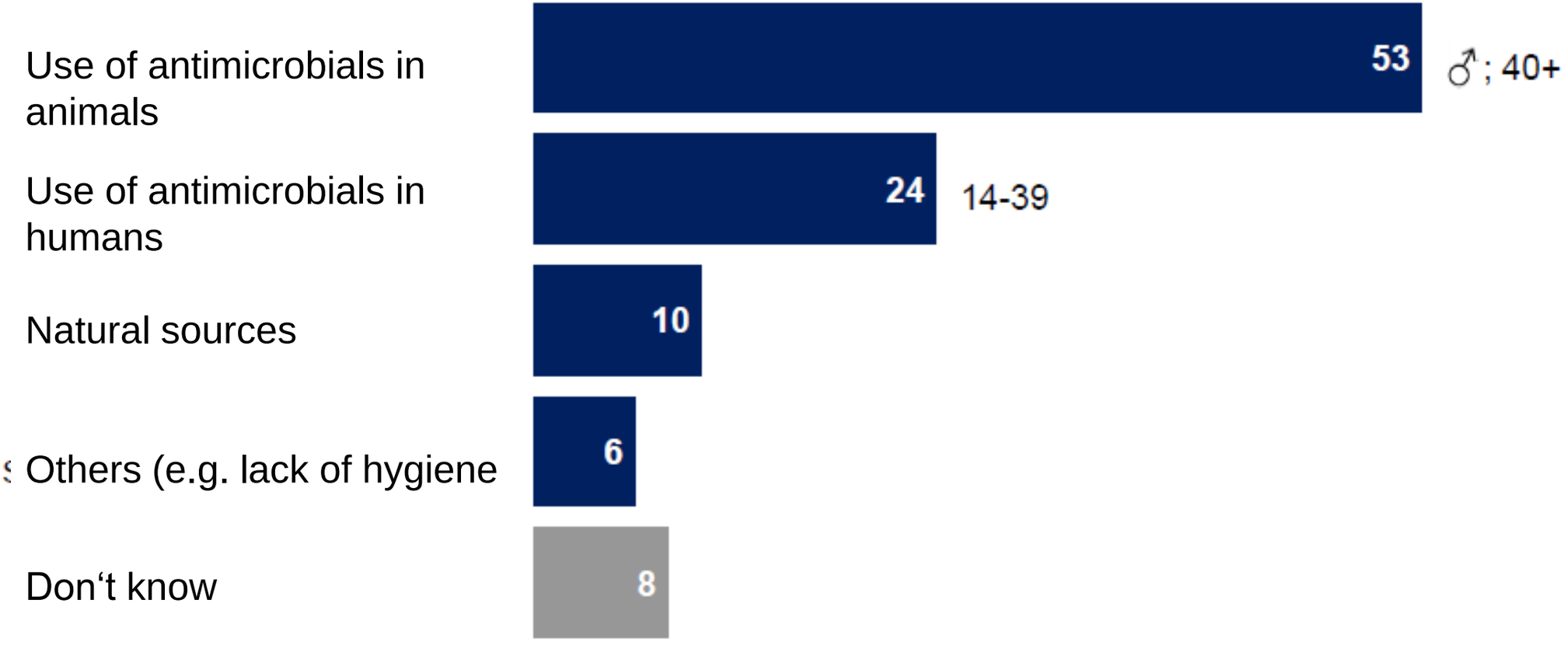
Actions taken for reduction

What is one health about?



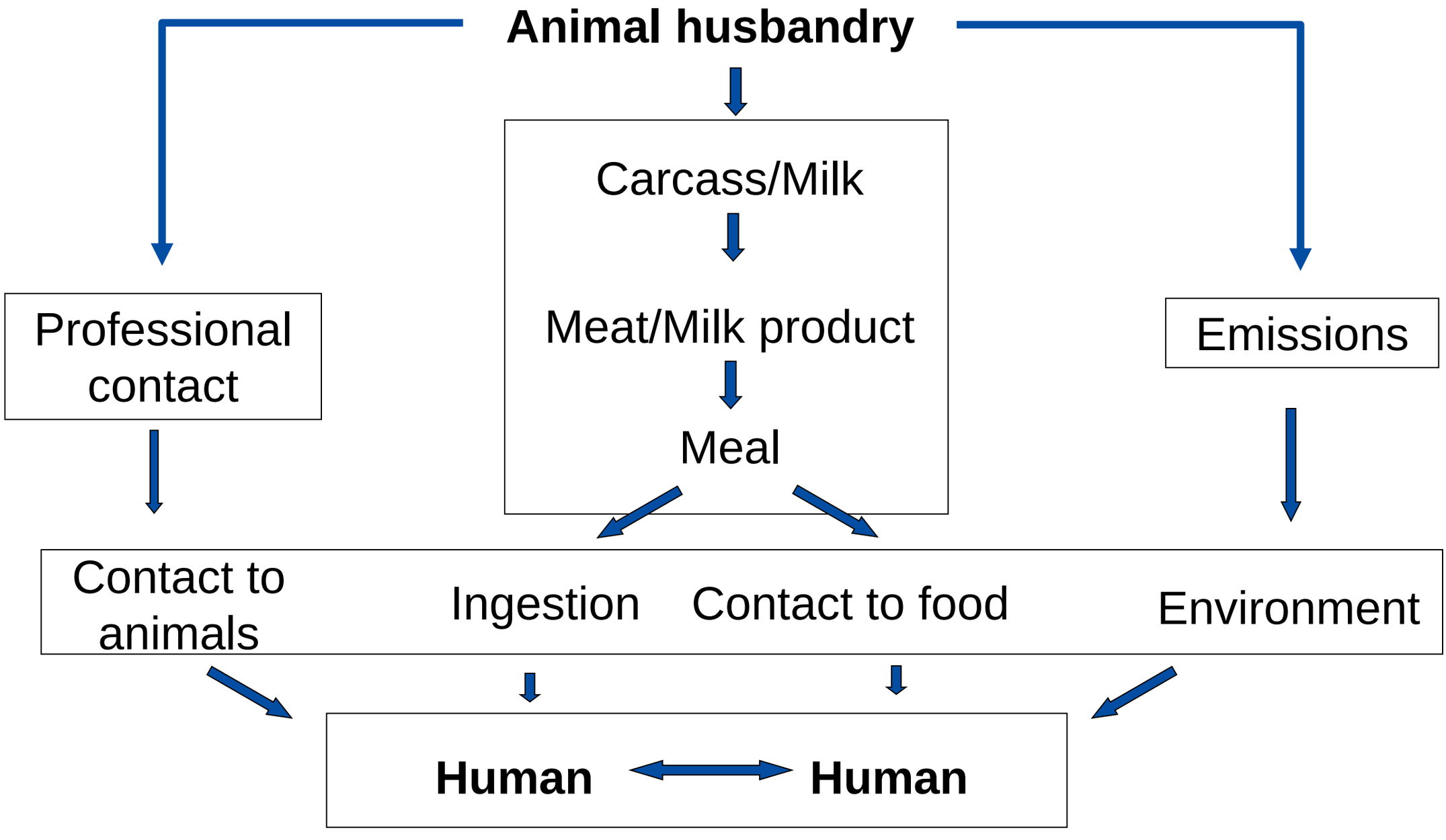
Public opinion: Reasons for AMR

What is the main cause of AMR according to your opinion?

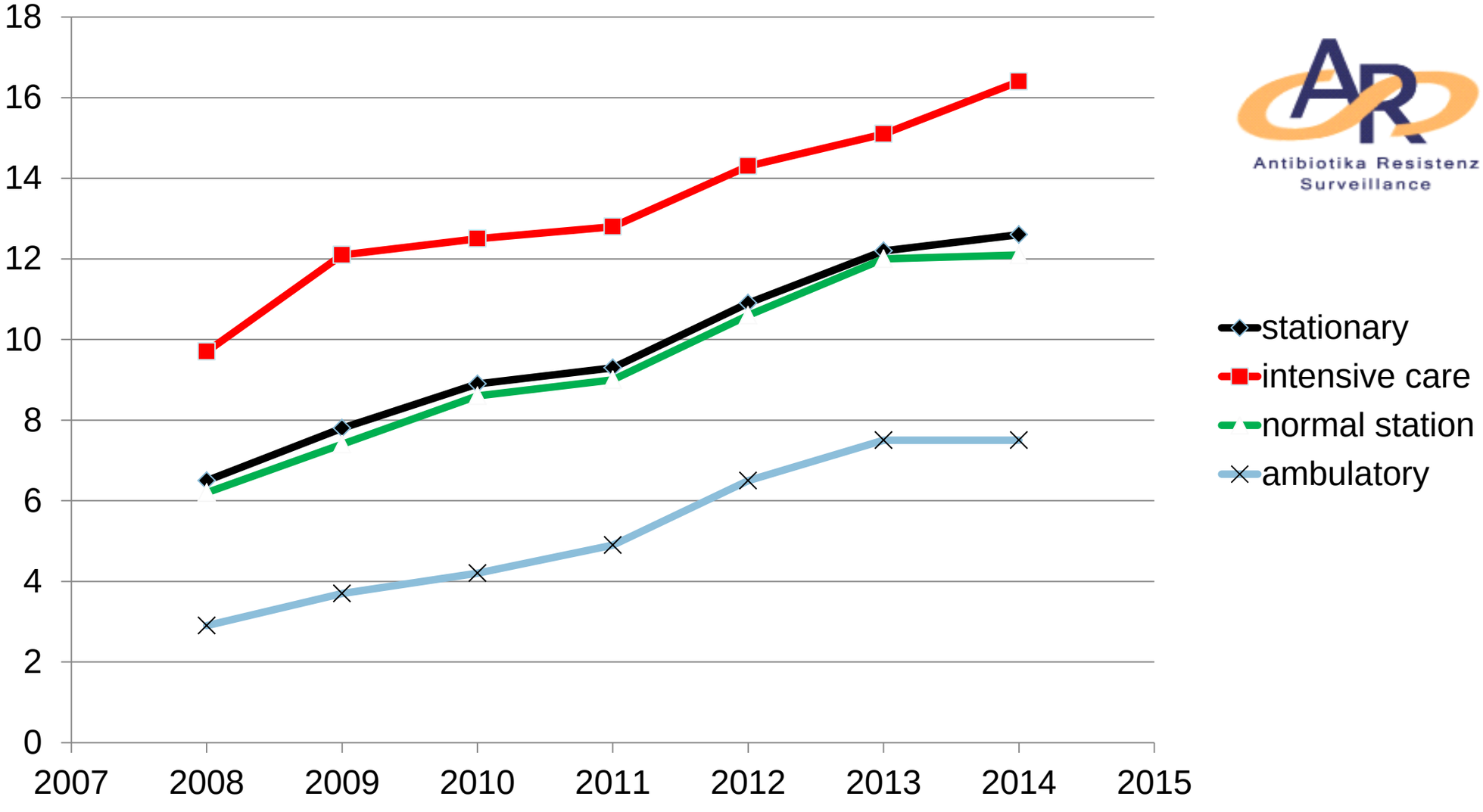


BfR-Verbrauchermonitor Spezial (01/2015), **n = 834** Befragte, die von antibiotikaresistenten Bakterien gehört haben; **alle Angaben in Prozent**; Rundungsdifferenzen möglich

Exposure Pathways – Food chain



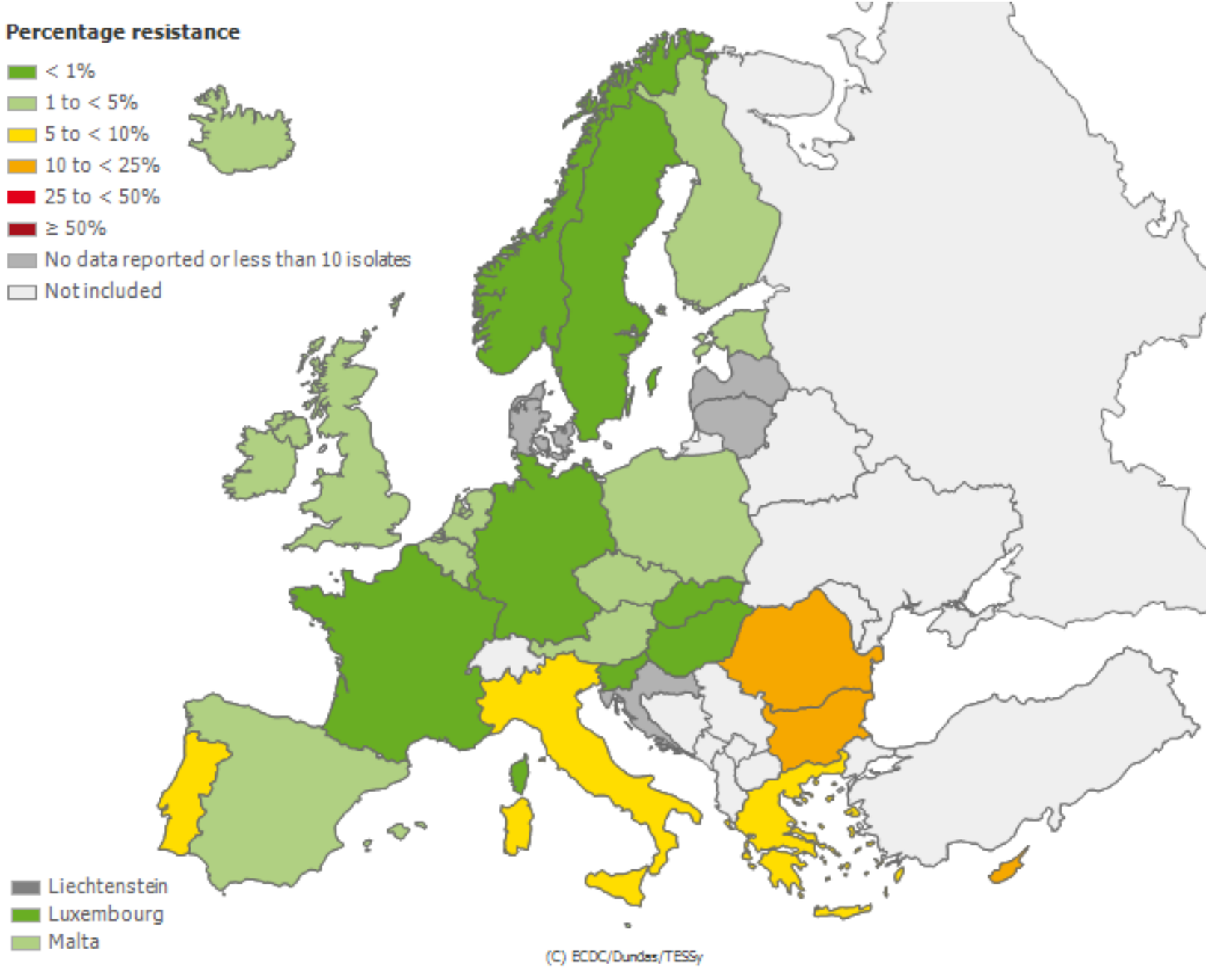
Resistance to cephalosporins in *E. coli* from humans in Germany



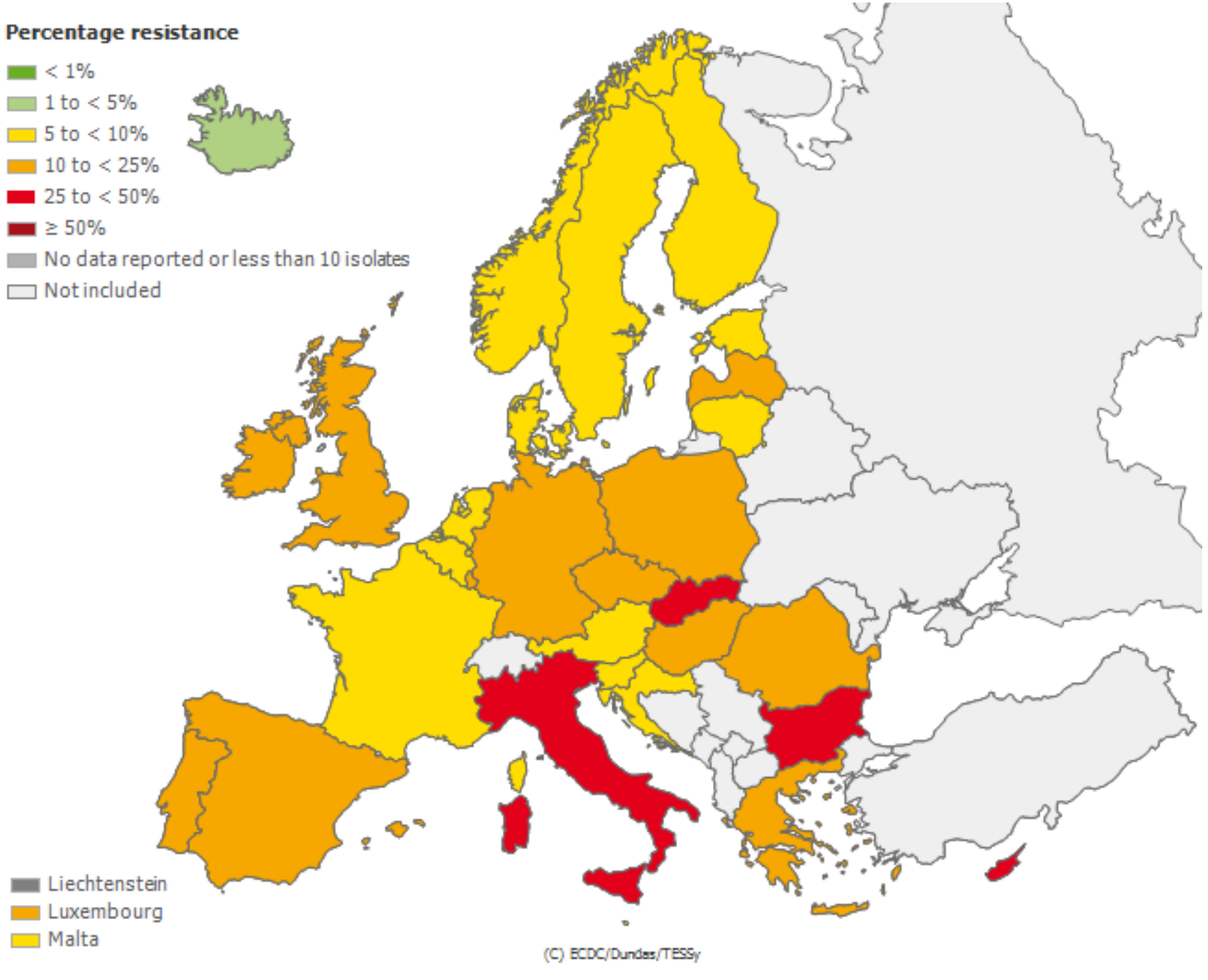
Antibiotika Resistenz Surveillance

Datenquelle: Robert Koch-Institut: ARS, https://ars.rki.de, Datenstand: 01.07.2015

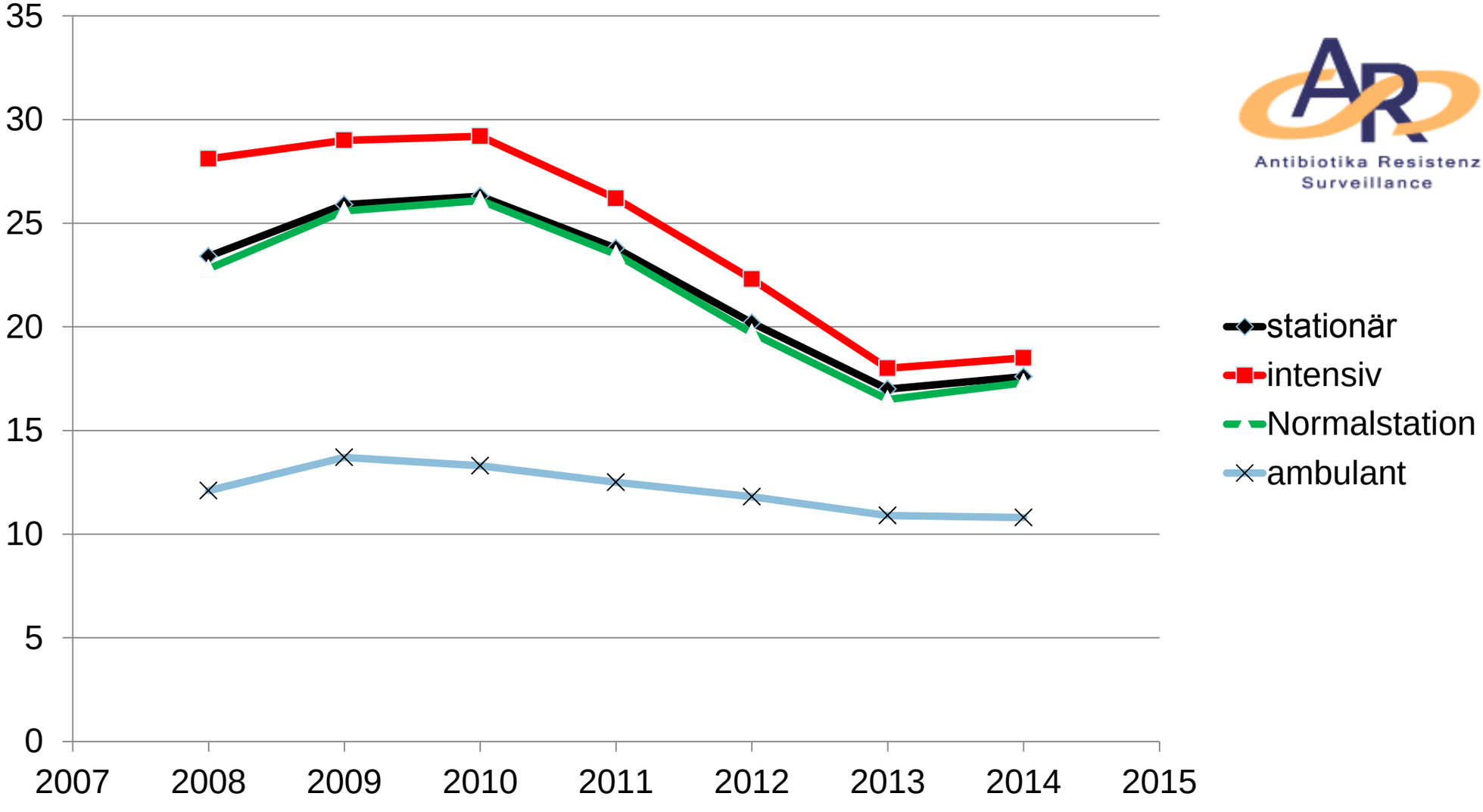
AMR to 3rd Gen. Cephalosporins in human *E.coli* isolates 2003



AMR to 3rd Gen. Cephalosporins in human *E.coli* isolates 2013



Oxacillinresistance in *S. aureus* from humans in Germany



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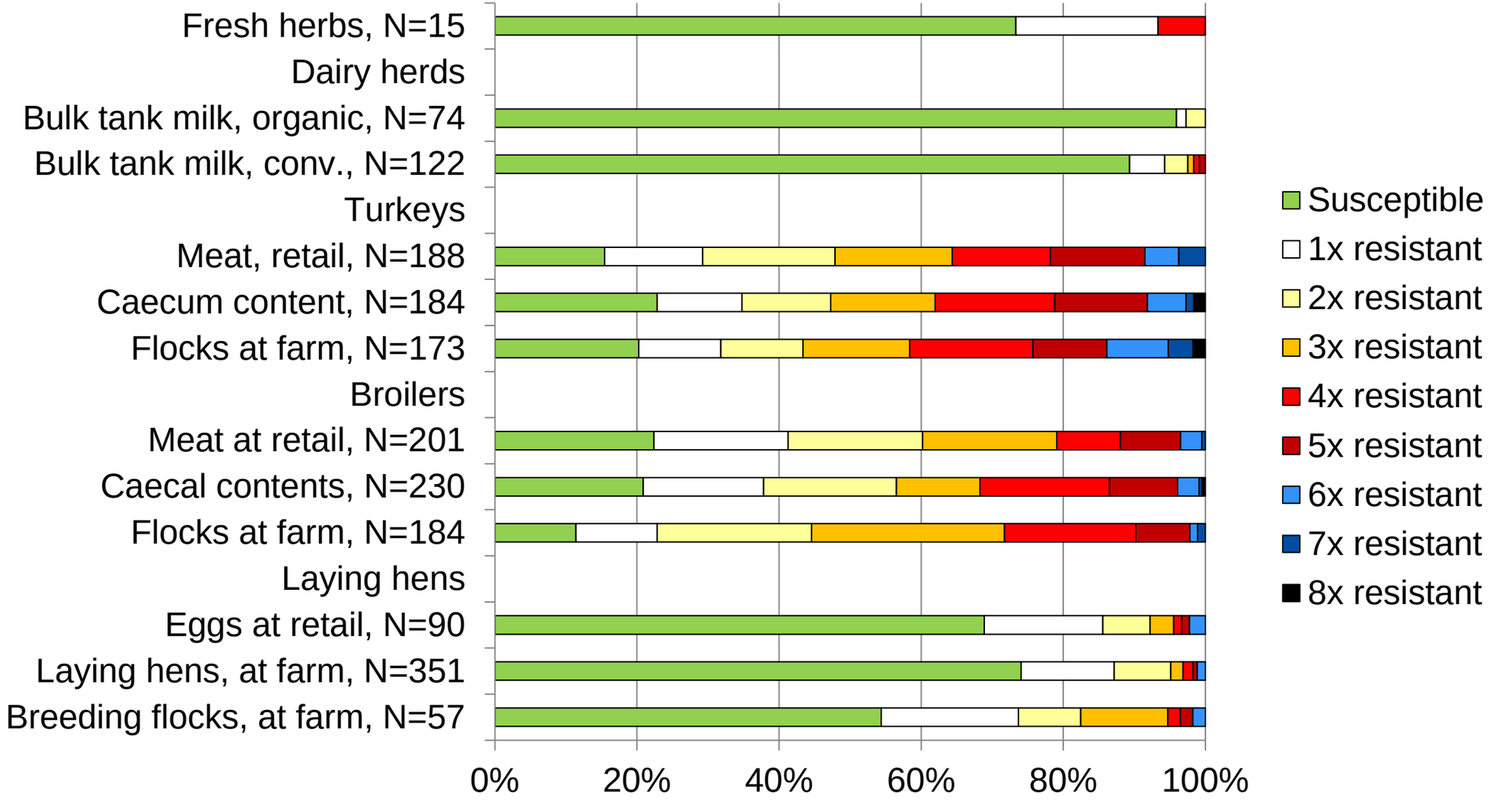
Baseline human medicine:

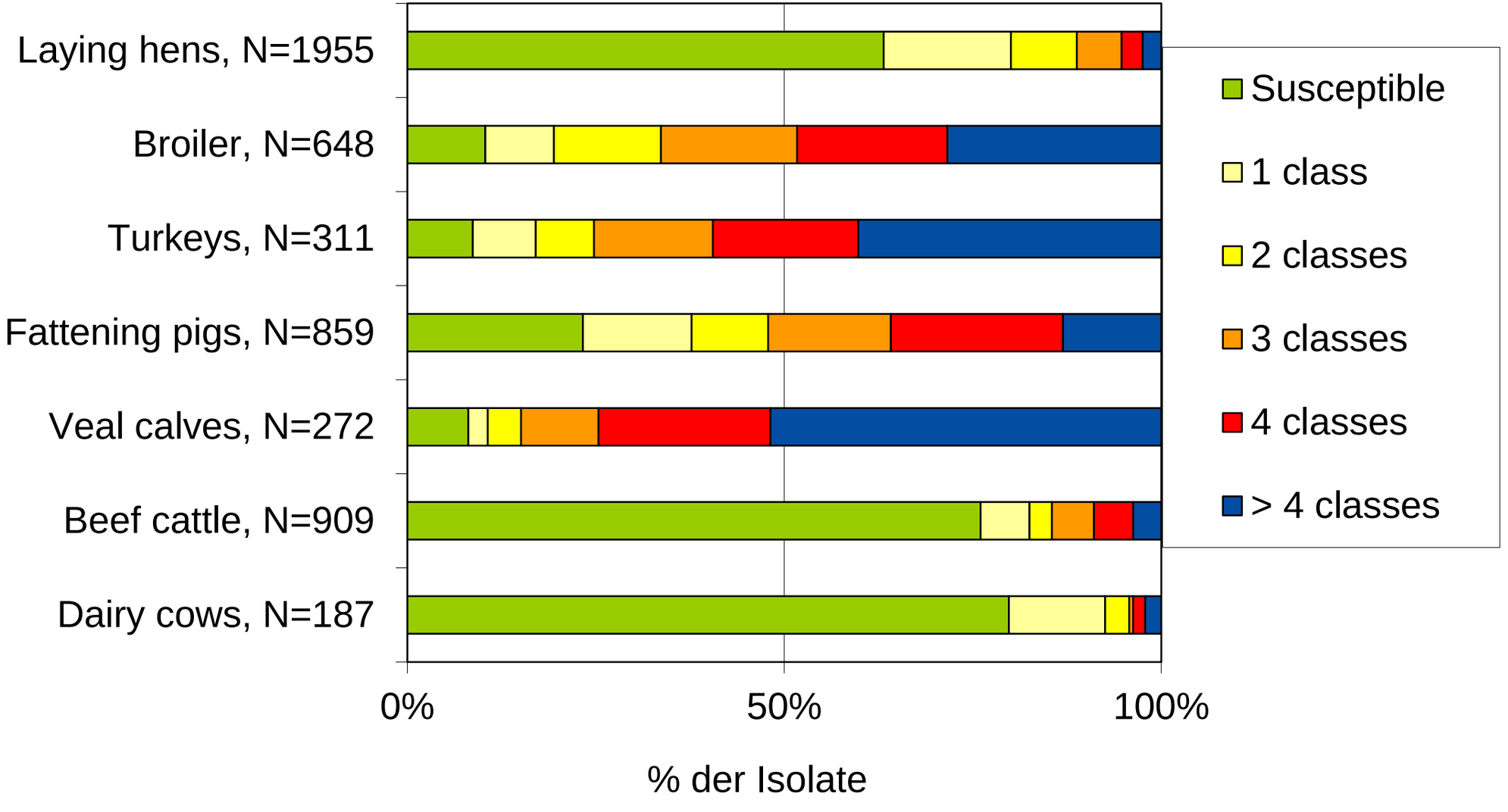
- Difference between different levels of health care provision
- Resistant bacteria also in ambulatory service
- Multiresistant strains are widespread
- Divergent trends for MRSA and ESBL/AmpC producing *E. coli*

- Yes, we do have a problem and need to take action

Resistance in the food chain 2014 *E. coli*



Resistance in *E. coli* from farm animals, 2009-2011



Actions taken for reduction

German strategy against antimicrobial resistance (DART)

- First launched in 2008
- Updated as DART 2020 in 2015

Common approach of

- Ministry of Health
- Ministry of Food and Agriculture
- Ministry of Education and Research

DART

Principle of

- Defining target/ directions
- Accepting responsibilities
- Defining players
- Designing measures
- Revisiting results

Example –
Antimicrobial use in Veterinary Medicine

- Guidelines for prudent use since 2000
- In 2011 first national collection of data on antimicrobial sales in Germany
- 1706 tons were sold to veterinarians for use in animals
- Intensive public debate
- Common sense: This needs reduction

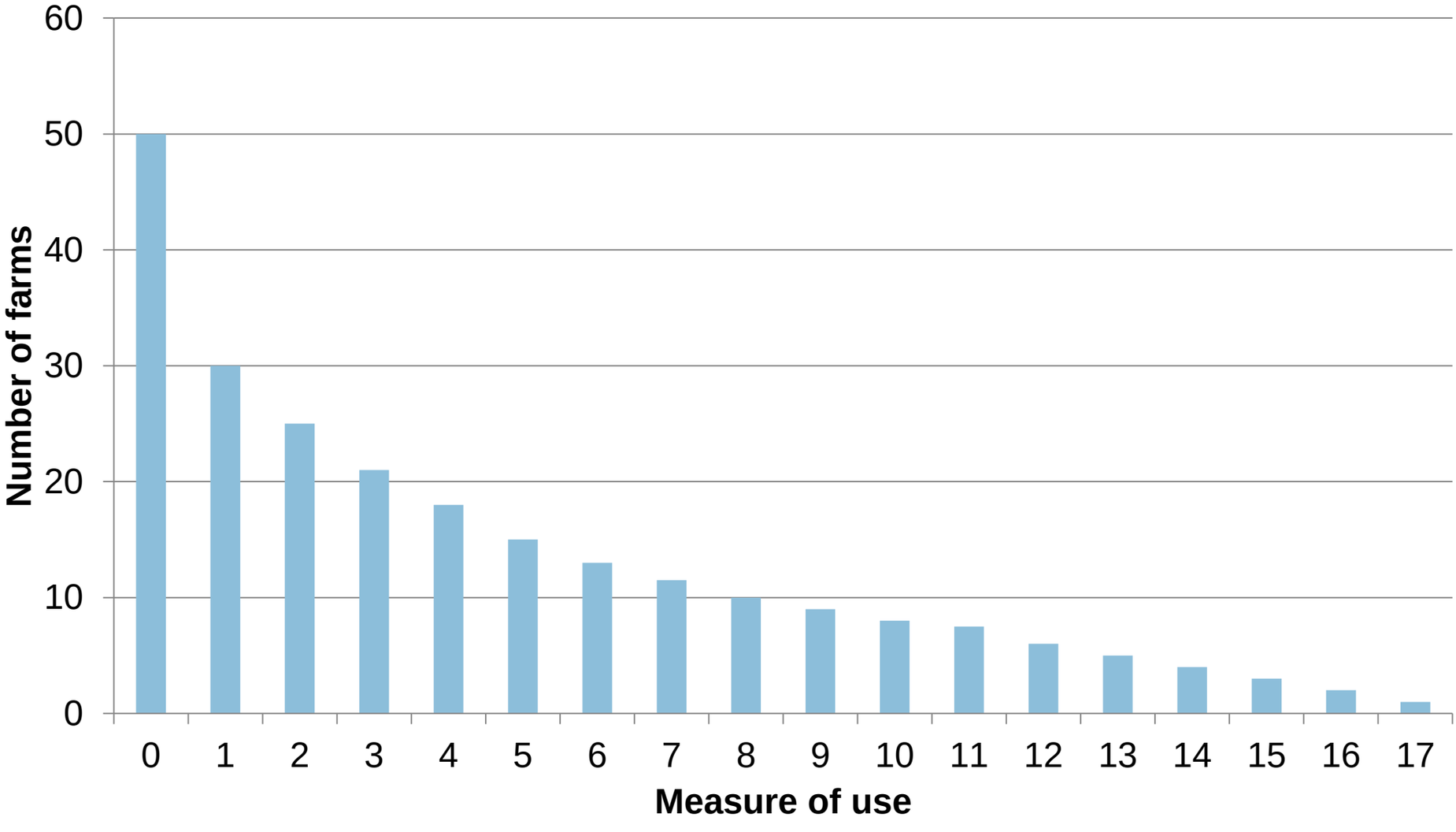
- Actions taken by private and public sector

Measures taken (public sector)

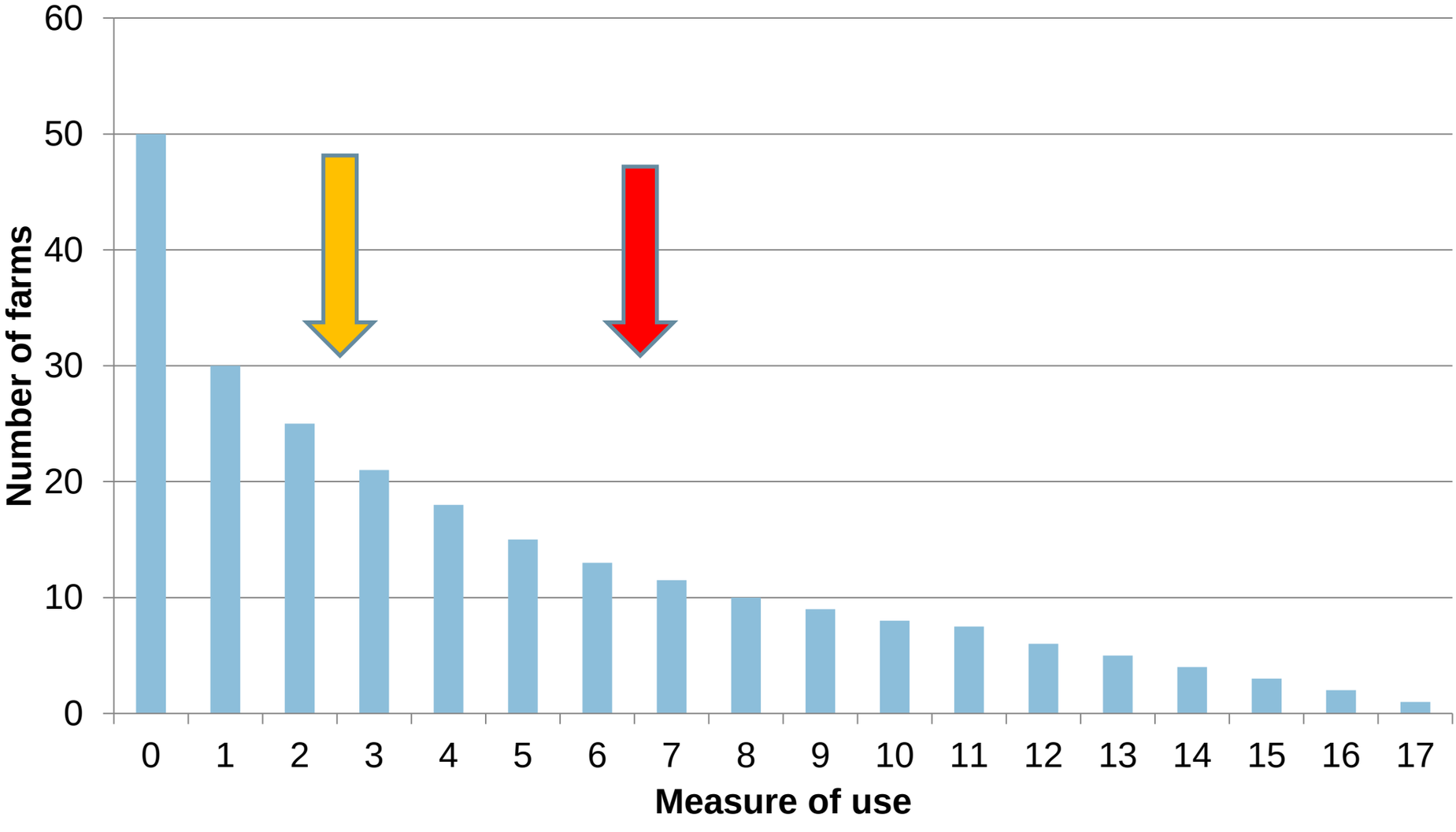
Change of German drug act

- Meat production holdings need to register their antimicrobial use in a state database
- The extend of antimicrobial use is measured and targets are defined per production type based on the current use
- Farmers have to compare their use with the target
- High users need to take action

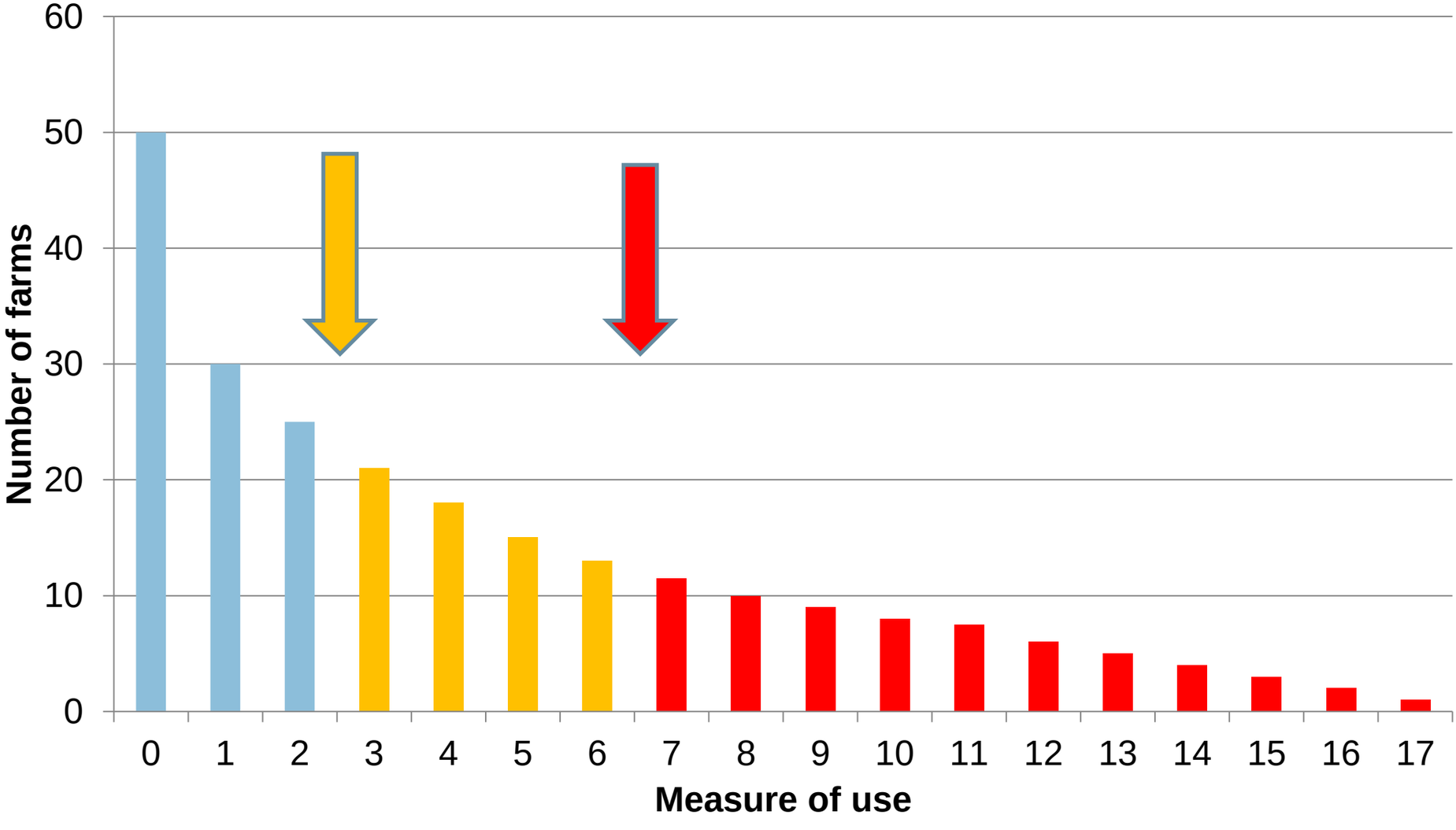
Principle of flexible target values



Principle of flexible target values



Principle of flexible target values



What‘s the consequence?

Use above median (yellow bars)

- Message: Your use is above the average
- You should:
  - Consider reasonss and reduction options with your veterinarian

Use in upper quartile (red bars)

- Message: Your use is far above the average
- You have too
  - write down a strategy for reduction (with your vet) and
  - present it to the local veterinary authority for evaluation

General idea

- Target values should be feasible
- ➢ If 75 % of farms can reach the target, this is feasible

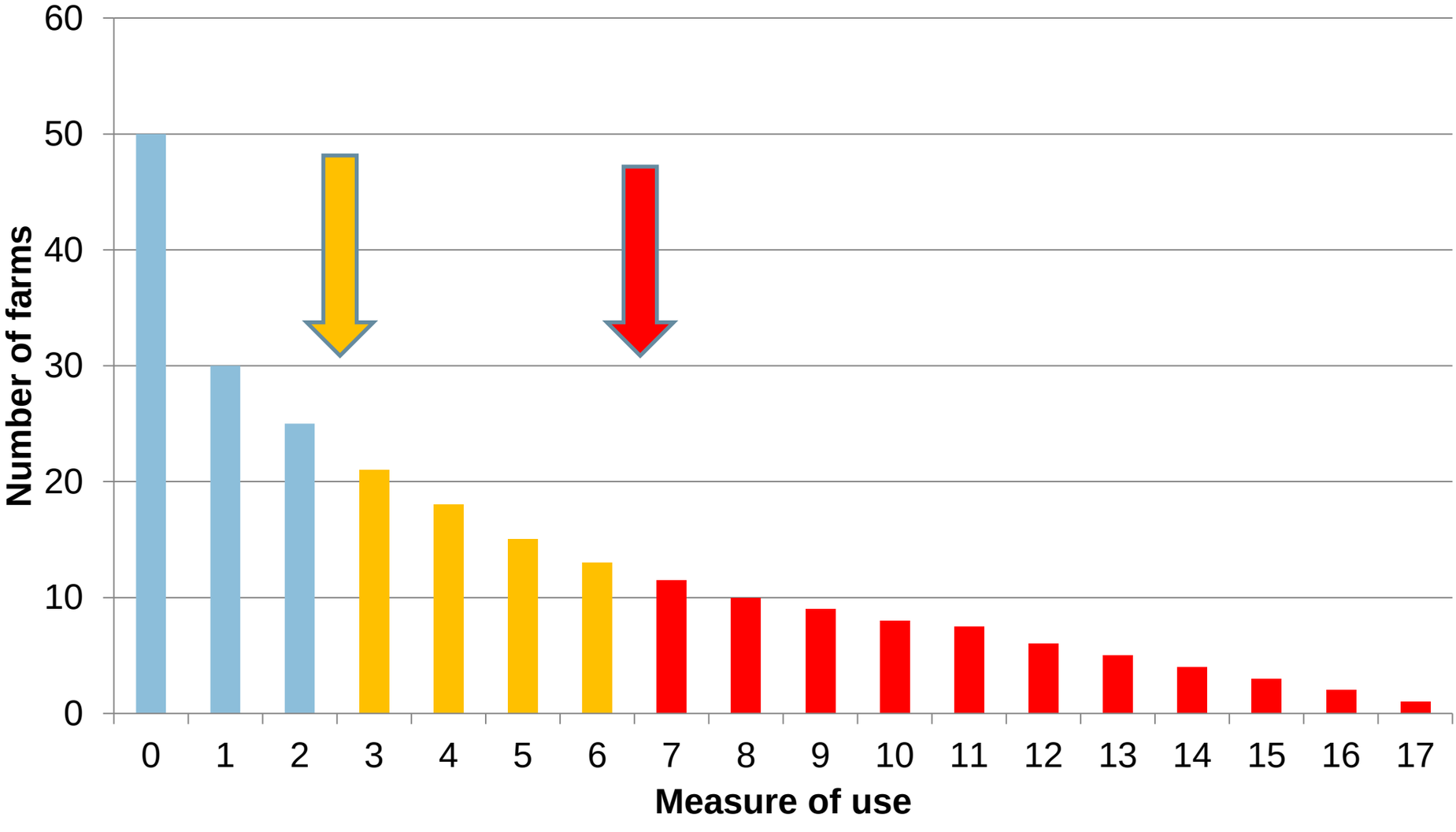
- High users are assumed to have the greatest reduction potential

- If high users reduce, target values may drop over time

- New farms are addressed

- Further reduction etc.

Principle of flexible target values



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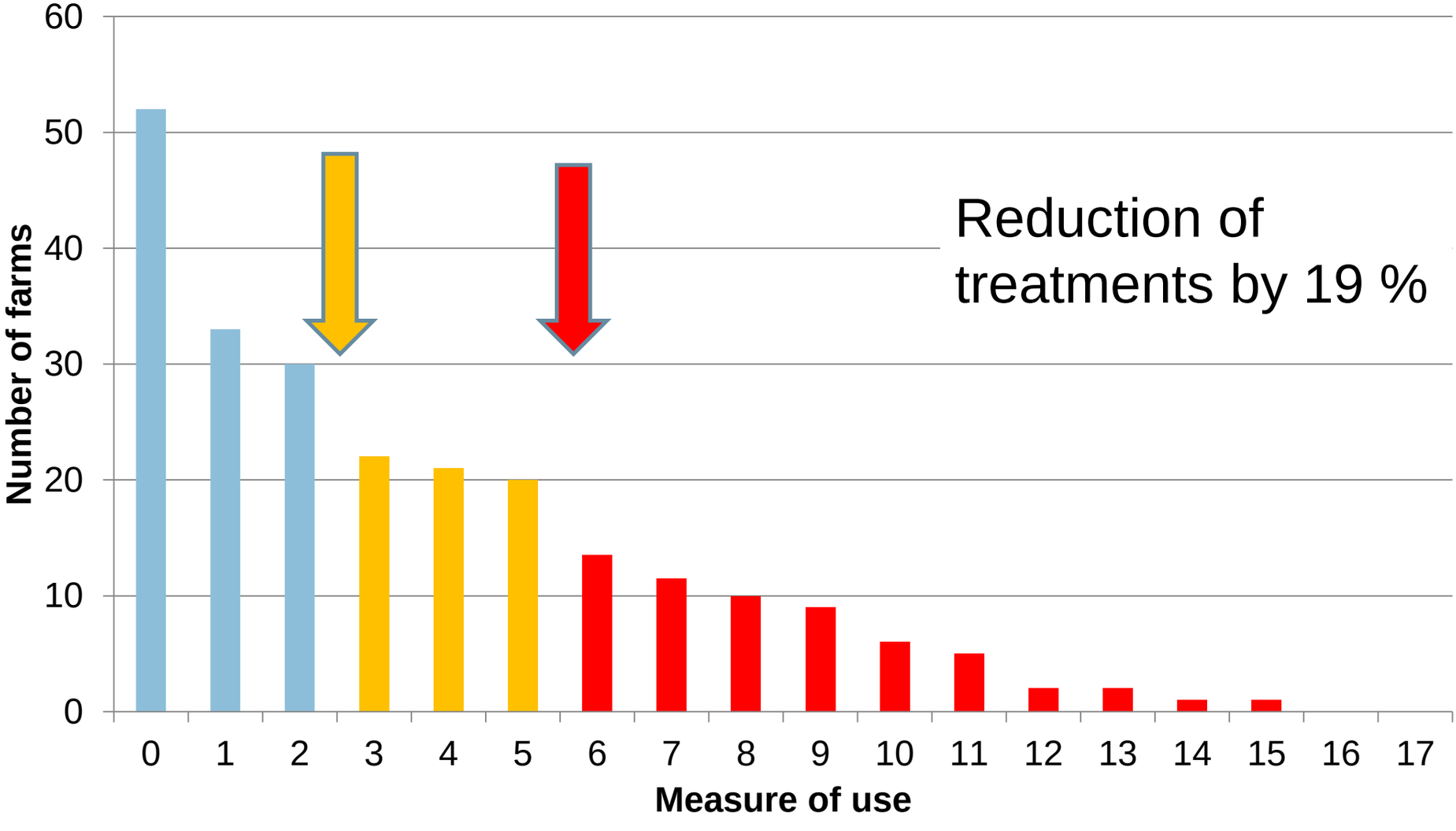
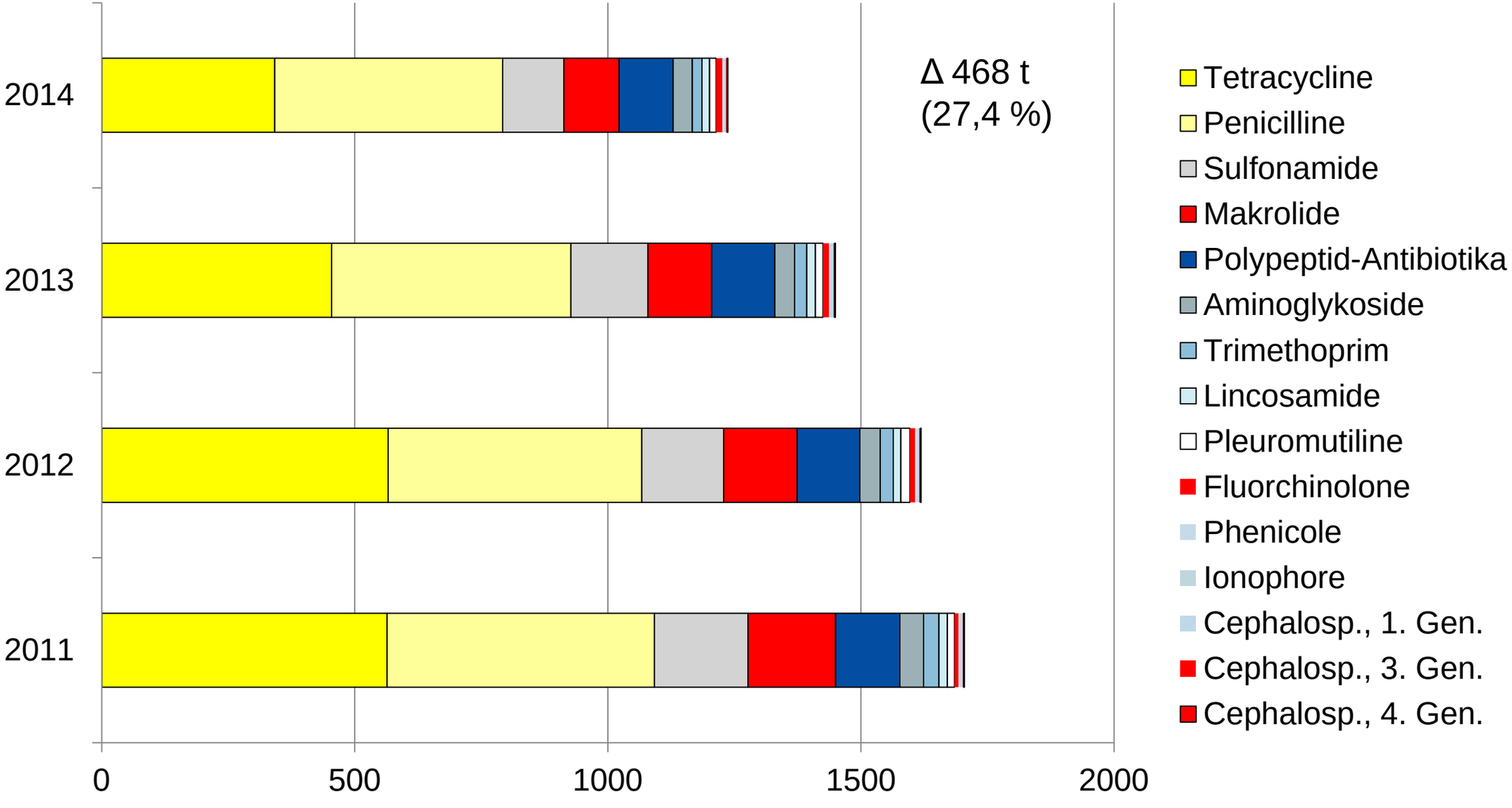
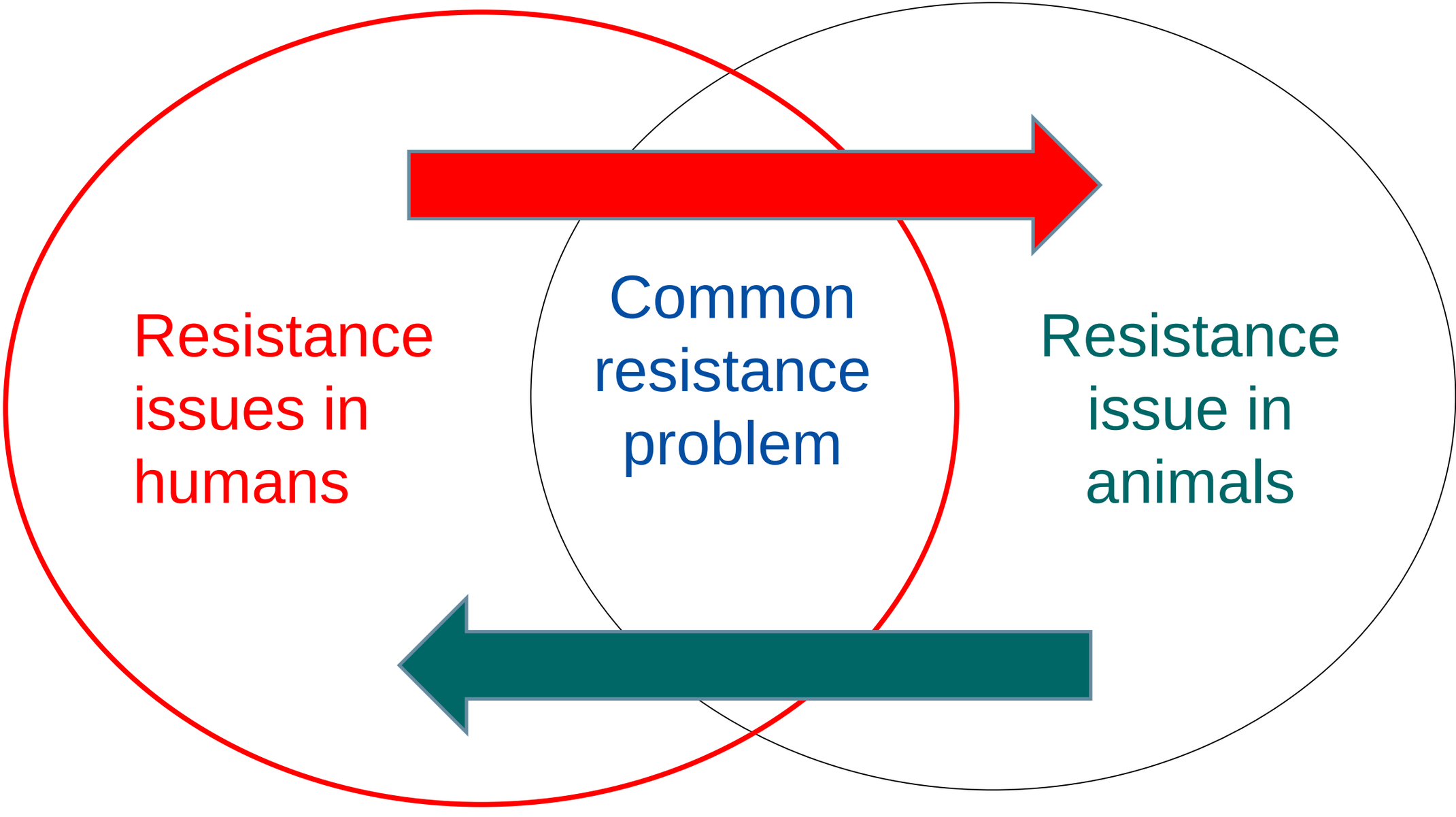


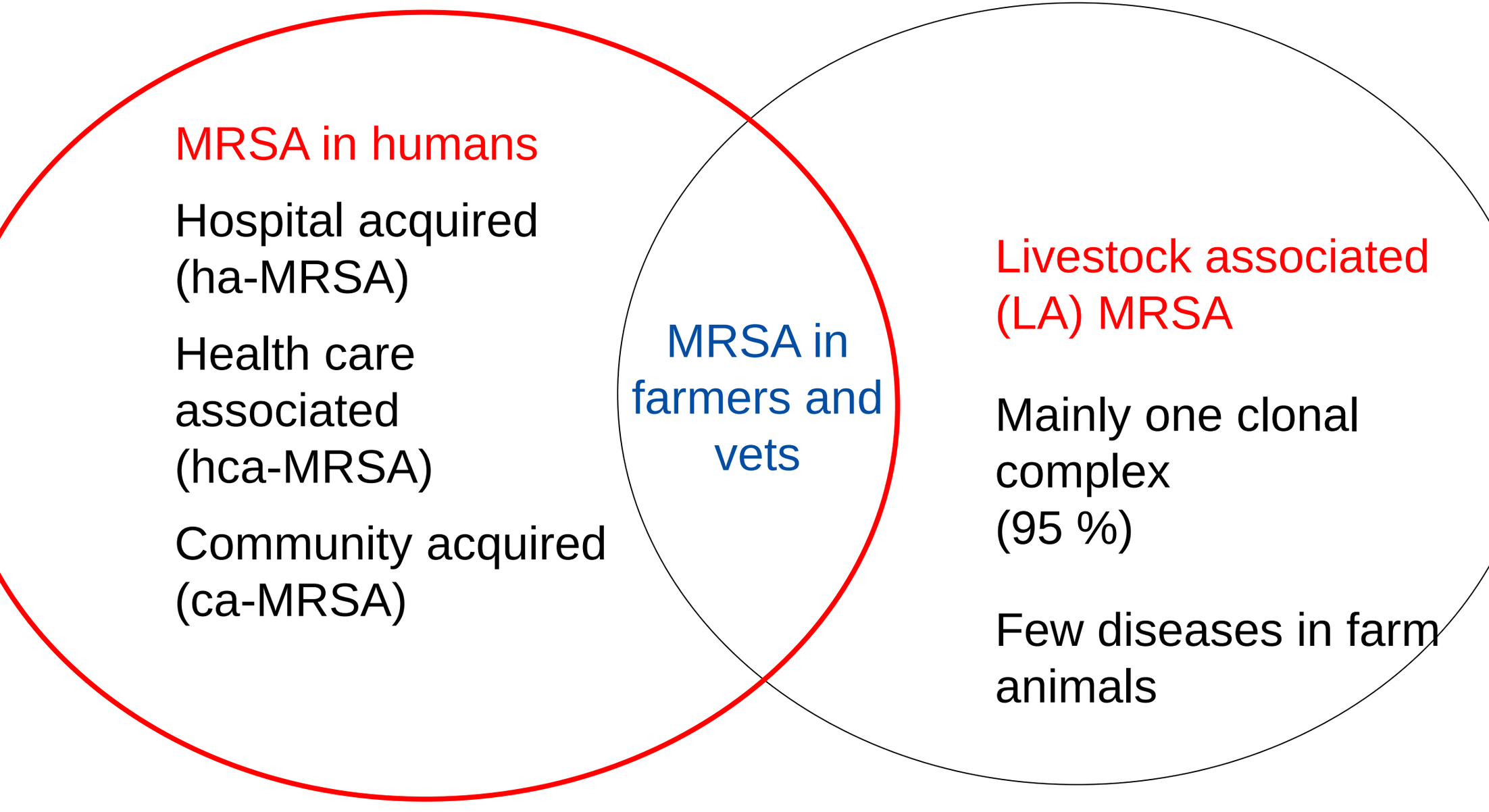
Sales of veterinary antimicrobials in (BVL 2015)



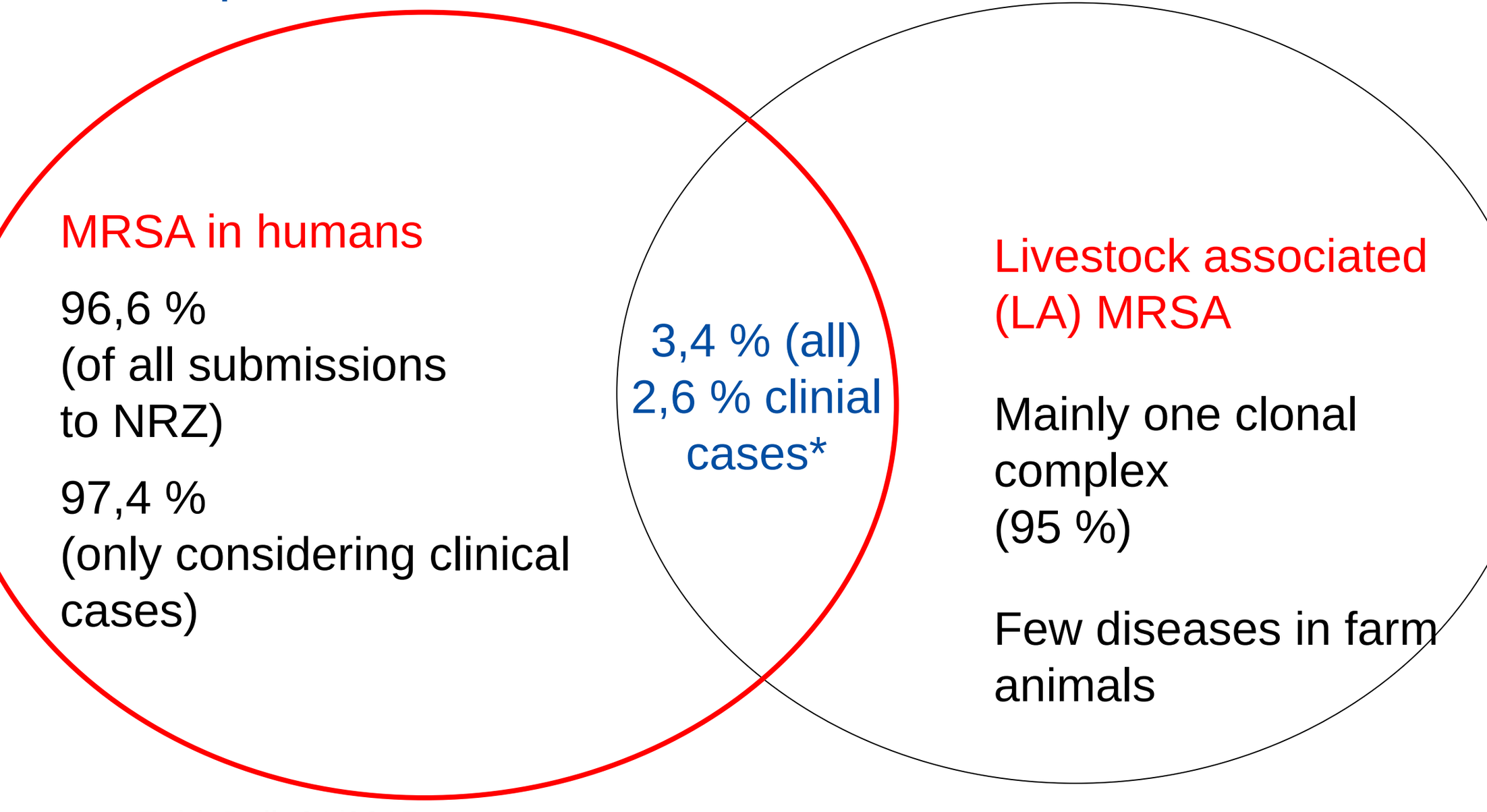
What is one health about?



Example MRSA in farm animals and humans

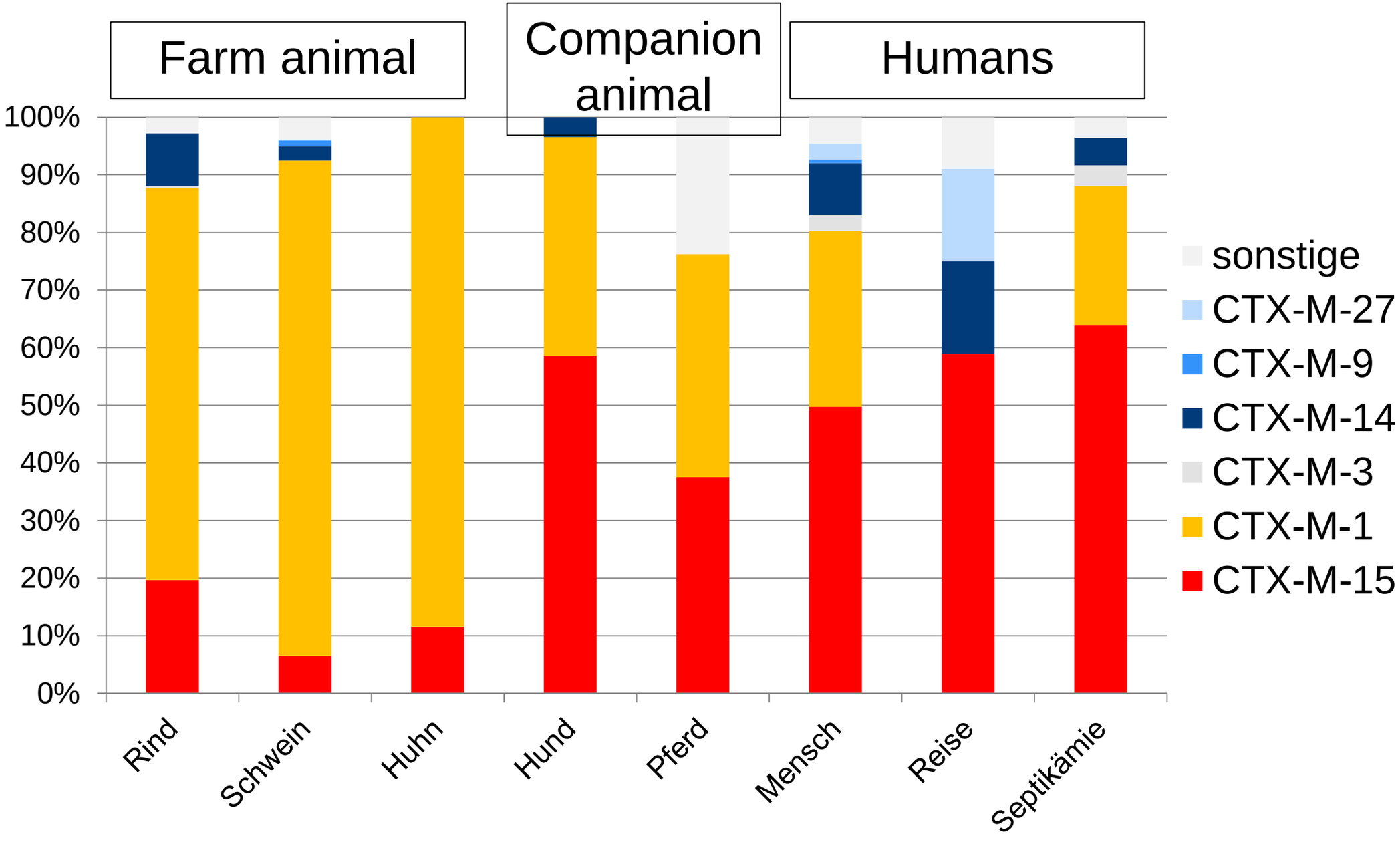


Example MRSA in farm animals and humans

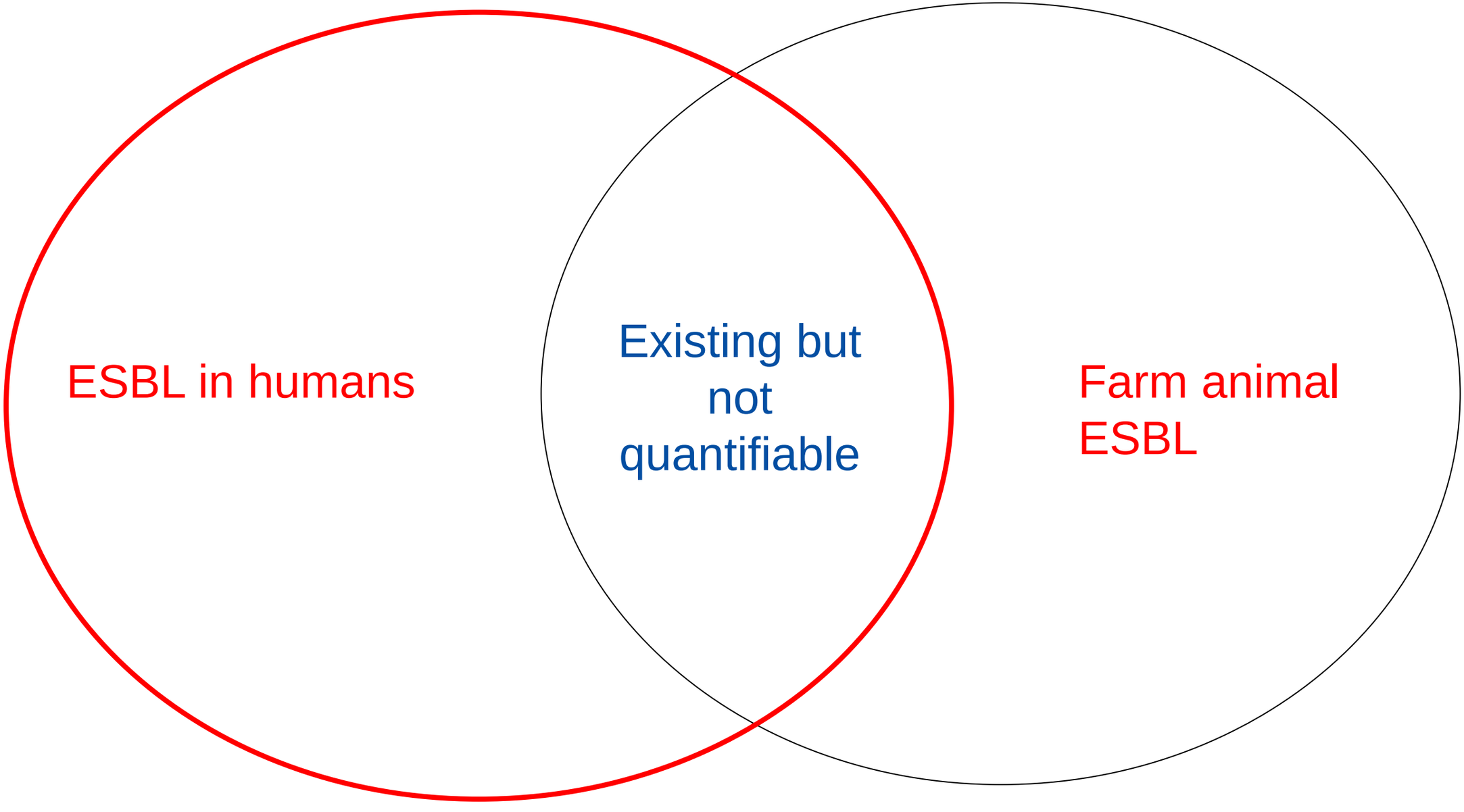


Epid. Bull. 31/2015

CTX-M-Types of ESBL of different origin



ESBL in farm animals and humans



Summary

- Antimicrobial resistance is an important public health topic in Germany
- Public debate and research/monitoring results have led to action on different levels
- The direction of the development is positive
- The common problem can be identified for some bacteria but only estimated for others
- Reducing antimicrobial resistance is a common task for human medicine and veterinary medicine, each at its place

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Thank you for your attention