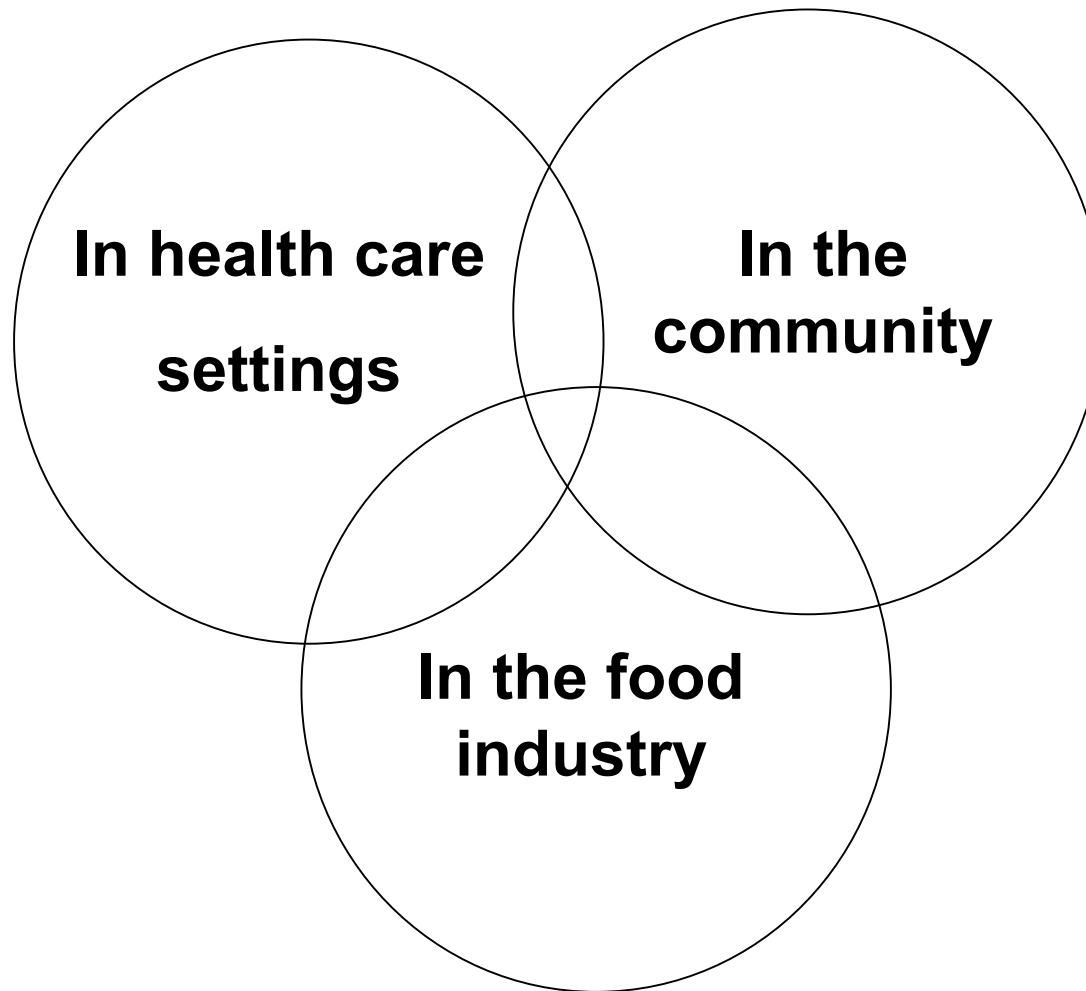


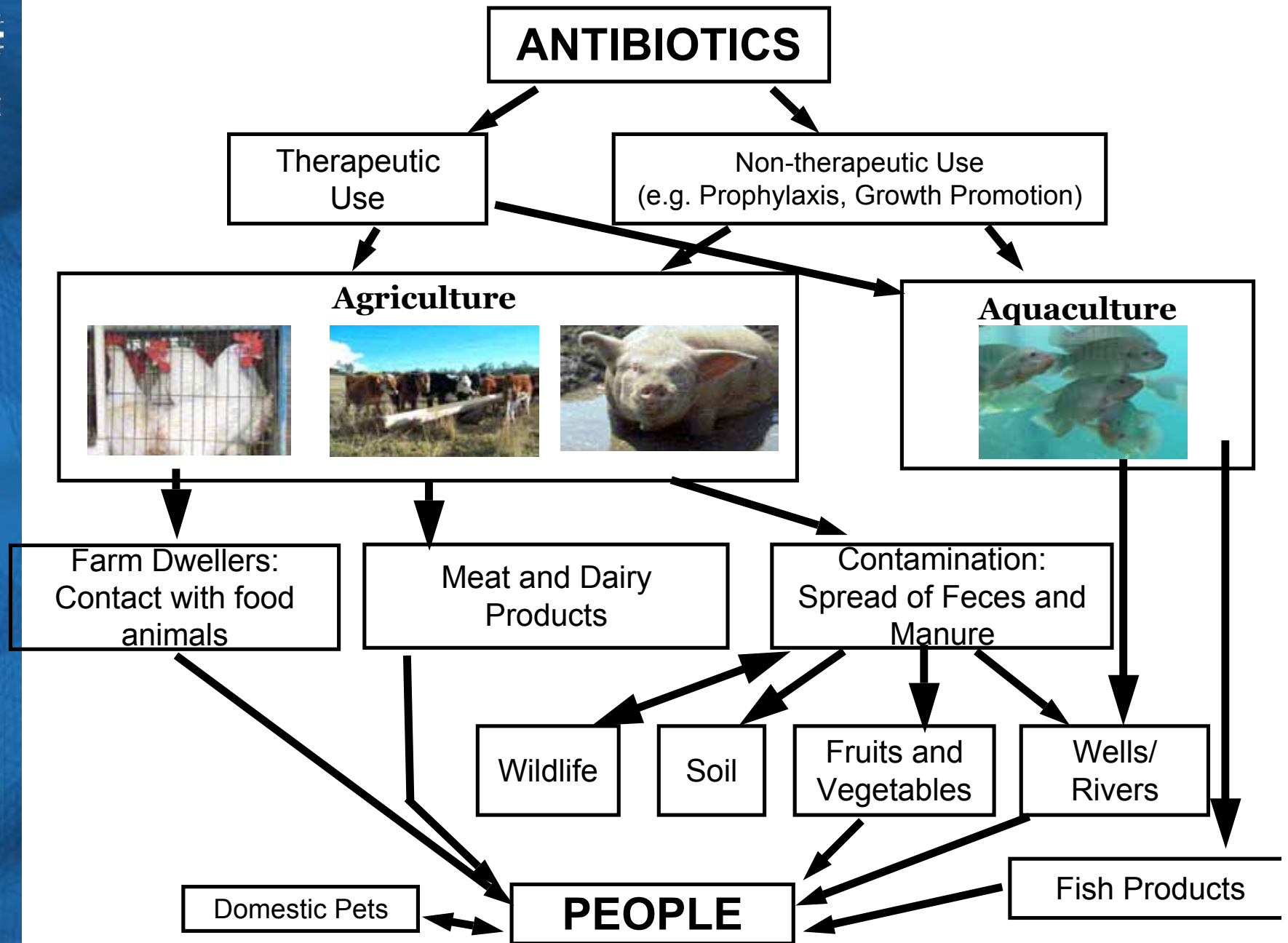
**Towards a strategy on the containment
of Antimicrobial Resistance in WHO,
Regional Office for Europe
IMED Meeting 2011, Vienna**

Bernardus Ganter

Senior Adviser, WHO Regional Office for Europe

Main driver of antimicrobial resistance is “use”
(overuse, misuse, underuse)
Increasing evidence on the interconnections





Antibacterial Resistance in hospital settings

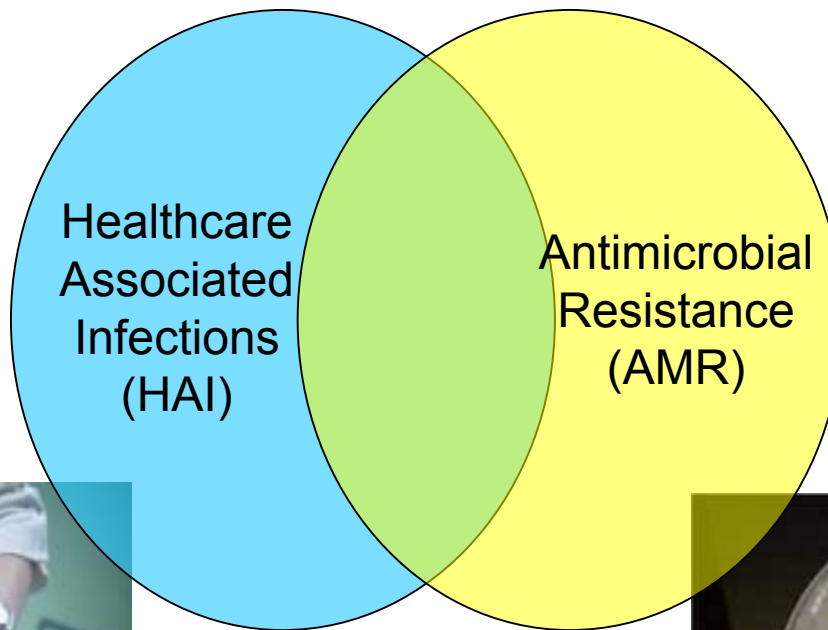
- 400.000 patients with resistant bacteria each year in 27 EU (and Norway, Iceland) per year
 - 25.000 deaths per year
 - 2.5 million extra hospital days and direct costs of 900 Million EUR.
- (based on 5 antibiotic resistant bacteria: MRSA, vancomycine resistant *Enterococcus faecium*, 3rd generation cephalosporin resistant *E.coli* and *K.pneumoniae* and carbepenem resistant *P.aeruginosa*)

Considering that:

- Total population in these countries 400 Million
- Total population in 53 countries in WHO, European Region is 900 Million
-

Overlapping areas

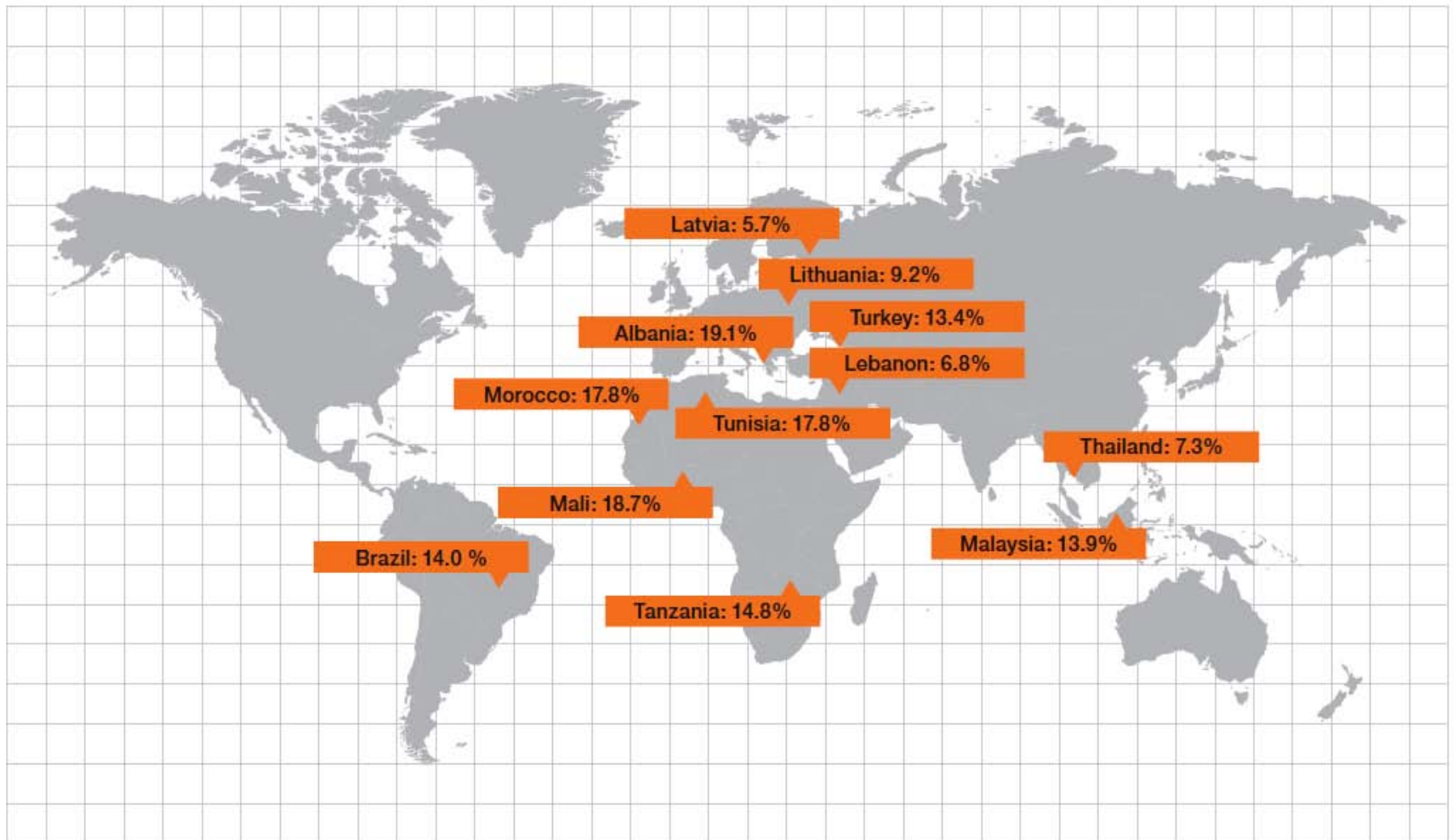
Which must be addressed together



Usually associated with **weak healthcare system**

Prevalence of HAI worldwide (Range: 5.7-19.1%)

Figure 2 Prevalence of HCAI in developing countries*



* Systematic review conducted by WHO, 1995-2008

In addition

- Many health care systems are in transition and privatization in Eastern Europe
- Over the counter sale of antibiotics
- Compromise of quality
- Lack of financial resources, underuse AB
- Use of antibiotics in food animals
- Legislation on drug sales and hospital acquired infections need update and enforcement
- Most life threatening infections treated without appropriate sensitivity testing due to lack of laboratory capacity
- No new antibiotics in the pipeline, specially important for G negative bacteria

MDR-TB high-burden countries (80.000 cases per year)

The first 15 most affected countries are from
the WHO European region



MDR-TB prevalence among

	New (%)	Re-treated (%)
Azerbaijan	22.3	55.8
Moldova	19.4	50.8
Tajikistan	16.5	61.6
Ukraine	16.0	44.3
Russian Fed.	15.8	42.4
Estonia	15.4	42.7
Kazakhstan	14.2	56.4
Uzbekistan	14.2	49.8
Kyrgyzstan	12.5	42.1
Belarus	12.5	42.1
Bulgaria	12.5	42.1
Latvia	12.1	31.9
Armenia	9.4	43.2
Lithuania	9.0	47.5
Georgia	6.8	27.4

WHO European region represents
19% of the MDR-TB global burden

MDR-TB prevalence among

	New (%)	Re-treated (%)
China	5.7	25.6
Myanmar	4.2	10
Philippine	4	20.9
Pakistan	2.9	35.4
Viet Nam	2.7	19.3
India	2.3	17.2
Bangladesh	2.2	14.7
Indonesia	2	14.7
Congo, Dem. R.	1.8	7.7
Nigeria	1.8	7.7
South Africa	1.8	6.7
Ethiopia	1.6	11.8

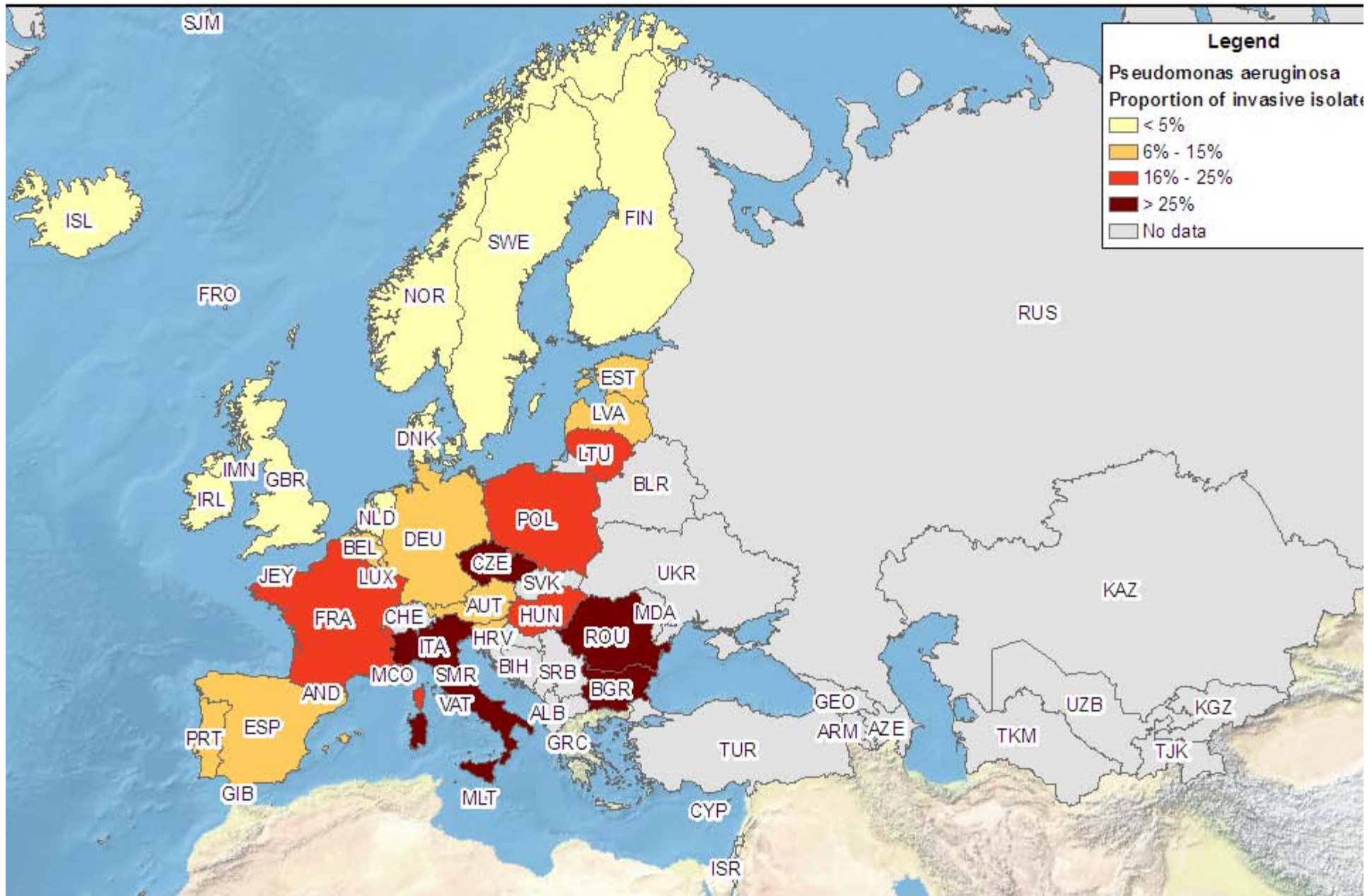
Technical basis for the regional strategy

- **Surveillance** to document the problem
- **Prevention** to slow the emergence of HAI and AMR
- **Containment** to reduce the spread
- **Research** to develop new tools

Should address a holistic approach based in the health care systems and involving all relevant sectors

Seven (7) strategic objectives in EURO strategy

-  **Promote National coordination**
-  **Strengthen surveillance of antimicrobial resistance**
-  **Strengthen surveillance and promote stewardship of antimicrobial drug use**
-  **Strengthen surveillance of resistance and use of antimicrobial agents in the food animal industry**
-  **Improve infection control and stewardship of antibiotics in the health care settings**
-  **Promote research and innovation on new drugs, diagnostic tests**
-  **Improve awareness on antimicrobial resistance, antibiotic consumption and infection prevention**



***Pseudomonas aeruginosa* resistant to three or more antibiotic classes (piperacillin±tazobactam, ceftazidime, fluoroquinolones, aminoglycosides and carbapenems)**



Mercator Projection

Source: ECDC, FARS-JI et 2009

European Antimicrobial Resistance Surveillance System (EARS-NET, ECDC)



- **Network of national centres in 27 countries**
 - 800 public-health laboratories serving over 1300 hospitals
- **Surveillance of antimicrobial (7) susceptibility of**
 - *Streptococcus pneumoniae* to penicilline
 - *Staphylococcus aureus* to methicillin (MRSA)
 - *Staphylococcus aureus* to vancomycin
 - *Enterococcus faecium* to vancomycin
 - *Escherichia coli* to 3rd generation cephalosporin
 - *Klebsiella pneumonia* to 3rd generation cephalosporin
 - *Pseudomonas aeruginosa* to carbapenem resistance
- **In addition improve surveillance of other important pathogens such as food borne diseases, Tuberculosis, STI**
- **WHONET software available for national data collection and compatible with EARS-NET software**
- **Create pan- european surveillance systems**

Resistance under surveillance

Early warning and new emergence mechanisms

Important to use International Health Regulations (IHR) for reporting

Global Spread NDM1



Note : recent cases travel related not medical tourism

V Strengthening prudent use of antimicrobial in health care settings and infection control

- **Establishment of hospital infection and surveillance committees, which incorporate the appropriate expertise and AB stewardship. (infection control nurse, internal medicine, microbiology, pharmacology, surgery)**
- **Promote antimicrobial stewardship to guide antimicrobial policy and assess antimicrobial practice by clinical services**
- **Build some essential clinical diagnostic microbiological capacity**
- **Hand hygiene, vaccination, appropriate AB prophylaxis**



1. Strengthen National multi-sectorial coordination

- Facilitate national coordination and information sharing of all experts, networks and institutions that are involved in AMR.**
- Should be all inclusive, sustainable and have an official mandate**
- Elaborate national plans of action**
- Lead national awareness campaigns**
- Curriculum development, regulations etc.**

World Health Day slogan 2011 (7th of April)



Partnership



The European Antimicrobial
Resistance Surveillance System



European Surveillance of
Antimicrobial Consumption

REACT



Improving Patient Safety in Europe



*Antibiotic Resistance
Surveillance & Control
in the Mediterranean Region*



European Union Invasive
Bacterial Infections Surveillance
Network



CDC

WHONET



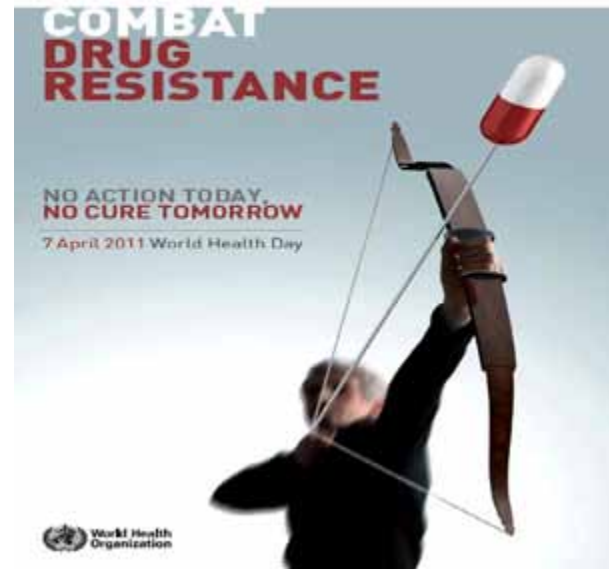
APUA ..Alliance for Prudent Use of Antibiotics

EFMA, ECCMID professional associations, patient safety groups

ARPEC: Antibiotic Resistance and Prescribing in European Children

Conclusions

- Time is running out
- Implement national coordination and action plans
- Strengthen surveillance systems (resistance and consumption)
- World Health Day may offer good opportunity to increase awareness



Thank you

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