

DANISH EU-PRESIDENCY 2012

COMBATING ANTIMICROBIAL RESISTANCE – TIME FOR JOINT ACTION

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Stop overuse of antibiotics in animals – rational use

Annette Cleveland Nielsen

**Chief Veterinary Advisor, Epidemiologist, DVM, Ph.D.
Danish Veterinary and Food Administration**

eu2012.dk



**Ministry of Food,
Agriculture and Fisheries**



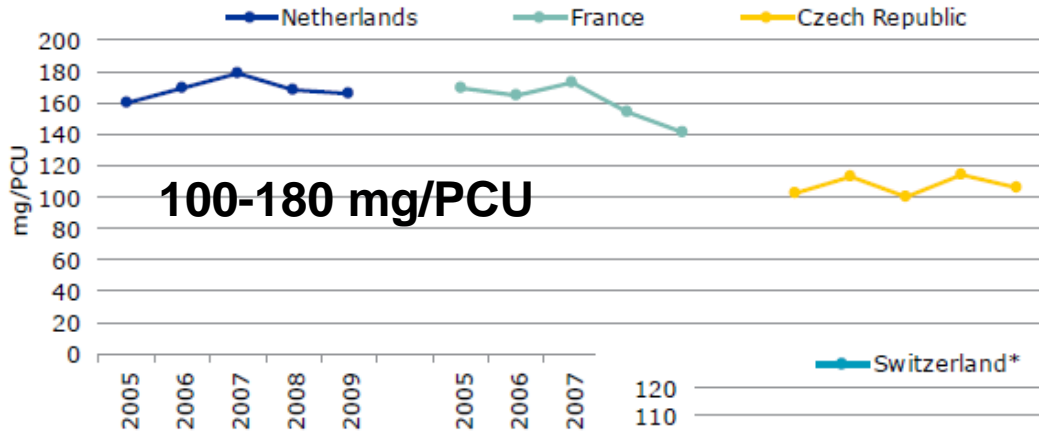
AM use in animals

Three major administration routes for treatment:

- 1) Growth promotion - now banned in EU**
- 2) Flock treatment through water- or feed medication**
- 3) Individual treatment of sick animals by injections**

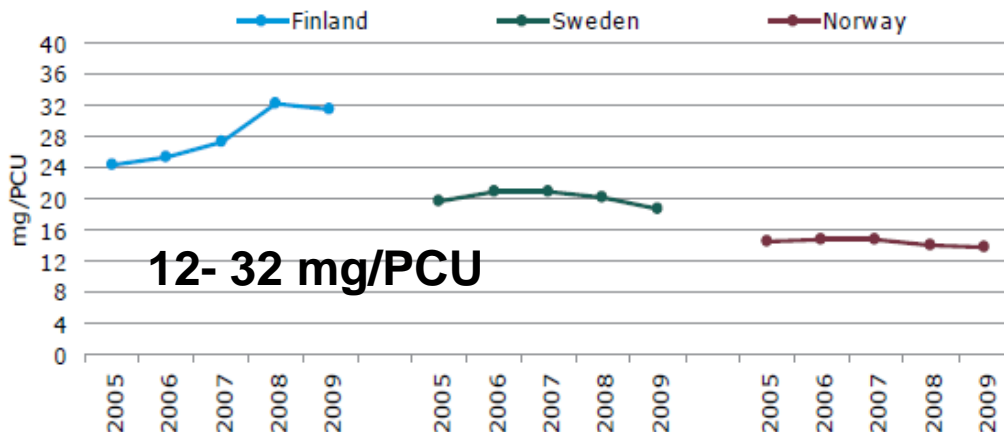
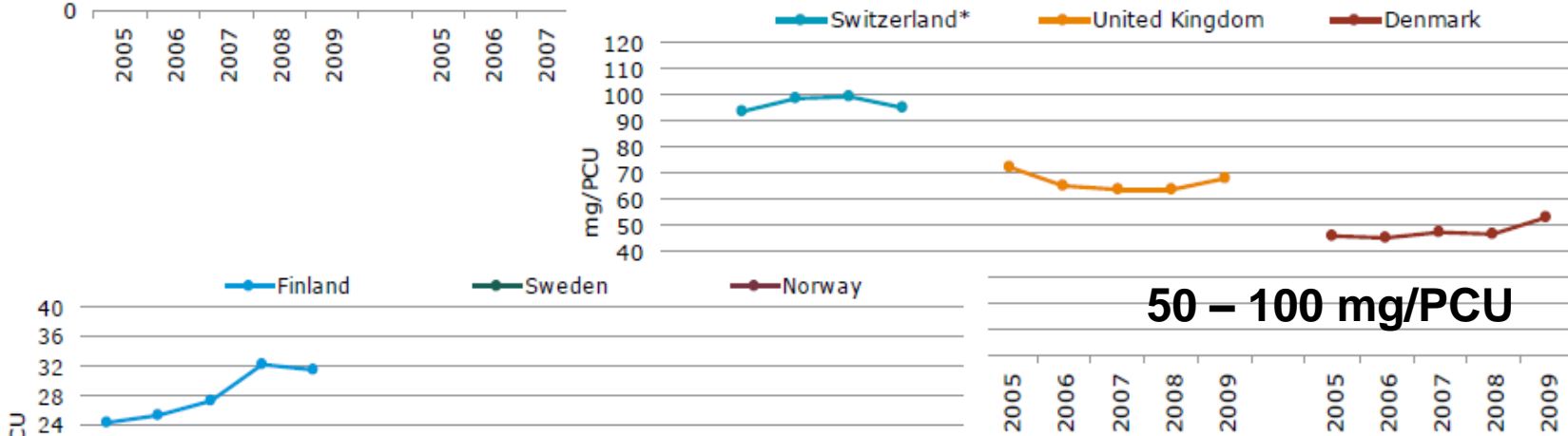
AM use in MS sales in mg/ PCU , EMA 2011

Large differences in AM use and in Food Production Animal populations



PCU :Taking differences in animal populations into account

Large differences use=different scales



Definition of overuse

Without reasonable doubt you overuse if you:

- **Lack a proper diagnosis**
- **Continuously unconsciously flock medicate animals**
 - **Inevitably treating healthy animals and**
 - **Not discovering lack of disease**
- **Medicate preventively without disease or epidemiology**
- **Are relying on sales of AM as part of your income**
- **Lack prevention strategies reducing need for AM**
(vaccination, infection control etc.)

Reducing overuse Top 6 strategies

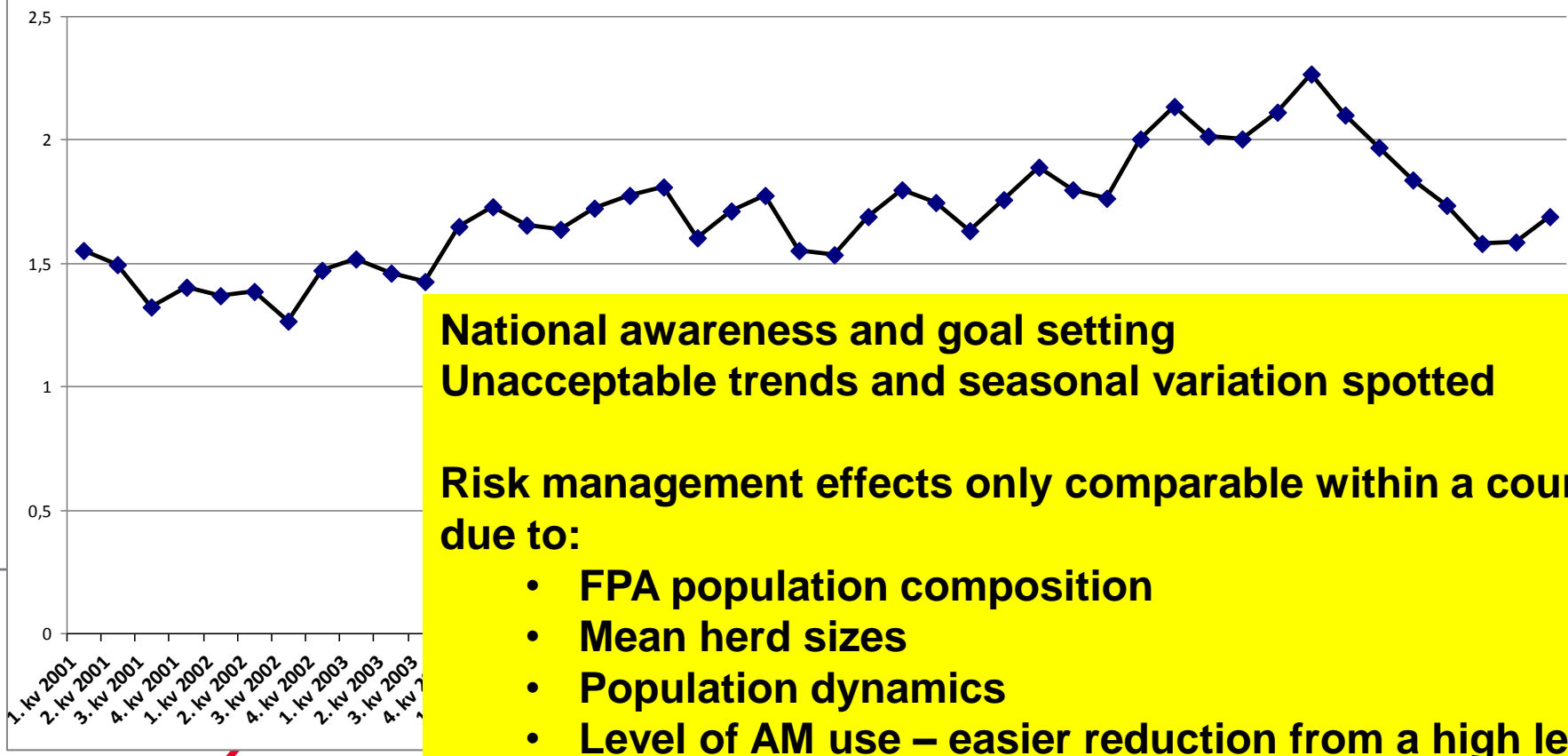
- 1. No sales profit from AM for veterinarians BUT**
- 2. One to One relation between farmer and vet**
- 3. Legislation reducing CIA (Critical Important Antibiotics)**
- 4. Awareness of use on the country, vet and farmer level**
- 5. Threshold values for AM use on the herd level and
Benchmarking of herds and vets**
- 6. Setting political goals for reduction**

Reducing overuse

Risk management – measures of effect

Usage in relation to population at risk

AM use in swine 2001- 2011
gram / swine / year and quarter



National awareness and goal setting
Unacceptable trends and seasonal variation spotted

Risk management effects only comparable within a country due to:

- FPA population composition
- Mean herd sizes
- Population dynamics
- Level of AM use – easier reduction from a high level

Reducing overuse – effects

Top 6 strategies – No. 1 and 2

1) No sales profit for veterinarians (Scandinavia)

BUT

2) One to one relationship between farmer and vet and herd health contracts securing vets income and position (Scandinavia and NL)

Effect: >40% reduction in DK and >20% in NL

NO side effects in DK from no sales profit !

Vets did not go out of business

Incentive to become a vet was not affected

Reducing overuse

Top 6 strategies – No. 3 Legislation on CIA

DK: Only justified use of CIA

Laboratory tests showing no other AM effective

Not recommended treatment in guidelines

US, FDA 2005 ban of Enrofloxacin for poultry

2012 ban on extralabel and preventive use of cephalosporins in FPA

Norway: No cephalosporins marketed for FPA

NL: Lab. test before use and last choice in guidelines

Reducing overuse – effects

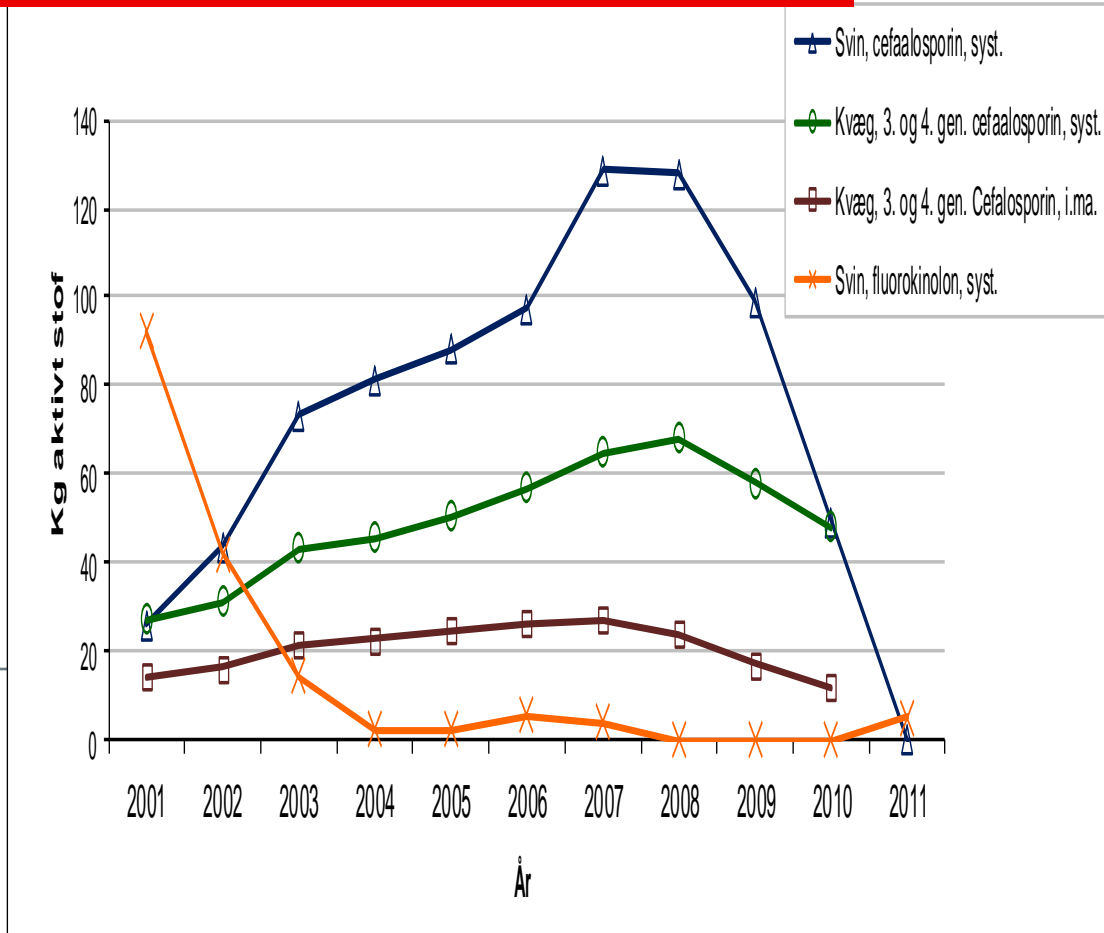
Top 6 strategies – No. 3 Legislation on CIA

2002 Fluoroquinolone legislation
Strategic use – lab tests

2007 Cephalosporin focus

Guidelines and supervision vets

23 % reduction, swine 2007- 2009



2010 Cefalosporins swine
Voluntary swine industry ban
Evidence based treatment guidelines

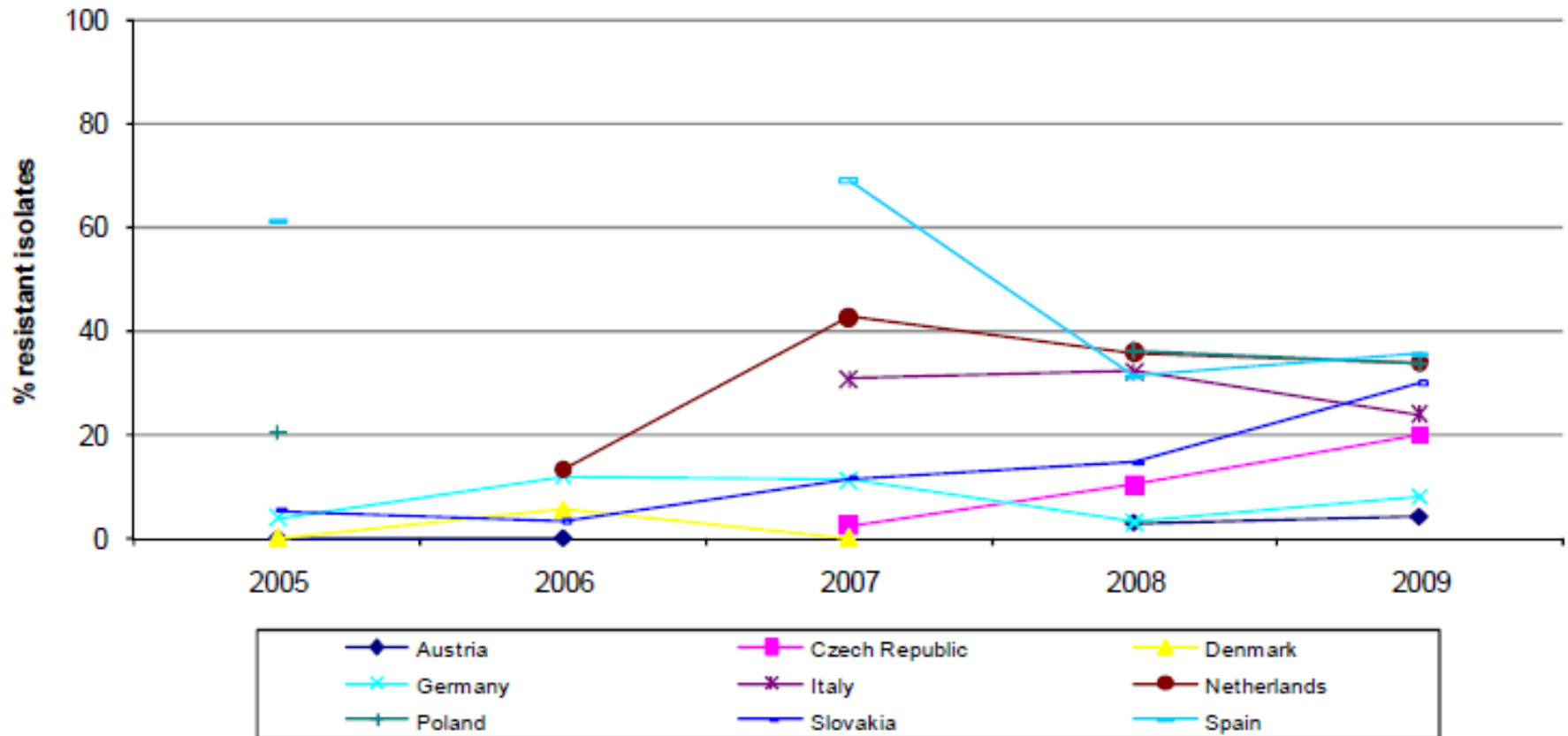
99,9 % reduction swine

No CIA use =
Reduced ESBL / multi resistance
Secure human treatment

Reducing overuse effects on resistant bacteria

No. 3. Legislation on CIA

Figure SA7. Trends in ciprofloxacin resistance in tested *Salmonella* spp. isolates from *Gallus gallus* in reporting MSs, 2005-2009, quantitative data



Source: EFSA 2009

Reducing overuse - effects

Top 6 strategies No. 3 Legislation on CIA

Cephalosporines (3. og 4. gen) and Fluorquinolones

DK IS THE LARGEST EXPORTER OF PORK IN THE WORLD

DK DO NOT USE CIA AND DO NOT NEED THEM

BUT

THEY CAN BE USED IF NEEDED

Reducing overuse

Top 6 strategies – No. 4, 5 and 6

Threshold values and benchmarking, awareness and goals

Targeting the top users results in the largest reduction

Threshold values, benchmarking

- **Supervision and audit of every vet – talk with them**
- **Graphs displayed – risk communication – show them**
- **Compare to colleagues / other farmers / national level**
- **Let them know how astray they are**

Awareness

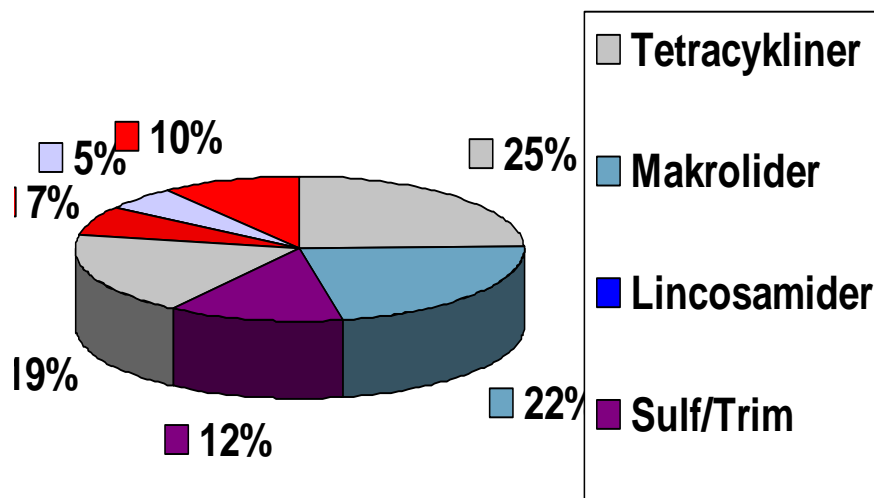
- **Of contribution to a problem and part of a solution –
herd health and treatment plans – DK and NL**
- **Knowledge of use**
- **Let them know what we have on them – self recognition**

Goals

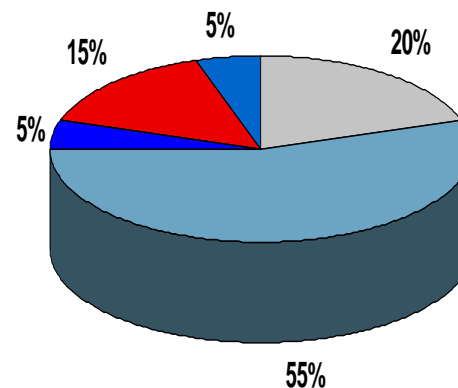
- **Something to strive for / a line in the sand – DK and NL**

Reducing overuse – Example No. 4 and 5 Awareness and Benchmarking of veterinarians

Example of prescription pattern for treatment of weaners used in supervision and audit controls



Colleagues /country level



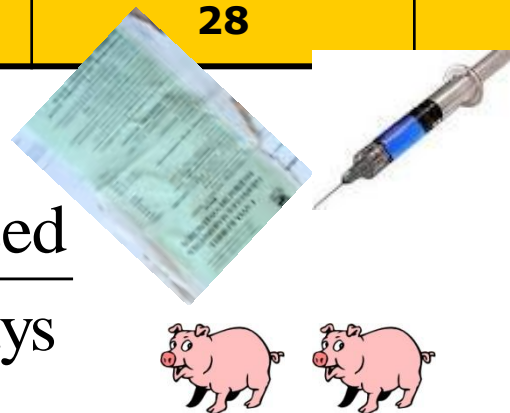
Specific vet

Reducing overuse

Top 6 strategies – No. 5 Threshold values on animal species and age-group level

9 months rolling avg.	Finishers	Weaners	Sows
National threshold value	4	14	2,6
Yellow Card Limit	8	28	5,2

$$\text{Consumption } n = \frac{\text{Amount of AM Used}}{\text{Number of Pig Days}}$$



Targets the 5-10% top AM using swine herds in Denmark

Reducing overuse

Top 6 strategies – No. 4 and 5 Threshold values, awareness and benchmarking of herds - Example Yellow card – risk communication

Årsopgørelse 01/02/2010 til 31/01/2011

CHR-nr.

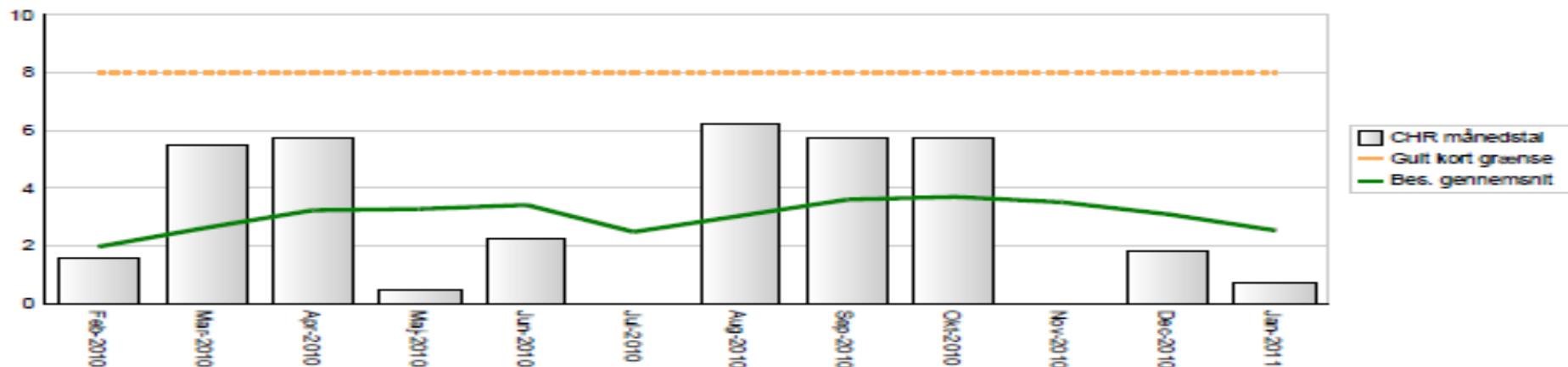
Adresse og bruge

Dyreart : 15 - Svin

Aldersgruppe : 57 - Svin over 30 kg, undtagen søer, gylte og orner

Region : Fødevareregion Øst

FVST's grænseværdi, løbende 9 måneder



GOOD RISK COMMUNICATION CREATES AWARENESS OF OVERUSE

Improve motivation to prudent use and reduced need for AM

- Vaccination
- Management reducing disease prevalence's
- Proper diagnostics
- Prudent use – according to treatment guidelines

Reducing overuse Examples of effects

No. 4, 5 and 6 Awareness, threshold values and goals

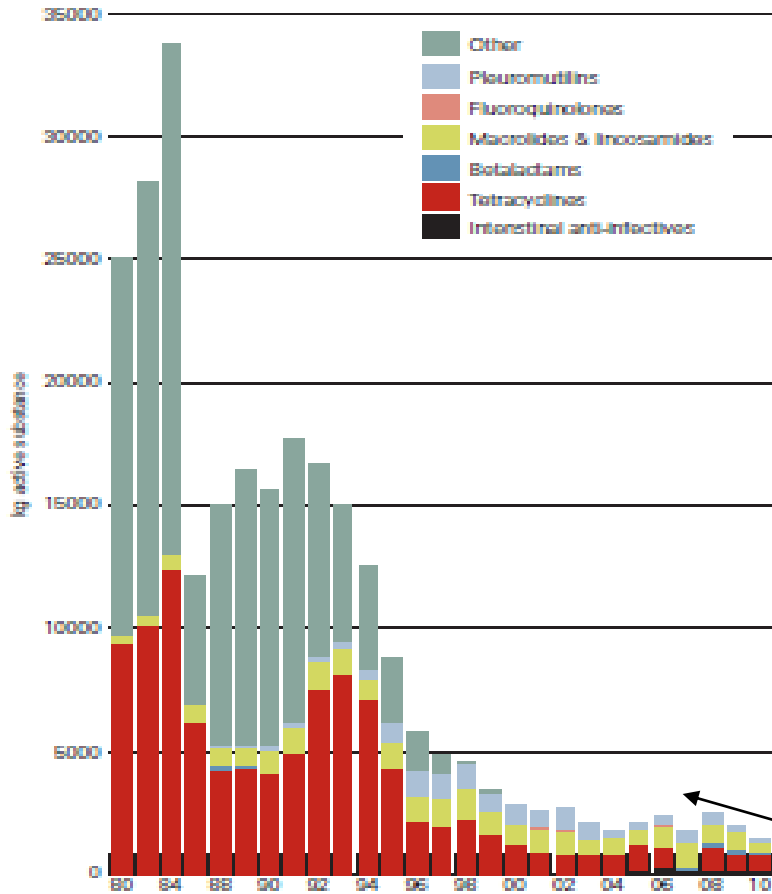
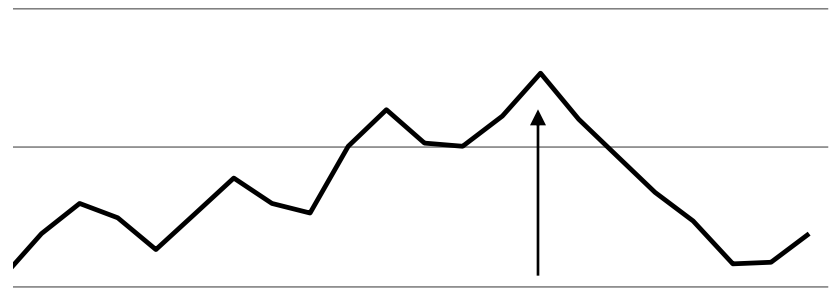


FIGURE AC II. Yearly sales of antimicrobial drugs authorised for group treatment measured as kg active substance (based on Table AC III and data from SWARM 2000).

ine 2001- 2011
year and quarter



2010 No. 4 Awareness farmers
Data based Risk management Farmer level

No. 5 Threshold values, benchmarking,
Yellow card for swine

Result: reduced flock medication
DK and NL 20-30% in 2 years
SE 38% in 5 years

No. 6 Political goal

DK 10 % reduction 2009 vs. 2013
NL 20% in 2011 and 50% in 2013

06
kv 2007
2. kv

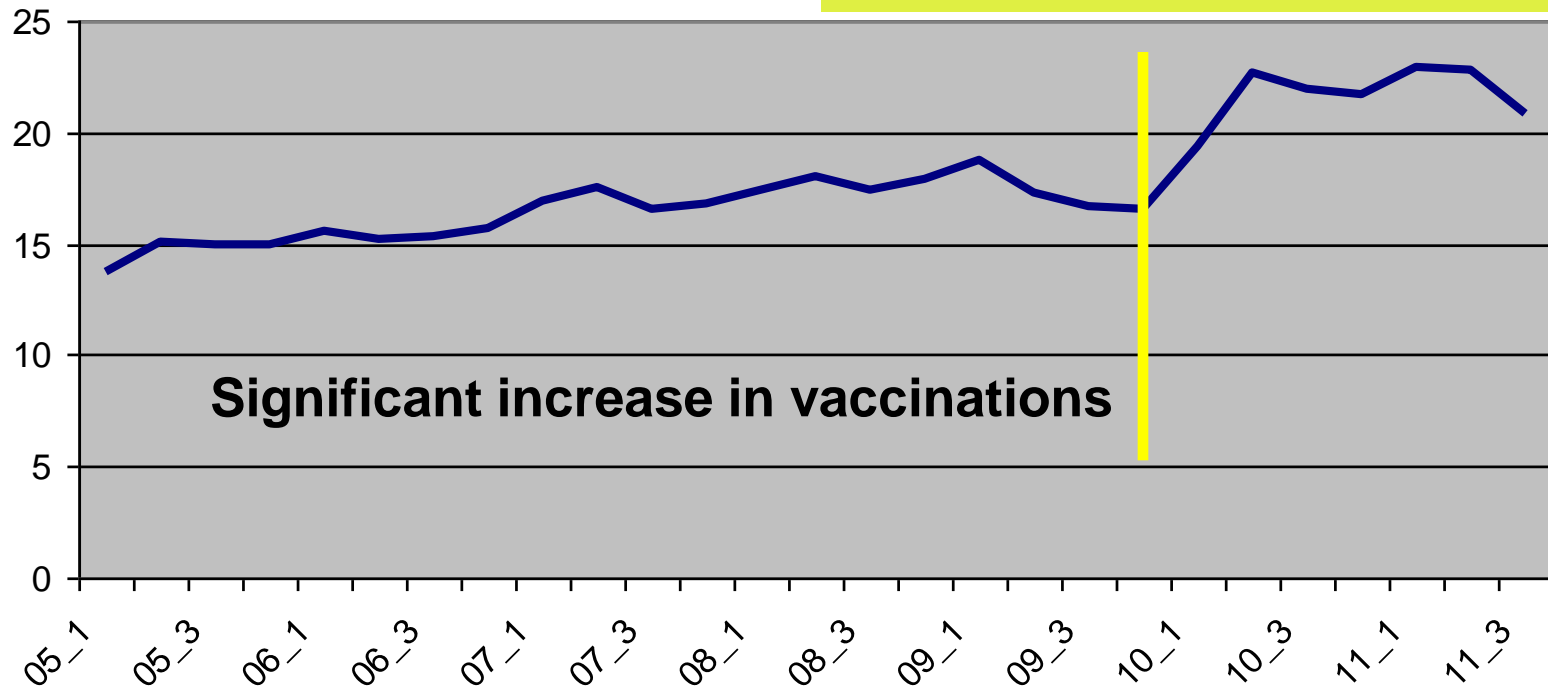
Reducing overuse effects

Top 6 strategies - No. 4 cont. Awareness - farmers are part of a solution

Prevention of disease – reducing AM use - Vaccination

Vaccinations rate in swine population

AM Threshold values and Yellow card



Significant increase in vaccinations

Reducing overuse

Evidence based treatment guidelines

A colour code indicate the most prudent choices based on four criteria

Efficacy

Susceptibility

Pharmacokinetics

Risk

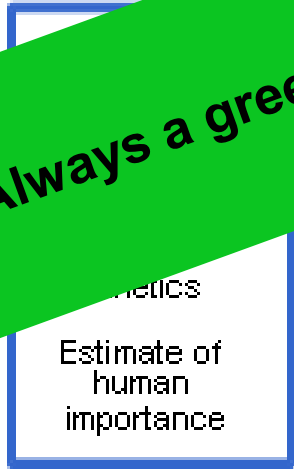
Example : susceptibility >80%,
And high score in
pharmacokinetics,
human health risk profiling,
efficacy

Example: mediocre scores in
susceptibility,
pharmacokinetics etc.

Example: low susceptibility ≤
35%
And/or low score human
health and
pharmacokinetics



Always a green = recommended treatment possibility for swine in DK



Reducing overuse Effect at end user level= farmers

Multi-language best practice manual by the swine industry to the farmers

Instructions in injection technique

When administering vaccines, iron, pain-relief or antibiotics to pigs via injections, correct injection techniques are essential.

Correct injection technique

The method is described on the label of medicine bottle

- i.m.: intramuscular injection in the neck musculature
- s.c.: subcutaneous injection under the skin
- Only use traceable hypodermic needles (Danish approved)
- Bent needles **must** be discarded
- Discuss injection techniques and hygiene with your herd vet

Correct needle size

- Piglets: 0.9 mm x 13 mm (20 gauge)
- Weaners: 1.2 mm x 20 mm (18 gauge)
- Finishers: 1.6 mm x 25 mm (16 gauge)
- Sows: 1.6 mm x 25 mm (16 gauge)

Change needles after

- Each litter of piglets, eg. iron injection
- 10-15 weaners or finishers
- 1-2 sows

If a needle breaks

- Mark the pig with a special ear-tag in the same side as the broken needle (see fact box below for more info)
- Notify haulier
- Notify slaughterhouse

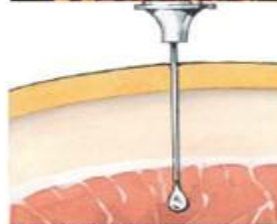
Personal safety

There is a risk of allergic reactions upon contact with antibiotics
Wear gloves or wash your hands after contact

A pig with a broken needle can be slaughtered as long as the slaughterhouse has been notified

Remember to mark the pig with ear-tags

- Call DC at 8919 1920. DC will send applicator and ear-tags
- Call Tican at 9919 2310. Tican will send ear-tags



IM = intramuscular injection



Different needle sizes



Injection in the neck muscle

English

Vejledning til injektionsteknik

Når grise skal gives injektion med vaccine, jern, smertebehandling eller antibiotika er det vigtigt at have en korrekt injektionsteknik.

Korrekt injektionsteknik

- Metoden fremgår af etiketten på medicinflasken
- I.e.m. betyder injektion i nakkemuskulaturen (intramuskulært), s.c. betyder injektion under huden (subkutan)
- Brug kun sporbare kanyle (Danish-godkendt)
- Husk en kanyle læges, så skal den kasseres
- Drift injektionsteknik og hygiejne med

Kanyle

- 16
- 18
- 20
- 25

Skælt i

- 10
- 1-2

Mærk i

- DC
- Tican

Personlig sikkerhed

Der er risiko for allergi ved kontakt med antibiotika
Brug handsker eller vask hænder efter kontakt

En gris med knækket kanyle kan købt/solgt så længe det er registreret, når transporter har det besked

Husk at grise skal mærkes op med ørekanaler
• Ring DC på 8919 1920. DC sender et læge og ørekanaler
• Ring Tican på 9919 2310. Tican sender ørekanaler



Danish

Инструкция по выполнению инъекций

При вакцинировании поросят в виде инъекций, а также ведении пути инъекций лекарства или антибиотика, важно использовать правильную технику укола.

Правильная техника выполнения инъекций

- Методика выполнения инъекции указана на этикетке флашка с лекарством
- в.м. означает укол в мускулатуру (интрамышечный), s.c. означает укол под кожу (подкожный)
- Используйте только те иглы, которые имеют маркировку (одобрены по стандарту Danish)
- Плоские иглы, или выбрасывайте их
- Обсудите с ветеринаром, если вы используете иглы повторно

Правильный

- Поросят
- Откормочники
- Свиноматки

Необходимо

- После выведения поросят и поросят подсосных свиноматок, использовать иглы с маркировкой DC
- После каждого 10-15 леновых поросят или откормочных свиноматок
- После одного или двух леновых свиноматок

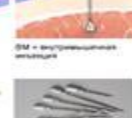
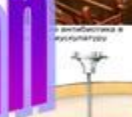
При сломанных иглах

- Поставьте свиноматку специальной ушной биркой на той же стороне, где остался сломанный игла (для получения дополнительной информации см. инструкцию)
- Сообщите перевозчику
- Сообщите на бойню

Персональная безопасность

При контакте с антибиотиками существует риск аллергии. При работе с антибиотиками надевайте перчатки или используйте перчатки.

Свинья с сломанной иглой может быть продана/куплена



Russian

Conclusions taking actions reducing AM use

Extreme caution comparing countries effects of actions

Differences : FPA population composition

Mean herd sizes

Starting point – easier reduction from high level

Taking ACTIONS result in

- easy and fast reductions
- for the benefit of human treatment
- good and fast political results
- vets being advisors in health / stronger position
- vets being prouder of their profession and
- future treatment possibilities also for animals

Time for ACTION

Reducing overuse – work shop discussions

Awareness – your country's potential and contribution to a solution

Courageous politicians – CIA legislation and goal setting

Threshold values, benchmarking vets and herds in your country

Incentive for solutions –prevention of disease/vaccination/no prophylac

One to One relation – farmer and vet

No profit – advisors in health

Most strategies can be done now

using other MSs efforts as stepping stones

reducing 40% AM use and 99 % CIA use in animals

also in MSs without fancy databases !

THANKS
QUESTIONS



?

ACLN@FVST.DK

VETSTAT - data input



93%



98%

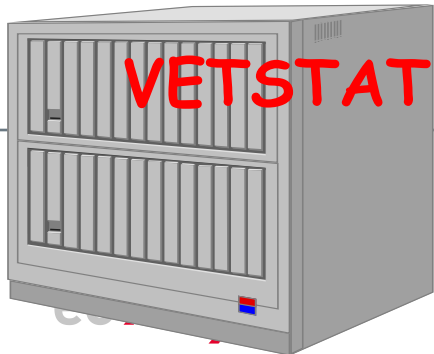
Danish Medicines Agency



5%

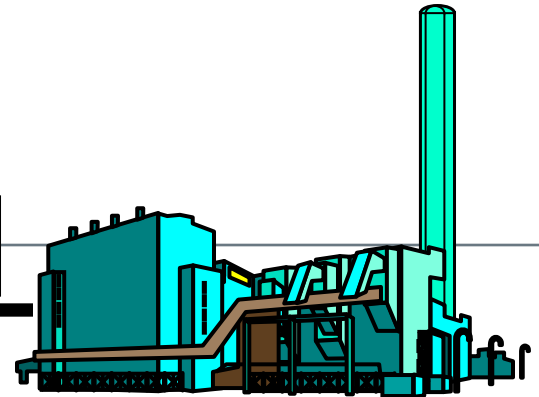


For each record:
Date
Drug ID
Drug quantity
Prescriber ID
Herd ID
Animal Species
Animal agegroup
Disease category

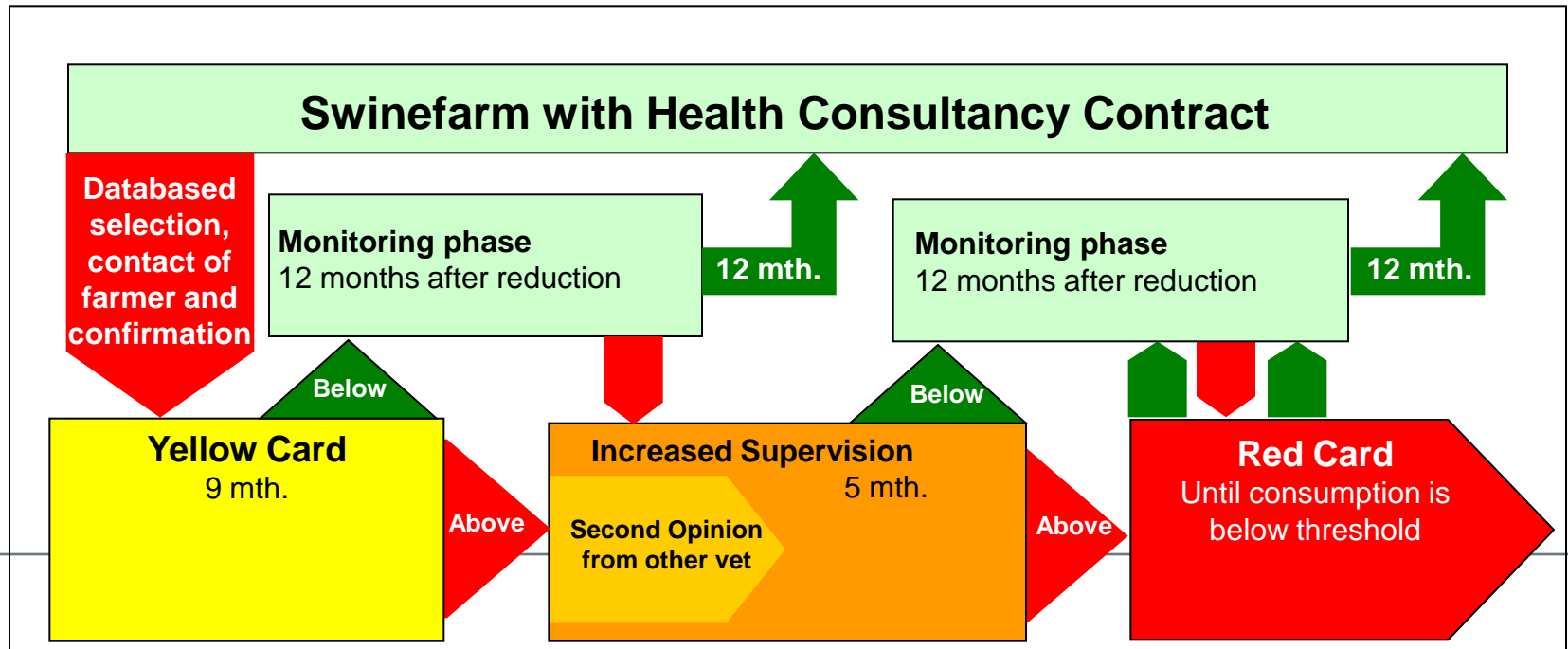


Medicated feed (2 %)

Coccidiostats



Yellow Card – control concept



Effect of strategies AM resistance

ESBL in *E. coli* from meat in DK and imported meat (other MS)

Figure 2. Occurrence (%) of ESBL *Escherichia coli* and genes in meat, Denmark

DANMAP 2010

