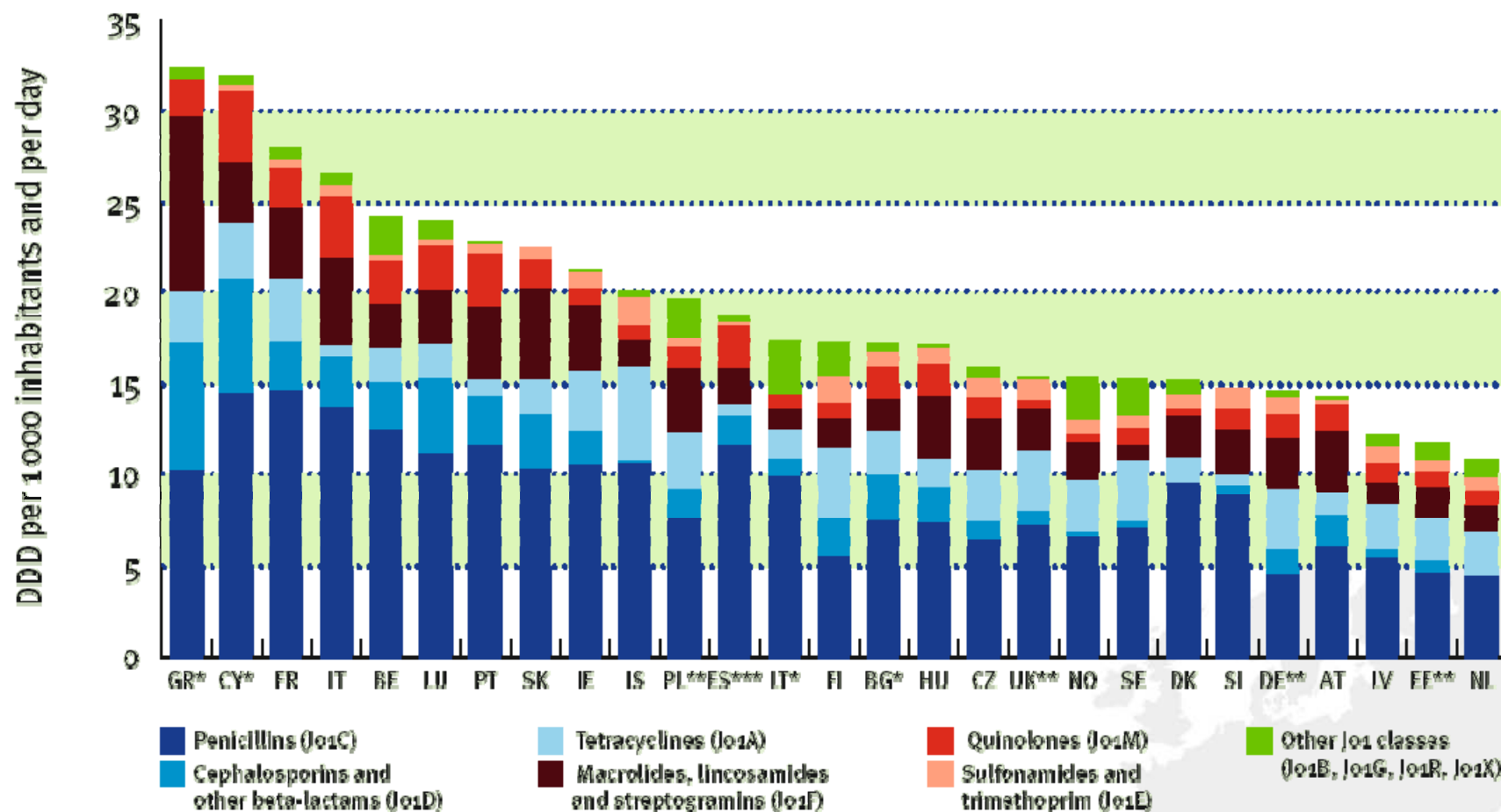




The Microbial Threat to Patient Safety in Europe

Zsuzsanna Jakab, Director
European Centre for Disease Prevention and Control
Prague, 16 April 2009

Total outpatient antibiotic use (ATC J01) in 27 European countries, 2006

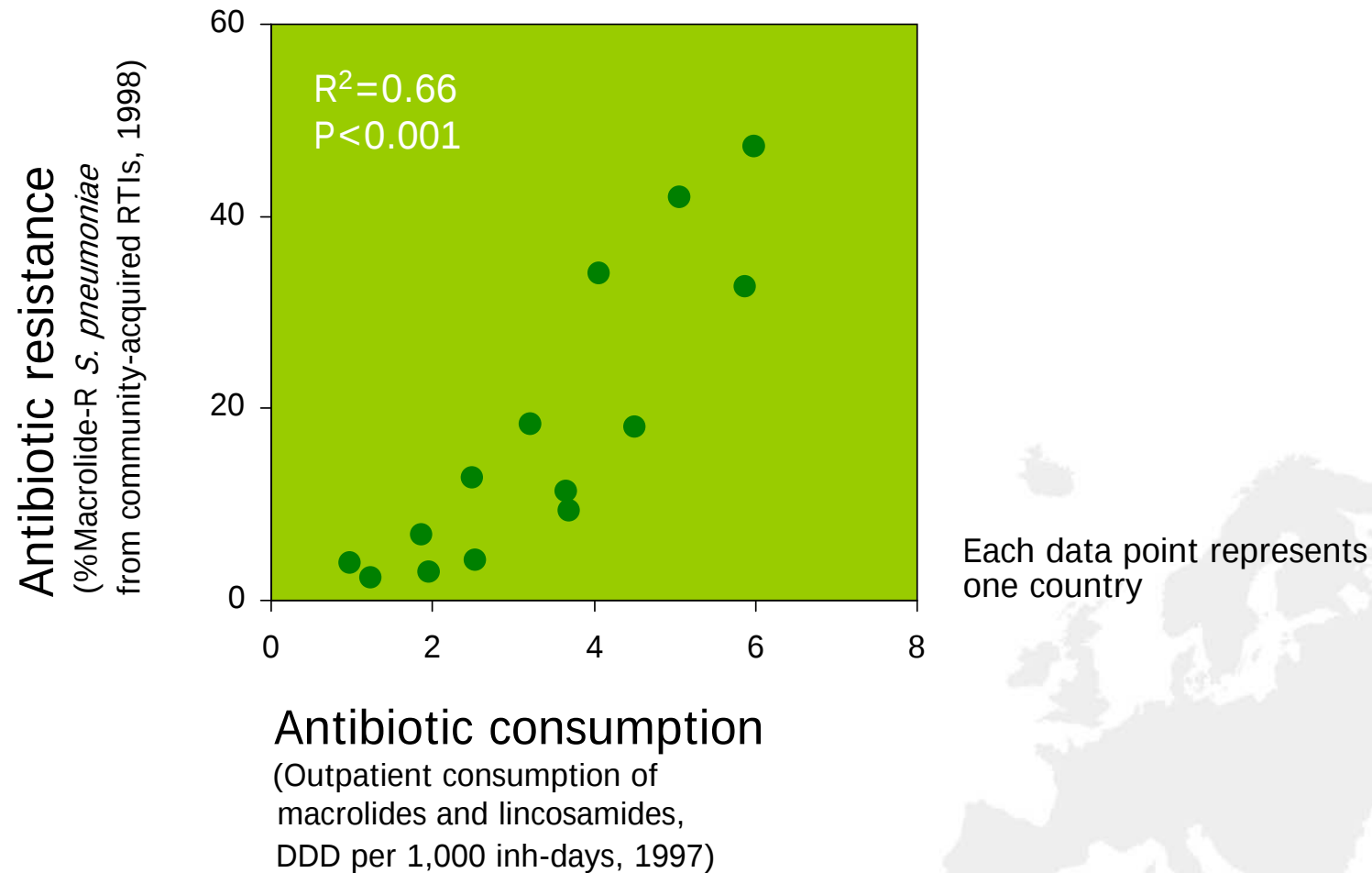


* Total use, i.e. including inpatients, for Bulgaria, Cyprus, Greece and Lithuania.

** 2005 data for Estonia, Germany, Latvia, Poland and UK.

*** Reimbursement data, which do not include over-the-counter sales without a prescription for Spain.

Relationship between antibiotic use and resistance in the community



European Antibiotic Awareness Day



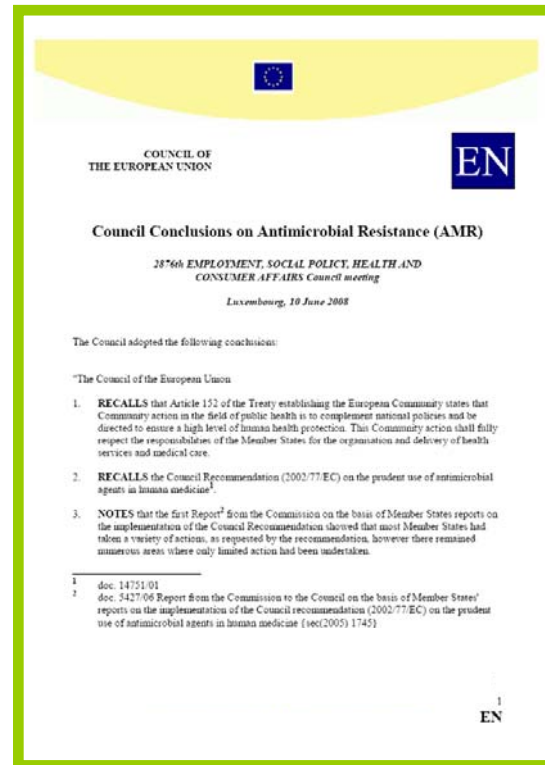
- **European public health initiative**
- **1st European Antibiotic Awareness Day, 18 November 2008**
 - Focus on general public
 - 32 European countries held national events (27 EU Member States, Iceland and Norway, three candidate countries)
- **2nd European Antibiotic Awareness Day, 18 November 2009**
 - Focus on general public and primary care prescribers (new material)



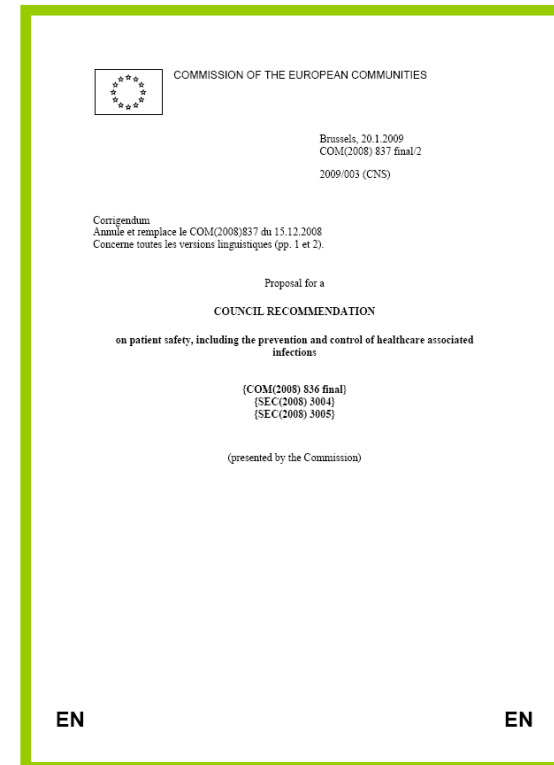
Council Recommendations, Conclusions and Proposal from the Commission



Council Recommendation of 15 November 2001 on the prudent use of antimicrobial agents in human medicine (2002/77/EC)



Council Conclusions on Antimicrobial Resistance (AMR) (10 June 2008)



Proposal for a Council Recommendation on patient safety, including the prevention and control of healthcare associated infections (15 December 2008)

Healthcare-associated infections, antimicrobial resistance: Overlapping, but not identical



Burden of healthcare-associated infections and multidrug-resistant bacteria*



* (preliminary estimate)

▪ Healthcare-associated infections (HCAI)

- approximately 4 million per year
- Directly attributable deaths: approx. 37,000 each year
- Extra hospital days: approx. 16 million each year
- Direct costs: approx. €5.5 billion per year (average €334 per day)

▪ Multidrug-resistant bacteria

- at least 1/2 of the deaths attributable to HCAI are due to the 7 most common multidrug-resistant bacteria ...
- ... and in the four main types of HCAI: bloodstream infection, pneumonia, skin and soft tissue infection, urinary tract infection
- "This is a very conservative estimate!"

Modern medicine is not possible without effective antimicrobials

Hip replacement

Organ transplants

Cancer chemotherapy

Intensive care

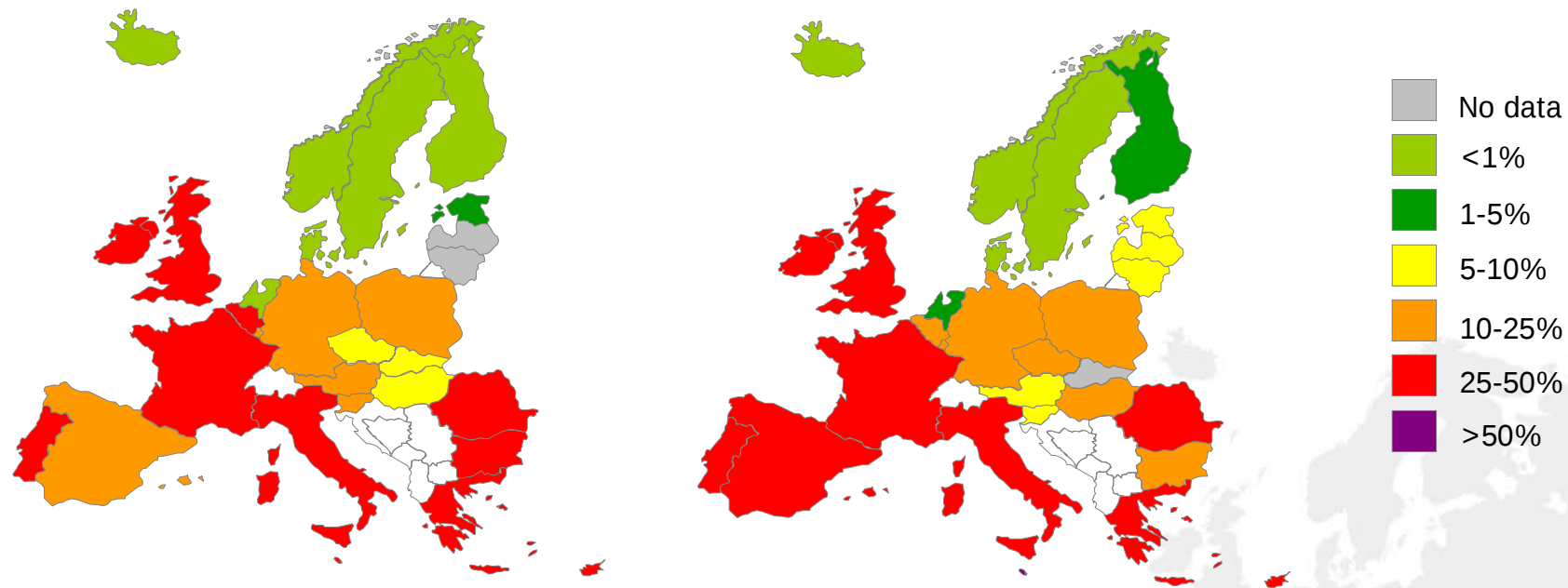
Care of preterm babies

Methicillin-resistant *Staphylococcus aureus* (MRSA), blood and spinal fluid



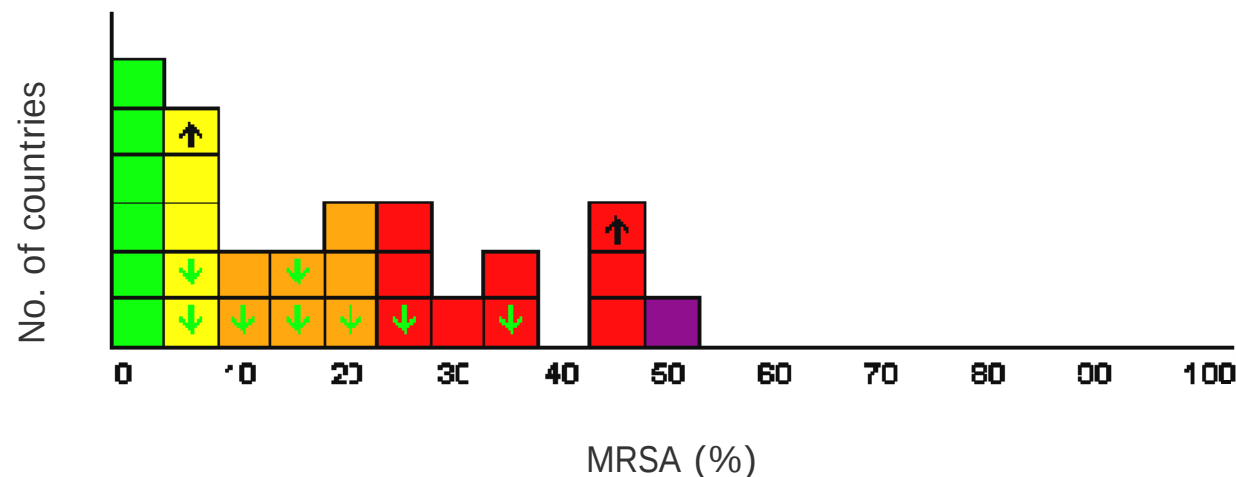
2002

2007



Source: European Antimicrobial Resistance Surveillance System (EARSS), 2008.

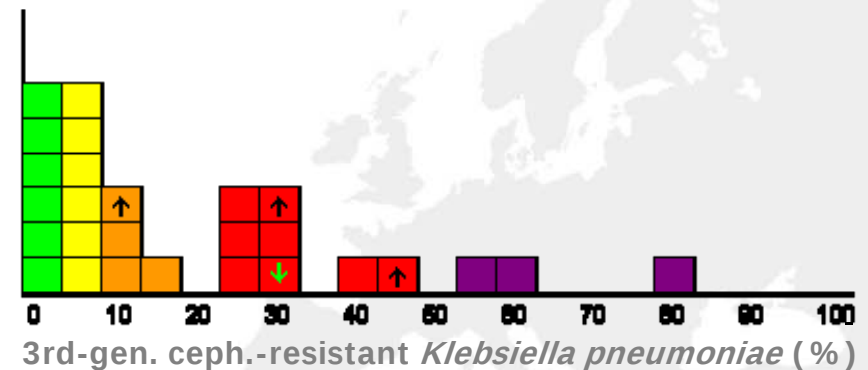
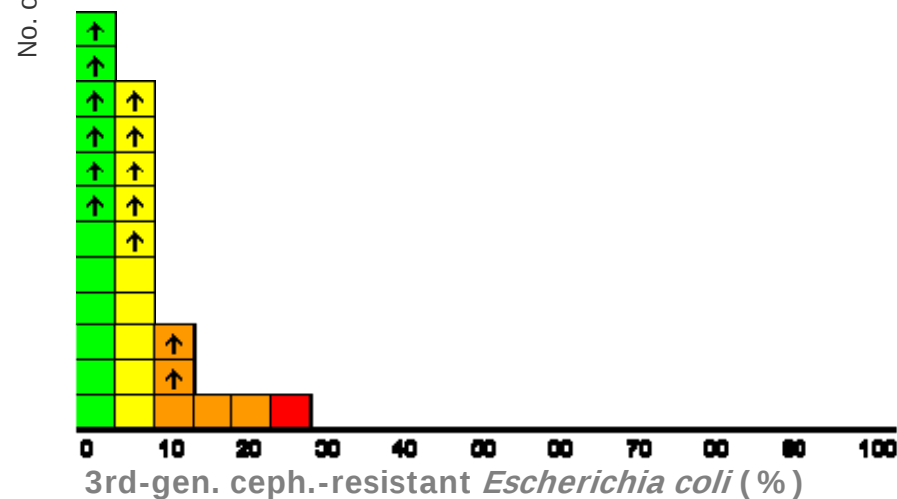
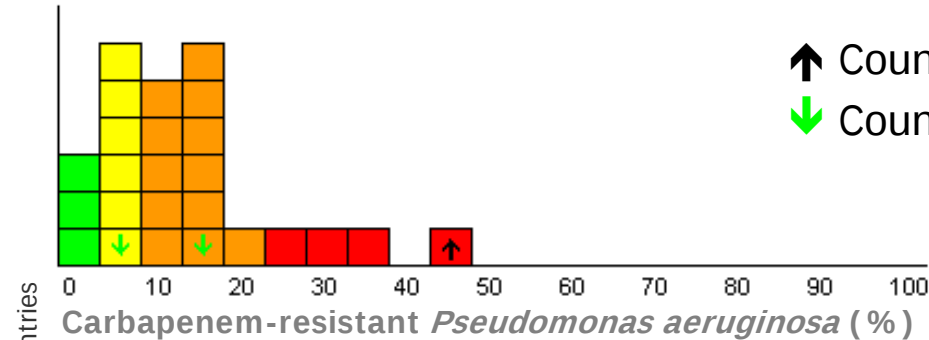
Methicillin-resistant *Staphylococcus aureus* (MRSA), EU, 2007: often high, but decreasing in many countries



↑ Country with a significant increase (2005–2007)

↓ Country with a significant decrease (2005–2007)

Antimicrobial resistance in gram-negative bacteria, EU, 2007: already high or increasing



Two main actions to prevent and control antimicrobial resistance in healthcare

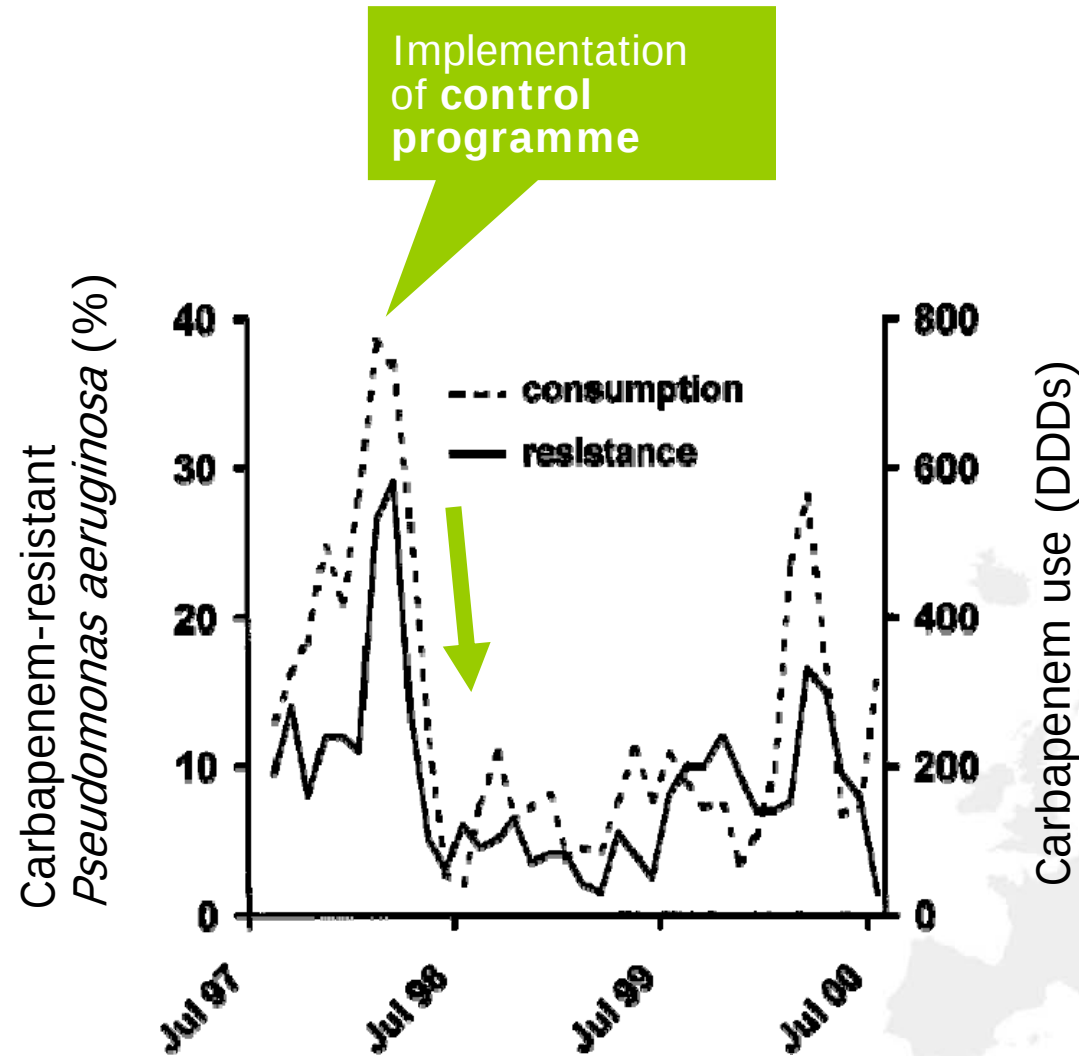
- **Prudent use of antimicrobials**
(only when needed, correct dose, dose intervals, duration)



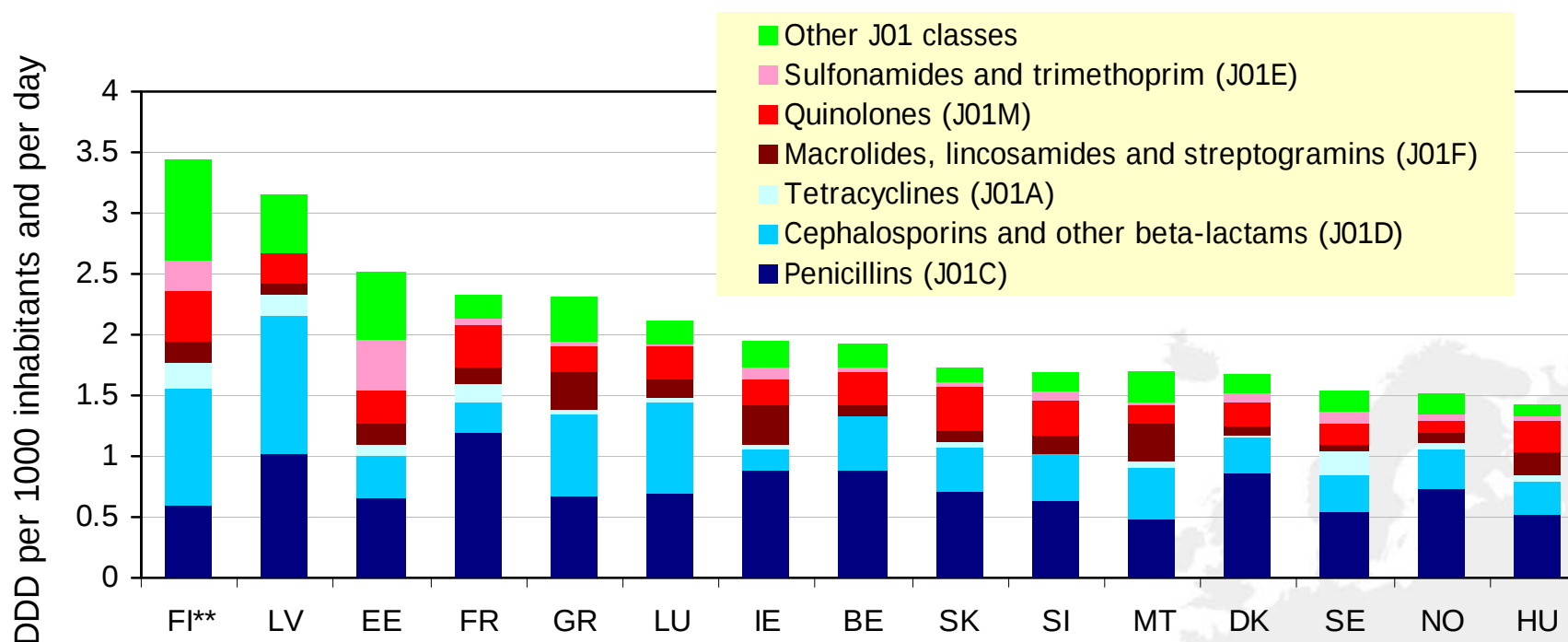
- **Infection control**
(hand hygiene, screening, isolation)



Antimicrobial consumption drives antimicrobial resistance in hospitals



Total hospital antibiotic use (ATC J01) in 15 European countries, 2007*



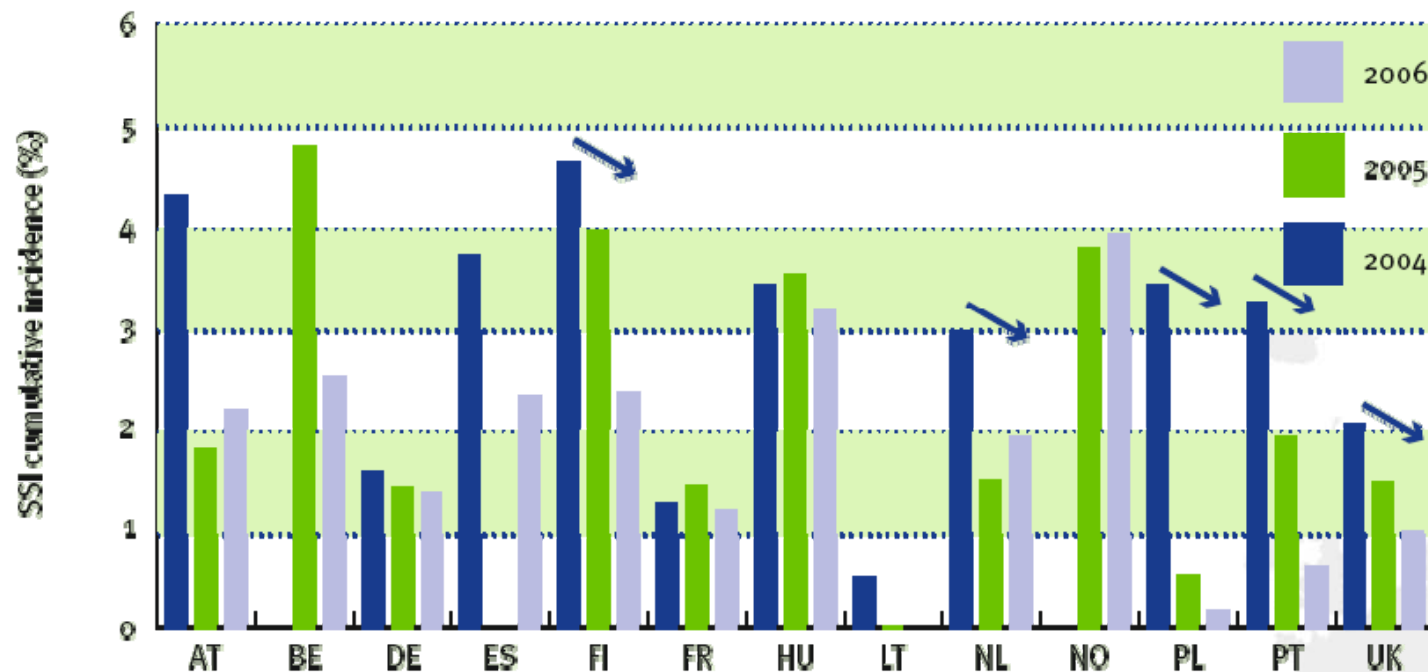
* Except Latvia, 2006 data; Belgium, Estonia & Hungary, 2005 data; Greece, 2003 data;

** Includes data from primary healthcare centres and nursing homes.

Surveillance of healthcare-associated infections (HCAI) and benchmarking contributes to control



Trends in cumulative incidence of surgical site infections (SSI) in hip prosthesis surgery (HPRO) by country 2004–2006



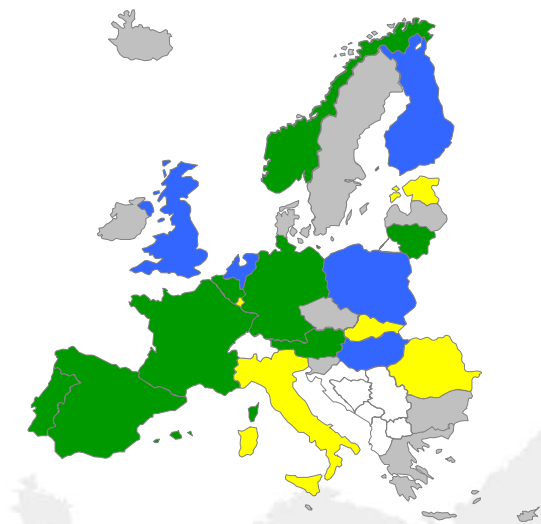
Arrows indicate significant decrease in surgical site infection cumulative incidence in hip prosthesis operations.

* Data for Belgium in 2004–05 were pooled because of too small numbers in individual years; Spain started new network in 2006 so provided no data in 2005; Lithuania did not provide data on HPRO in 2006; Data for UK contain data from England and the 'celtic network' (Northern Ireland, Scotland, Wales), with minor methodological differences between them.

Surveillance of healthcare-associated infections (HCAI)



- Now integrated as part of ECDC activities
- Several HCAI surveillance options:
 - Surgical site infections (see map)
 - HCAI in intensive care (see map)
 - HCAI in long-term care facilities (2009)
 - Structure and process indicators for infection control (2010)
- European point prevalence survey on HCAI and antibiotic use in hospitals (2010–2011)
 - Procedures to be agreed in 2009
 - Survey in 2010–2011



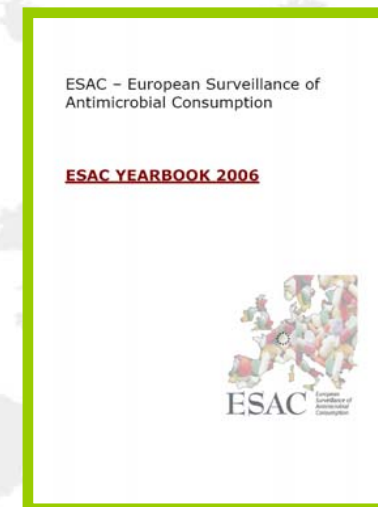
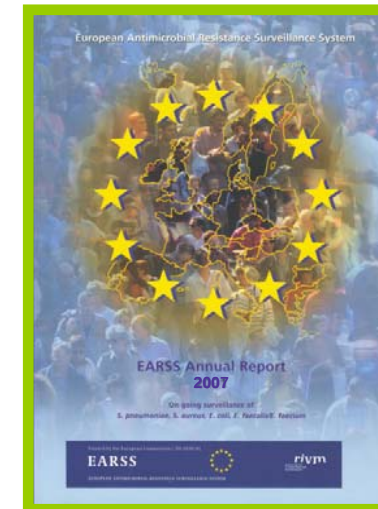
Participation in European HCAI surveillance, 2006

- Surgical site infection only
- Intensive care only
- Both
- Does not participate

Surveillance of antimicrobial resistance (AMR) and of antimicrobial consumption



- European Antimicrobial Resistance Surveillance System (**EARSS**)
- European Surveillance of Antimicrobial Consumption (**ESAC**)
- Yearly reports
- Currently outsourced
- Both networks integrated to ECDC surveillance activities in 2010
- European Committee on Antimicrobial Susceptibility Testing (**EUCAST**)



Reports and guidance

Clostridium difficile

- Background article (2006)
- Update articles on *C. difficile* PCR ribotype 027 in Europe (2007 and 2008)
- Guidance on control measures (2008)

Methicillin-resistant *S. aureus* (MRSA)

- Review of "success stories" (2009)
- Guidance for prevention and control of MRSA in hospitals (2009) and in the community (2010)

ECDC-EMA joint report

- "The gap between multidrug-resistant bacteria in the EU and development of novel antibacterial medicinal products" (June 2009)"



Coordination and country visits

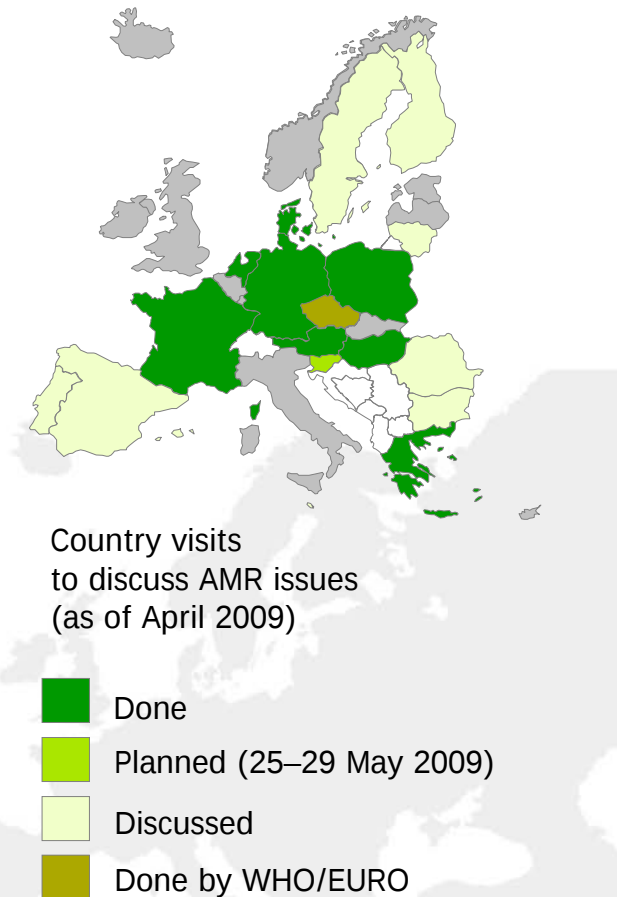


- **Network of AMR National Focal Points**

- **Country visits to discuss AMR issues**

- Based on Council Recommendation of 15 November 2001 on the prudent use of antimicrobial agents in human medicine (2002/77/EC)
- Reports (observations, conclusions, suggestions, examples of best practice)
- 9 initial visits (see map)
- 2 follow-up visits (Greece and Hungary)

- **Country visits to discuss HCAI issues (2010 onwards)**



Conclusions



- The frequency and the way we use **antibiotics** is the most important single determinant of antibiotic resistance.
- **Infection control** is paramount for the prevention and control of HCAI and of spread of resistant microorganisms
- Council Recommendation (2002/7/EC) and Council Conclusions of 10 June 2008, as well as Commission's Proposal for a Council Recommendation on patient safety, including the prevention and control of HCAI highlight the many activities that must be implemented by Member States
- **ECDC** is offering support:
 - Strengthening surveillance (in particular for HCAI)
 - Guidance for prevention and control
 - Country visits
 - European Antibiotic Awareness Day

18 November 2009



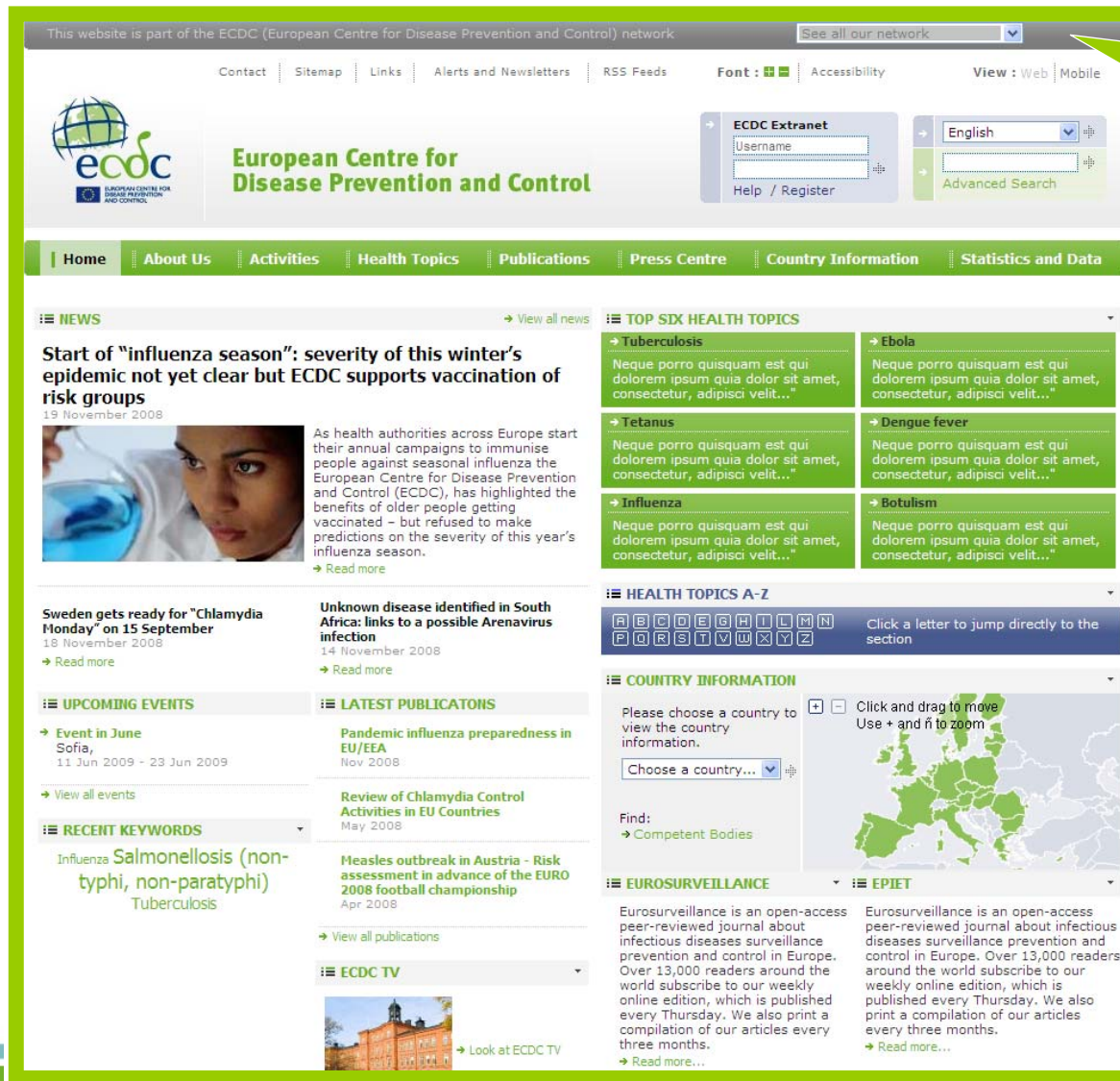
EUROPEAN ANTIBIOTIC AWARENESS DAY



A European Health Initiative



Thank you — and please visit our new website at www.ecdc.europa.eu (opening soon)



Network links on grey bar:
unique point of access to all ECDC-managed websites

- Extranet function
- Search
- Multilingual pages

- New sections: **country information** and **statistics and data**
- Contextual **navigation** on all internal pages
- Subscription to latest **updates/newsletters**
- Social **bookmarking**