

Reducing the use of critically important antimicrobials – veterinary medicine

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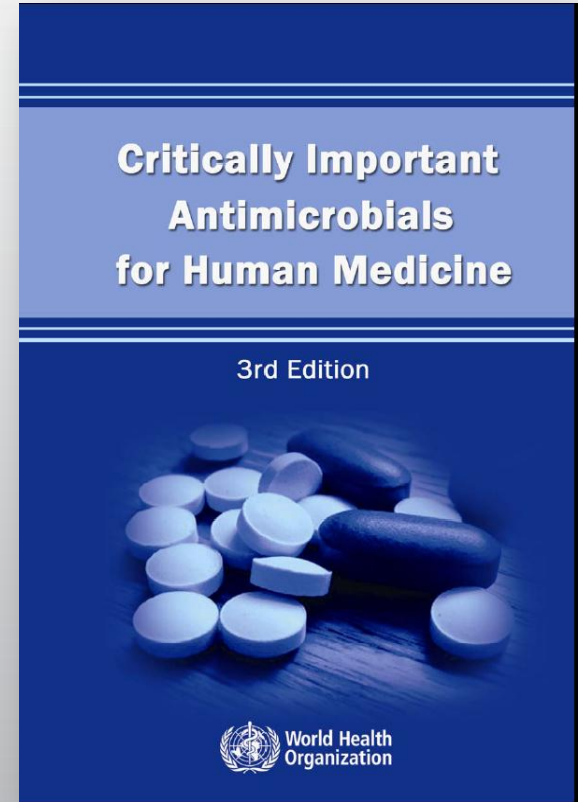
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Critically important antimicrobials

- Top 3 according to WHO
 - fluoroquinolones
 - 3rd & 4th gen cephalosporins
 - macrolides
 - + carbapenems?



Example of text linked to authorisation, EU (SPC text)

” ...reserved for clinical conditions which have responded poorly, or are expected to respond poorly, to more narrow spectrum antimicrobials”.



Other drivers...

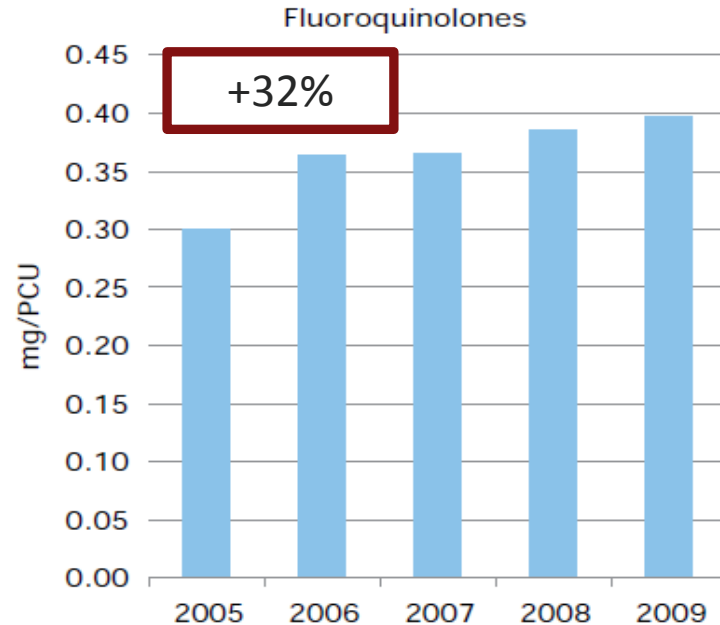
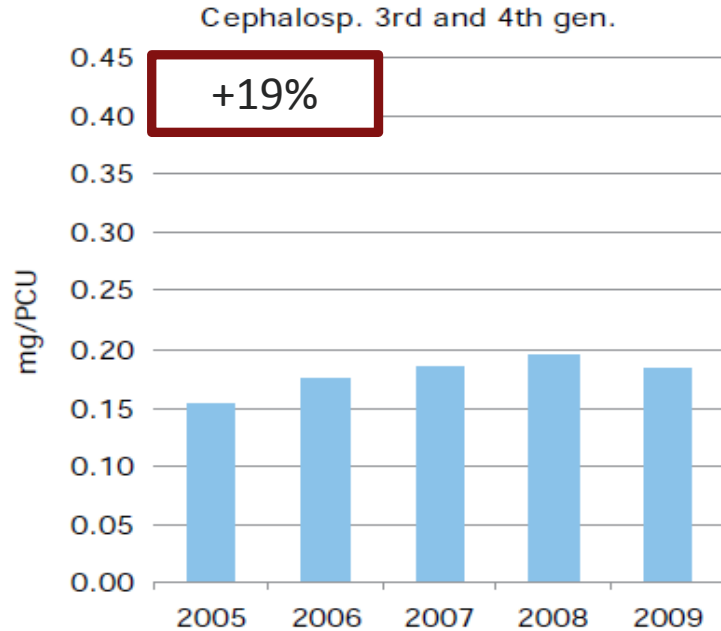
- marketing
- information on internet
- ...



Original illustration removed for
copy right reasons

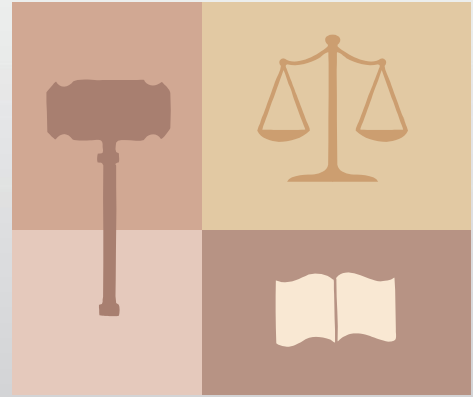
Trends in sales...

Figure 6. Sales in mg/PCU of 3rd and 4th-generation cephalosporins (in DK, FR, NL, SE, UK) and of fluoroquinolones (in DK, FI, FR, NL, NO, SE, UK), 2005-2009



Options for control

- Regulatory restrictions
- Voluntary restrictions
- Reduced need
- Increased awareness & guidelines



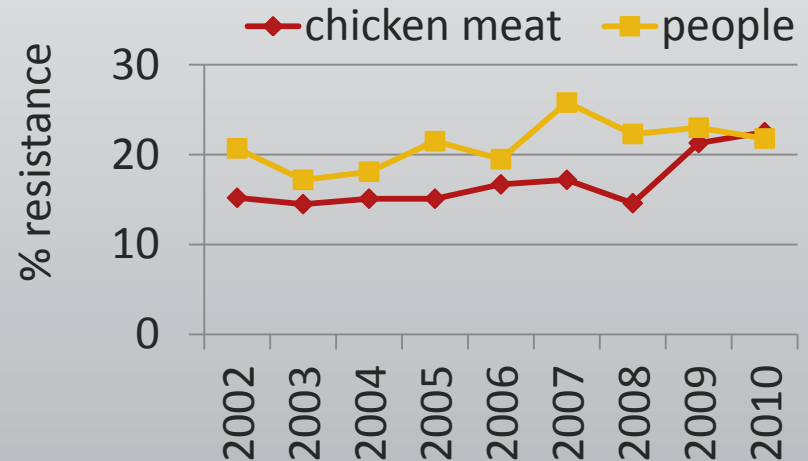
Legal restrictions I: withdrawal (=ban)

Example from US

ban of fluoroquinolones for poultry 2005

Complex risk assessment,
Complex process

Fluoroquinolone resistance
C jejuni

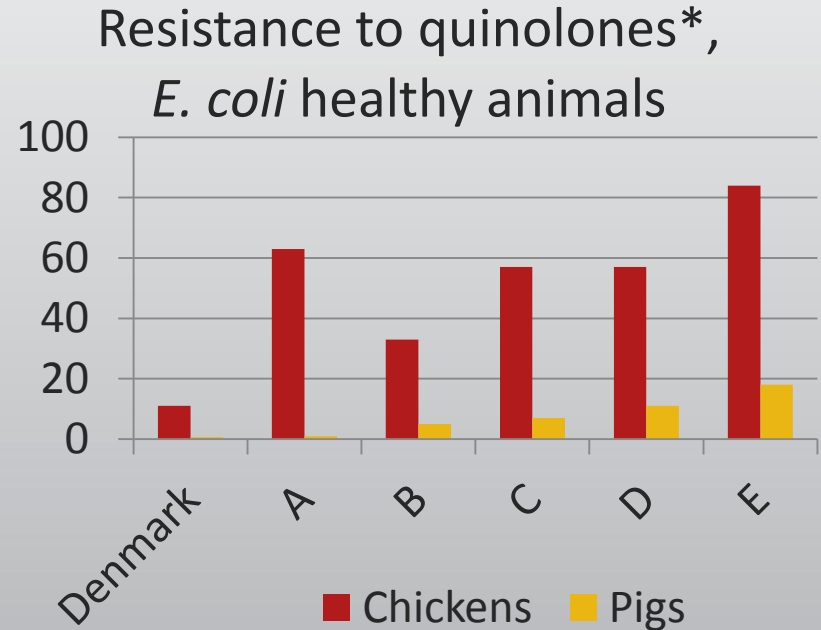


Legal restrictions II: specified limitations

Denmark

- food animals
- mandatory susceptibility testing documenting need
- mandatory notification

Order DK 134/2003



EFSA -AMR report 2009

* nalidixic acid



Legal restrictions III: off-label restrictions

= only permitted to use as specified in authorisation

Example US

- cephalosporins
- fluoroquinolones
- glycopeptides

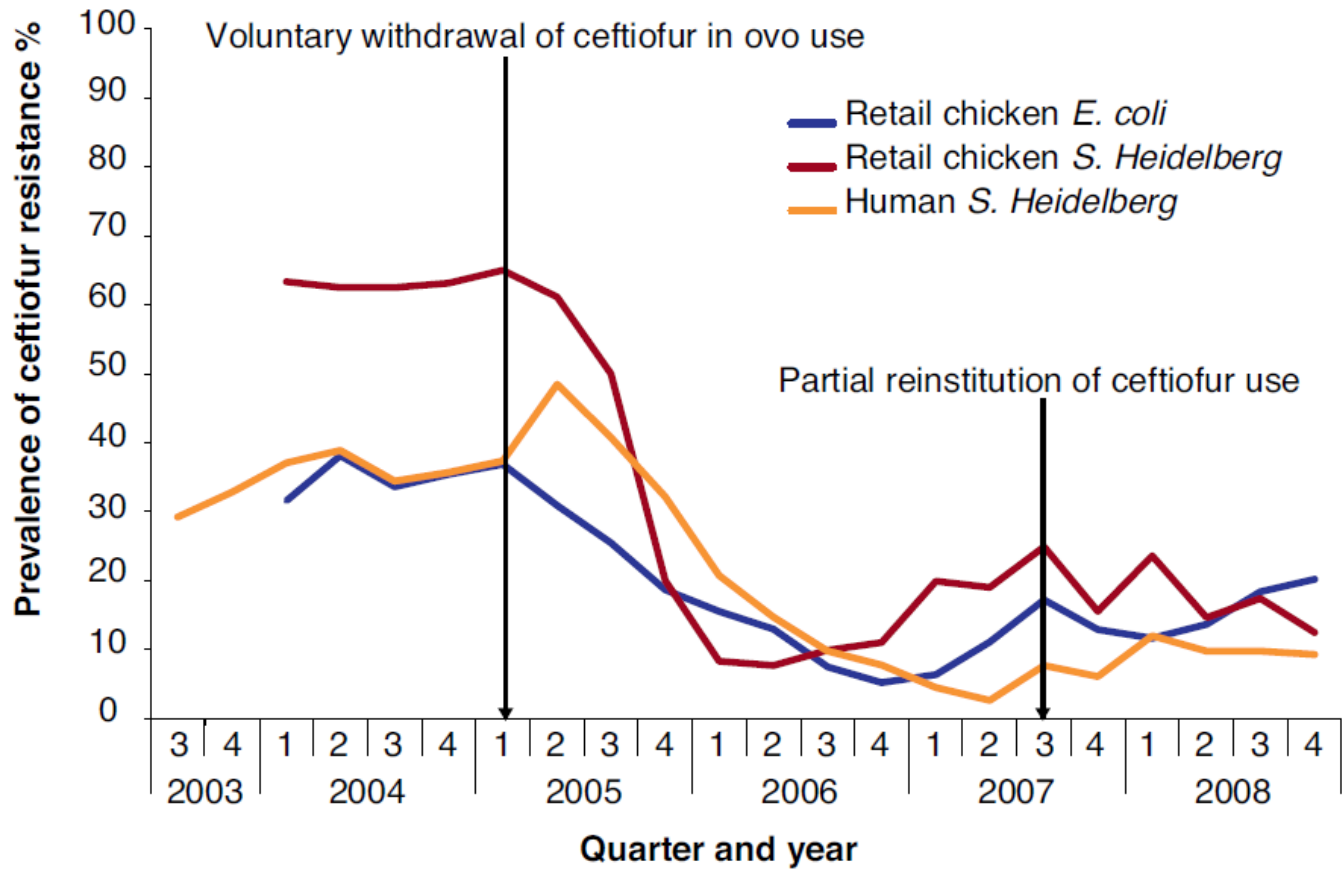
Does it work?
How to monitor?

Voluntary agreements

- *Salmonella* Heidelberg:
Increase in resistance to
3rd gen cephalosporins
noted in CIPARS 2003
- Almost all hatcheries
in Quebec injected ceftiofur
in eggs or day olds
- **Voluntary stop** Feb 2005



Source: Dutil et al, 2009, EID, 16:48-



Source: Dutil et al, 2009, EID, 16:48-

Reducing need

example from Norwegian aquaculture



- Late 80s early 90s high volumes of antimicrobials used
 - environmental concerns
- Surveillance of use 1989
 - all prescriptions reported on special form
- Vaccination strategies introduced

Grave et al. 1999. Acta Vet Scand. 40:185-

Lillehaug et al. 2003. Diseases of Aquatic Organisms. 53:115-



Sales of antimicrobials for farmed fish, NO

Total sales (tonnes) & biomass slaughtered

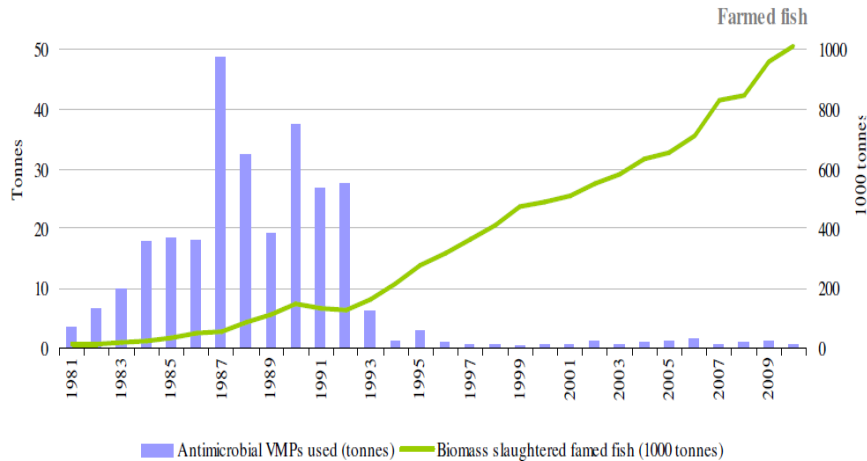
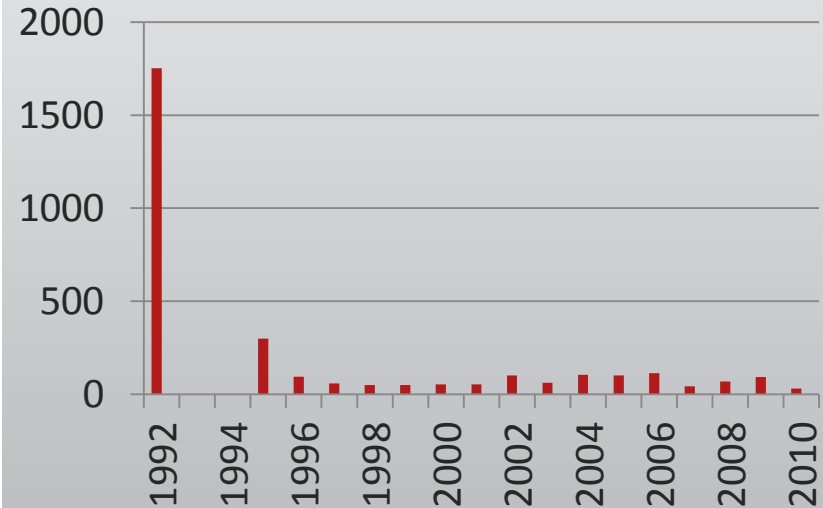


FIGURE 5. Total sales (kilograms of active substance) of antimicrobial veterinary medicinal products (VMPs) for therapeutic use in farmed fish in Norway in the period 1981-2010 versus produced biomass (live weight slaughtered) farmed fish. Preliminary data for 2010 for slaughtered biomass.

Sales of quinolones (tonnes)



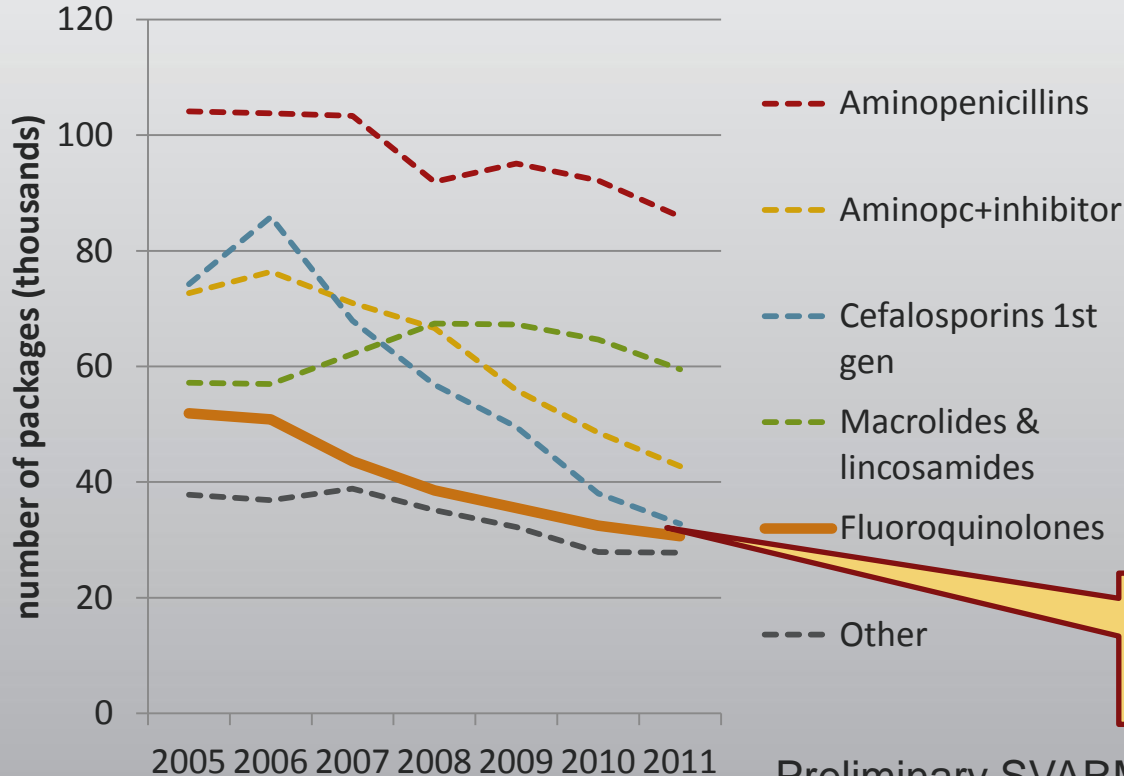
Source: NORM VET 2010 & 2001;
Grave et al 1999, JAC, 43:243-

Quinolones=
flumequin, oxolinic acid



Increased awareness & guidelines

Example SE: sales of antimicrobials for dogs, packages (thousands)



Total No of packages sold reduced by 32% since 2006

- 39%

Preliminary SVARM 2011



Why change?

- Triggers
 - Information and media attention (MRSA, MRSP...)
 - Statistics on use
 - Perceived problems with multiresistant inf.
- Some activities
 - Seminars, workshops, lectures...
 - Local work on guidelines for antimicrobials & inf. control
 - Revised guidelines
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