



Folkhälsomyndigheten  
PUBLIC HEALTH AGENCY OF SWEDEN

# **Antimicrobial Resistance Prevention (Action Package: Prevent-1) Putting AMR on the priority list: Sweden**

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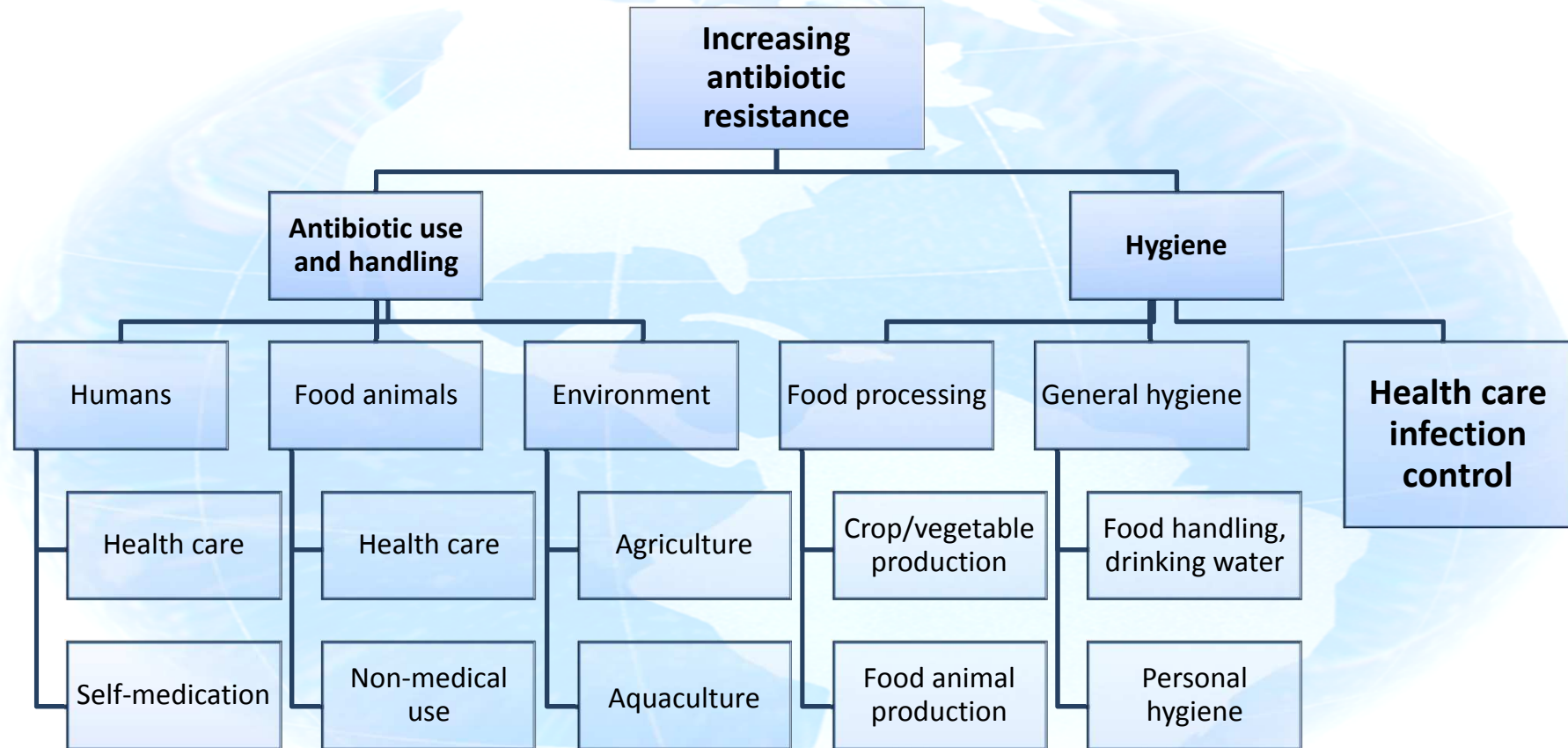
A satellite view of Earth from space, showing the Americas (North and South America) in the center. The landmasses are green and brown, surrounded by blue oceans and white clouds. The perspective is from a high angle, looking down at the planet.

The Global  
Challenge

Antibiotics have saved  
millions of lives

Antibiotics are rapidly  
losing their effect

# One Health – One World



# A problem with solutions

4 · 2015-  
05-07

# The containment of resistance needs co-ordination and feedback of knowledge

## **Surveillance**

Antibiotic  
resistance

Antibiotic use

## **Decrease the need for antibiotics**

Prevention of  
disease

Prevention of  
bacterial  
spread

## **Use antibiotics properly**

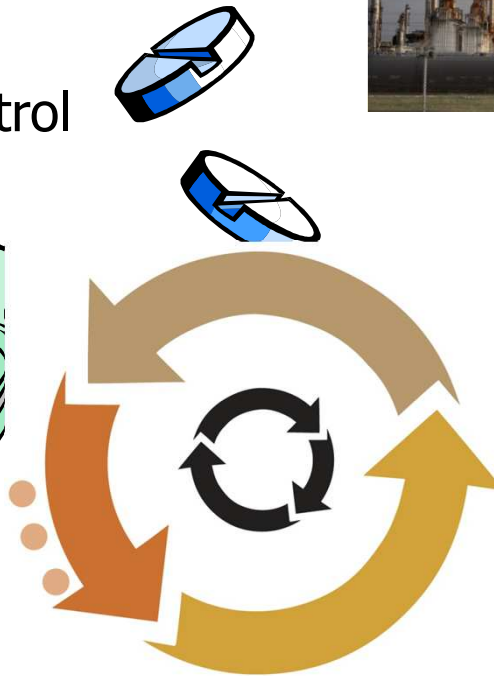
Diagnostics

Rational use

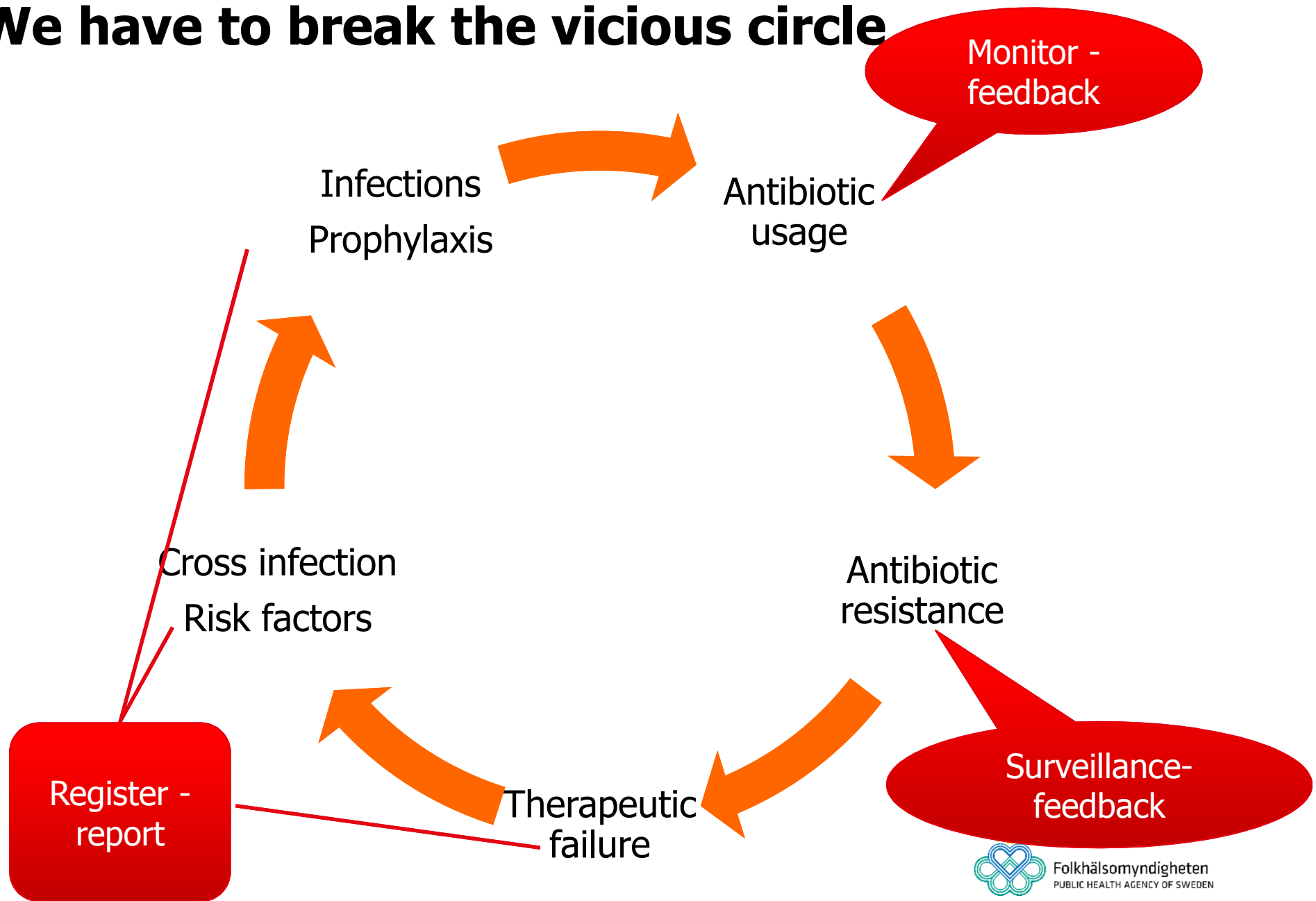


# Strategies

- Cooperation between all involved sectors
  - medical, food production, environmental and sanitation, animal husbandry
- Rational use of antibiotics
  - Knowledge – what and how to treat
  - Epidemiological data to counteract vicious circle
  - Infection management guidelines
  - Timely diagnostics of high quality
- Effective infection prevention and control
  - Hospital hygiene
  - Vaccinations
- New antibiotics



# We have to break the vicious circle



# Steering mechanisms

## National:

- Laws (with explanatory background text "Government bills")
  - Communicable Diseases Act
  - The Drug Therapeutics Committees law (1996)
  - The Swedish Health and Medical Services Act (1982)
- Regulations
  - Antibiotics by prescription only
- Supervision
- Funding of special initiatives

## Regions/counties:

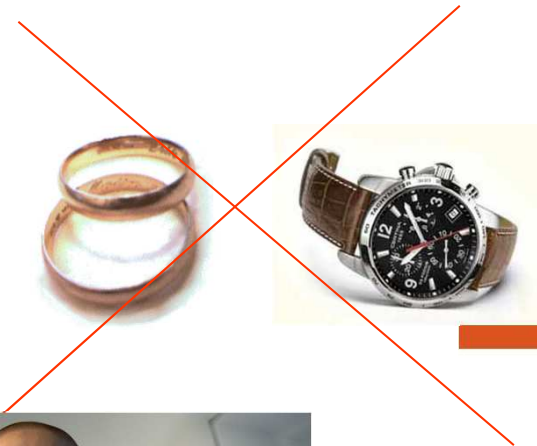
- Economic (contracts, bonus and fine)



# Regulation on basic hygiene in health services 2007

- Hospitals shall implement basic hygiene procedures
- All staff shall comply to the regulation during examination, care and treatment or other direct contact with patients
- Includes:
  - Dresscode
  - Handhygiene
  - Gloves
  - Apron

Applies to all staff including doctors



Basal hygien inom  
hälso- och sjukvården m.m.

Socialstyrelsens  
författningssamling



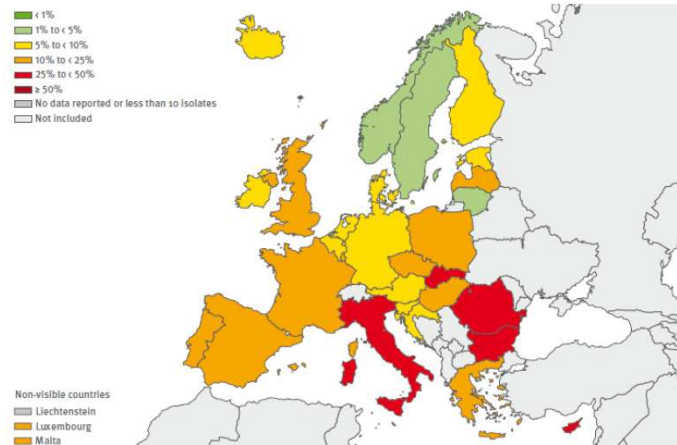
# Surveillance

- Data for action
  
- Data for understanding
  - Connections use and resistance
  - Use in animal sector and resistance
  - Antibiotic in the environment and resistance

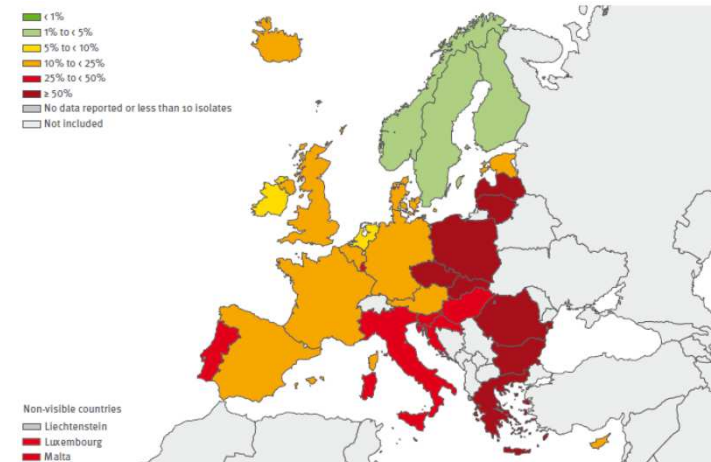
# Sweden has a comparatively favourable situation of antibacterial resistance

Resistance (R+I) to 3rd gen. Cephalosporins,

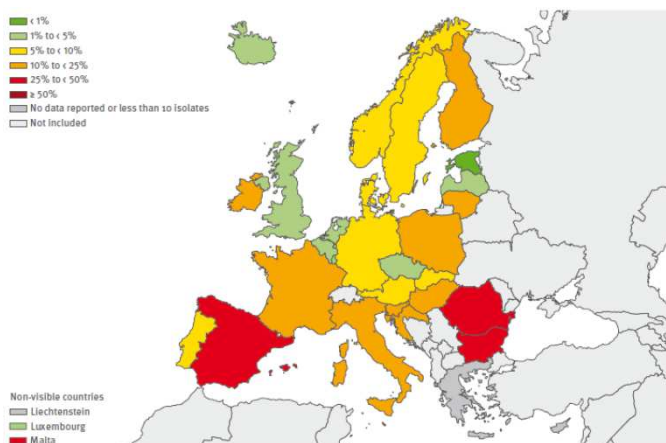
*E. coli*



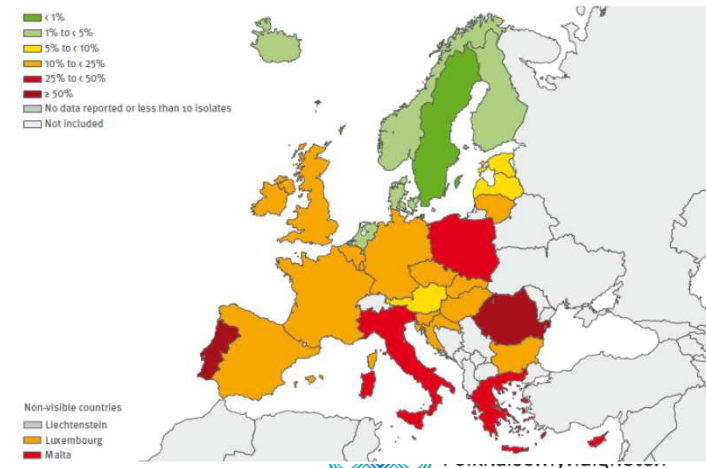
*K. pneumoniae*



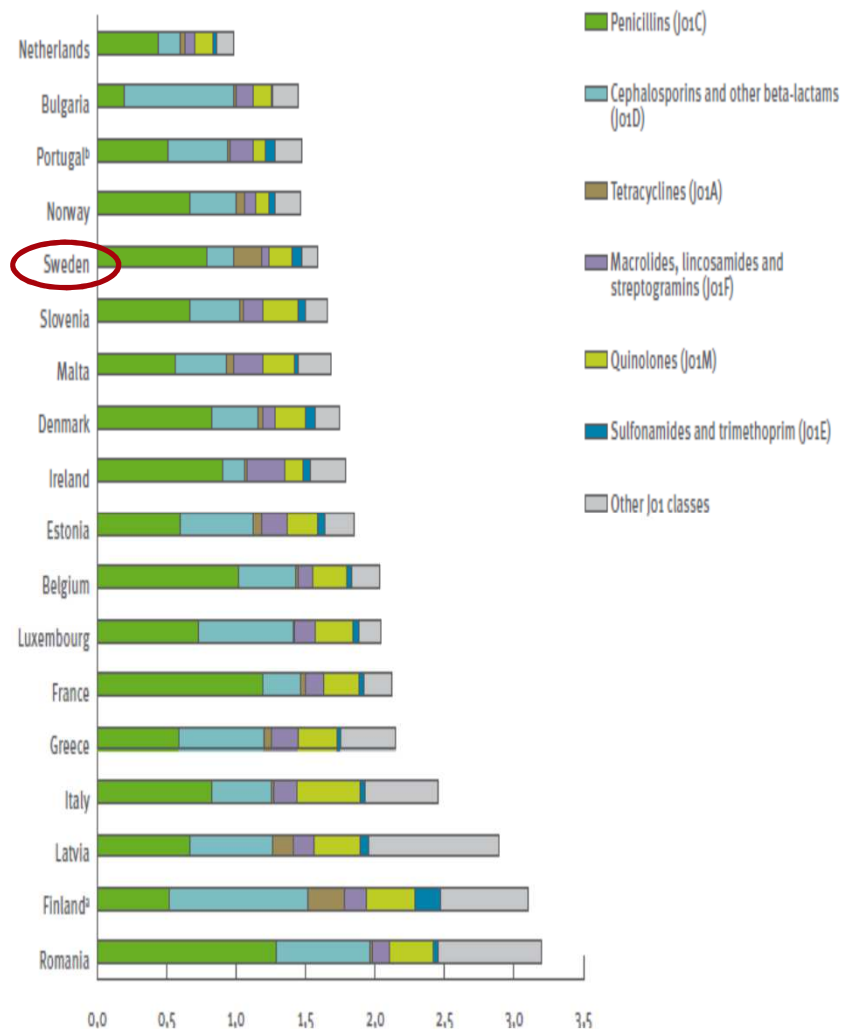
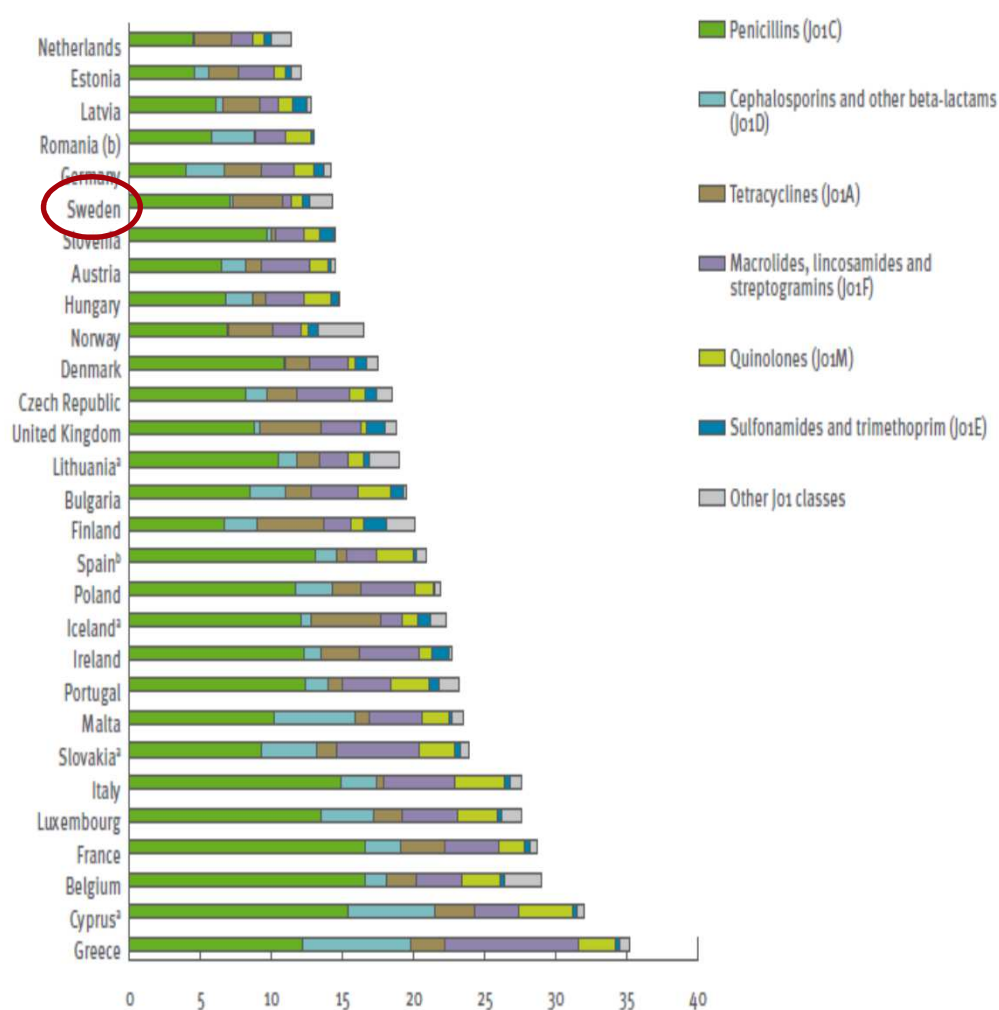
*S. pneumoniae*; non-susceptible to penicillin



*S. aureus*; resistance to meticillin (MRSA)



# Also: Antibiotic consumption is fairly low



Community

Hospitals

DDD/1000 inhabitants/day



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Source: ECDC Annual epidemiological report 2013

# SE: Surveillance of Health care Associated Infections

- Incidence reporting of *C. difficile*
- National Point Prevalence Studies
- The Anti-Infection Tool
- ECDC-surveillance networks
  - HAI-ICU
  - HAI-PPS
  - HAI-HALT



# SE: Surveillance of antibiotic resistance

- Processing and analysis of notifications according to the communicable disease act
  - Enterobacteriaceae with ESBLs
  - Enterobacteriaceae with CPEs
  - Methicillin resistant Staphylococcus aureus (MRSA)
  - Vancomycin Resistant Enterococcus (VRE)
  - Pneumococcus with decreased susceptibility to penicillins
- Voluntary surveillance of antibiotic resistance
  - ResNet – consecutive isolates of selected species, yearly, short time periods, 100 – 200 isolates, monitor/improve lab quality
  - EARS-net – ECDC, yearly, all data, certain species, blood isolates
  - Svebar – automated, daily collection of all microbiology data, early warnings, accessible by The Public Health Agency of Sweden, and all connected local labs. May in future be used to collect data for both ResNet and EARS-net.





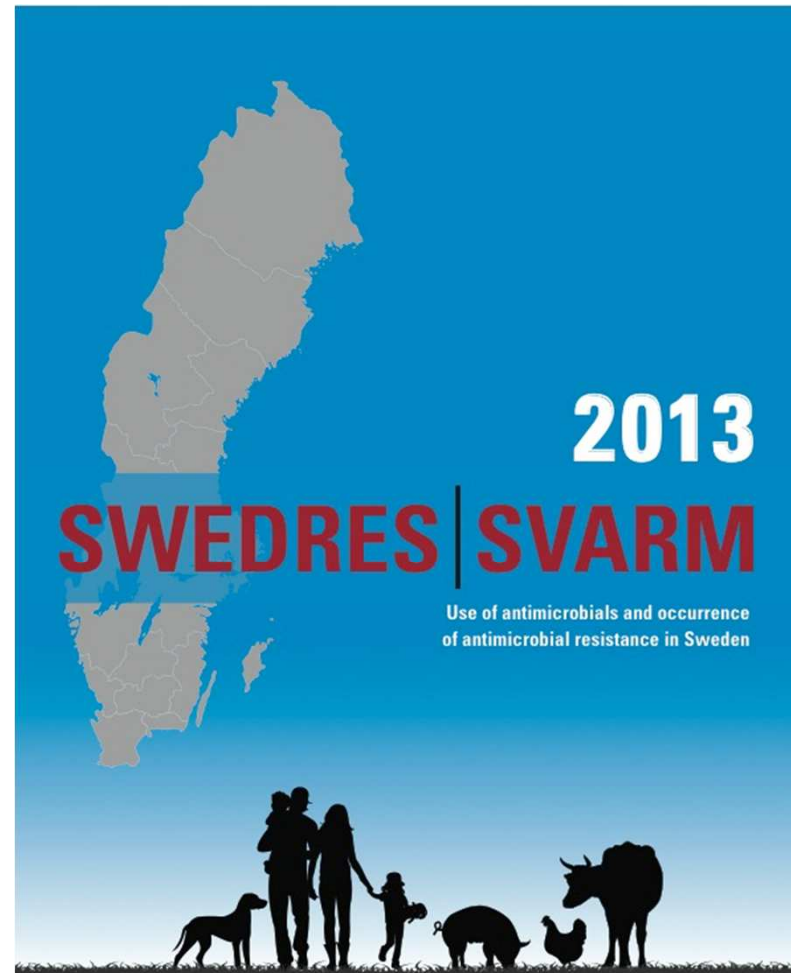
# SE: Surveillance of antibiotic use – both national and local

- Continuous monitoring
  - Outpatient prescriptions
  - Hospital prescriptions
- Compilations, analysis and reports
  - ESAC-Net



# SWEDRES | SVARM 2013

- Yearly national report on antibiotic use and resistance in human and veterinary medicine.



# New era and new terms for AMR

- Preparedness
- Health threats
- Security issues

# A new paradigm?

- Intrasectorial
  - Veterinary
  - Food
  - Security
  - Patientsafety
  - Research
  - Development aid
  - environment

**ghsag**

# REPRESENTATION

- *Leading countries*
  - Canada, Germany, Netherlands, Sweden, United Kingdom.
- *Contributing countries*
  - Australia, India, Indonesia, Italy, Japan, Norway, Portugal, South Africa, Switzerland, Thailand, and United States.
- tc



# FIVE YEAR TARGET

- *Support work being co-ordinated by WHO, FAO and OIE on AMR:*
- **Each country to have a national AMR plan in place to take a comprehensive, “one health” approach to AMR.**
- **Strengthened surveillance, including participation in the global surveillance program planned by the WHO and laboratory capacity at national and international levels**
- **Improved conservation of existing treatments and collaboration to support the sustainable development of new antibiotics, alternative treatments, preventive measures and rapid, point-of-care diagnostics, including systems to preserve new antibiotics.**

# KEY TARGETS AND INDICATORS FOR 2015

- Agreement of WHO's proposed Global Action Plan on AMR (WHO GAP) at World Health Assembly in May 2015
- All leading and participating countries to have a draft national AMR plan in place
- Early implementation of WHO AMR Surveillance Programme agreed during Stockholm meeting in December 2014
- With WHO, FAO and OIE, development of a twinning approach to support implementation of the GAP, as measured by number of country partnerships established.
- Improve stewardship, including agreed plans/commitments to reduce non-medical use of antimicrobials.

**More tomorrow**

- Thank you