



# Activities in Hungary for preventing AMR and controlling HCAI

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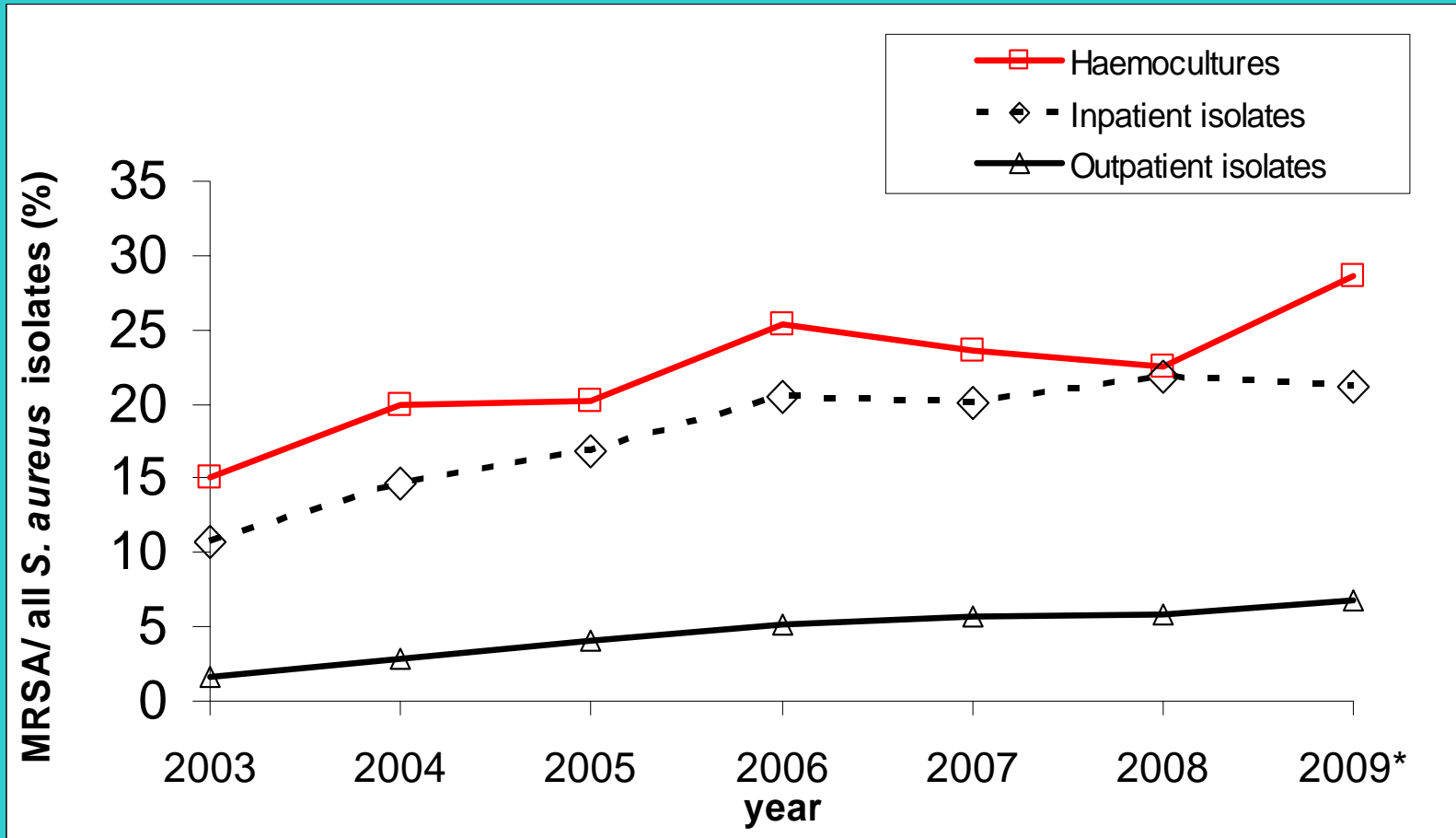
- Building up information for action
  - What has been done to prevent AMR and control HCAI?
  - Overall results
  - What should be done to prevent AMR and control HCAI?
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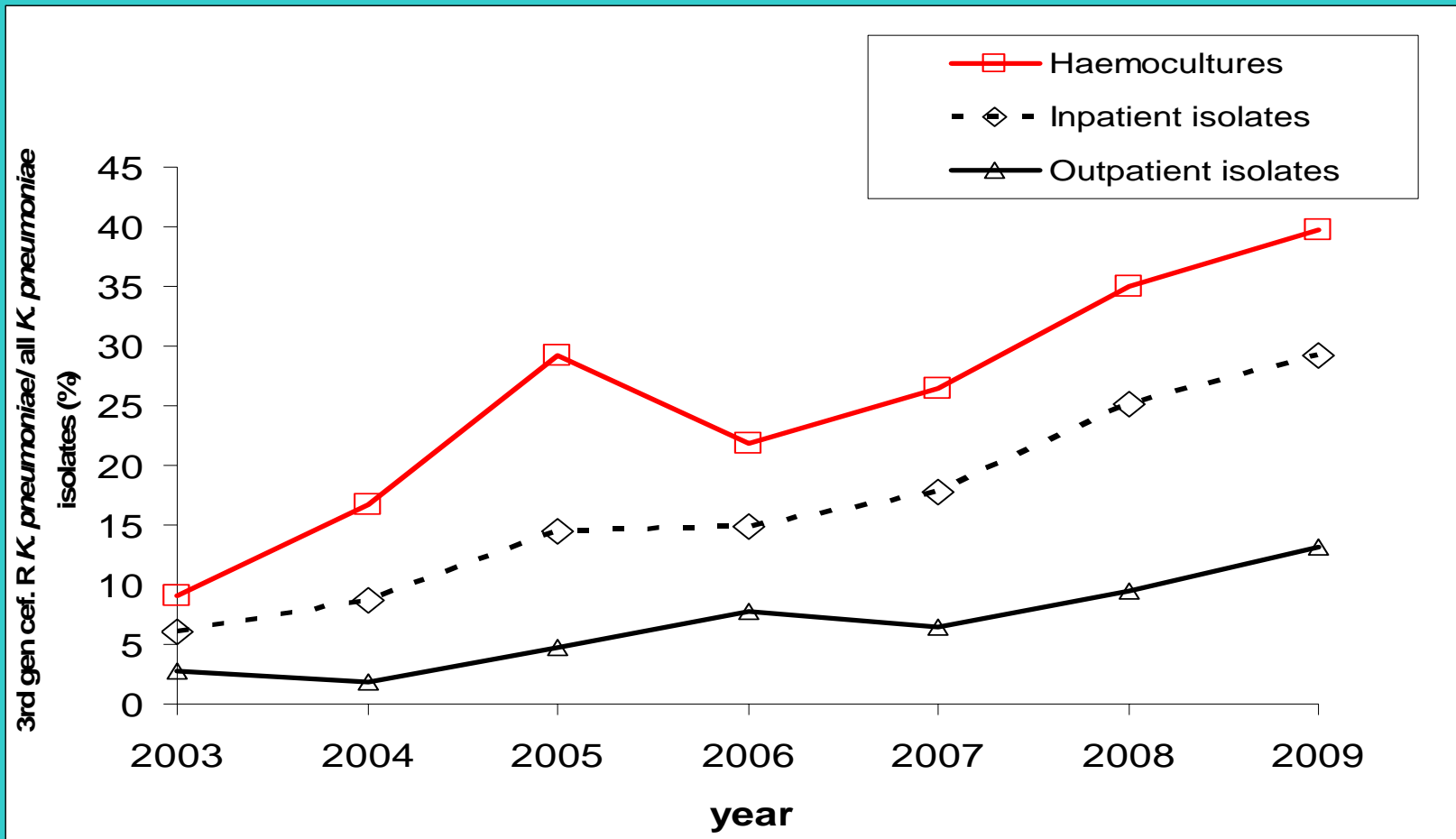
## **Building up information for action at the National Center for Epidemiology**

- **2001 establishment of National Bacteriological Surveillance System (NBS) - EARSS participant**
  - national reference laboratories for most important pathogens
  - molecular typing national reference laboratories
- **2004 establishment of National Nosocomial Surveillance System (NNSR) – HELICS participant**
  - ICU device associated infection surveillance
  - Surgical site infection surveillance
  - Hospital-wide surveillance of infections caused by MDROs
  - Hospital-wide surveillance of bloodstream infections
  - Mandatory report of nosocomial outbreaks

# Burden of MDROs in Hungary: Methicillin-resistant *Staphylococcus aureus*

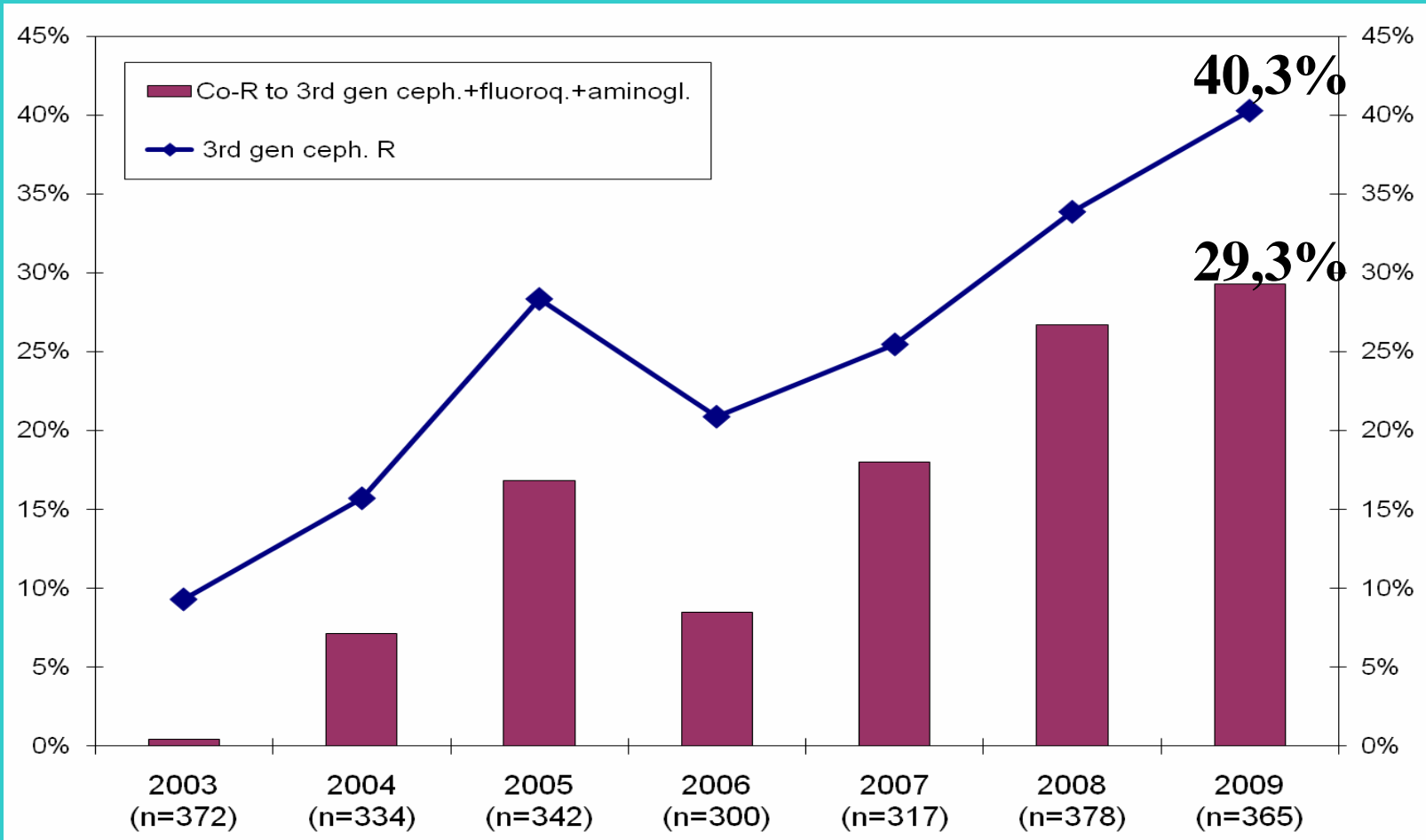


# Burden of MDROs in Hungary: 3.rd gen. cephalosporins resistant *K. pneumoniae*



# Burden of MDROs in Hungary:

## Combined resistance to 3rd gen cep., aminoglycosides and fluoroquinolones in *K. pneumoniae* isolated from blood



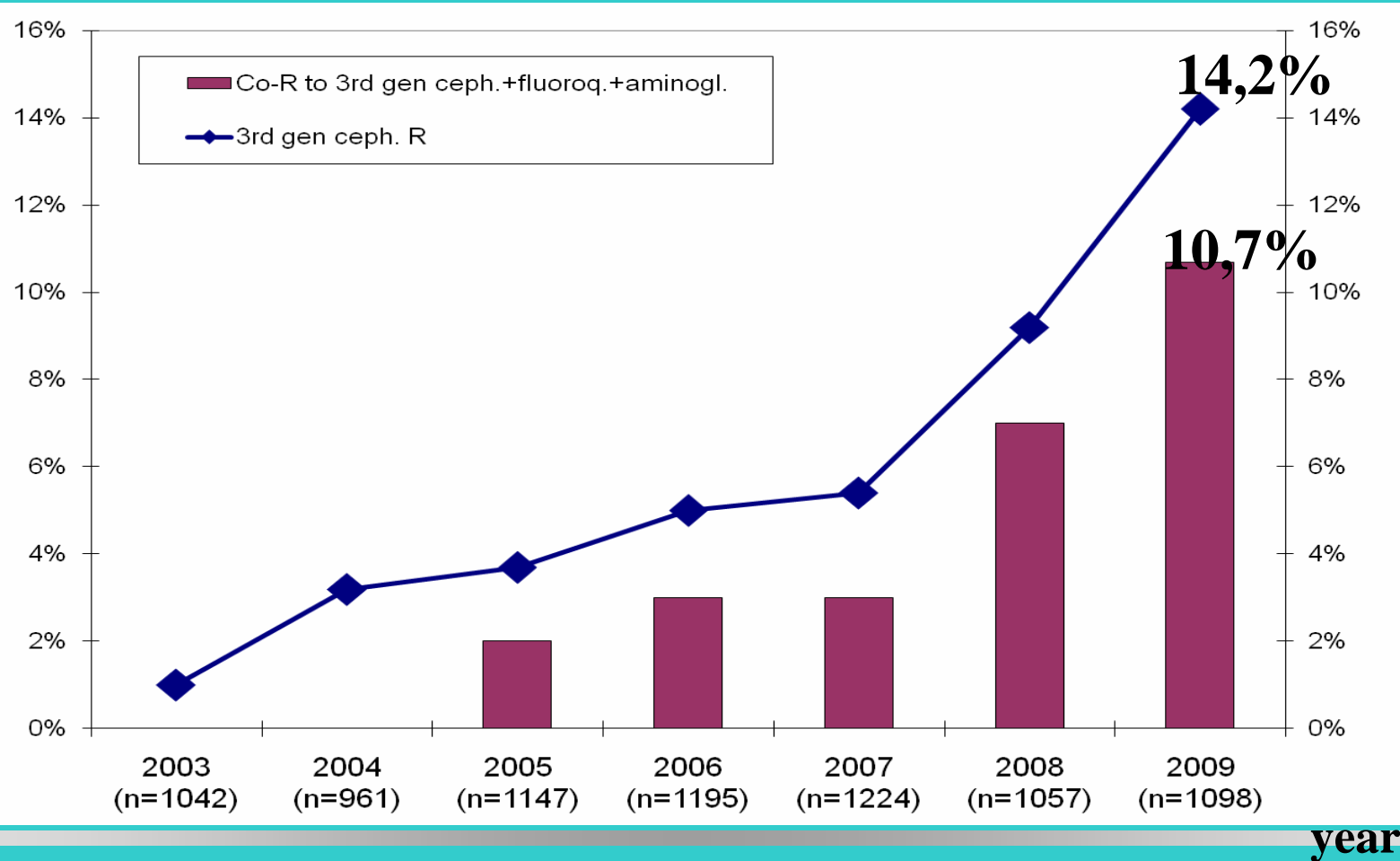
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# Burden of MDROs in Hungary:

## Combined resistance to 3rd gen ceph., aminoglycosides

and

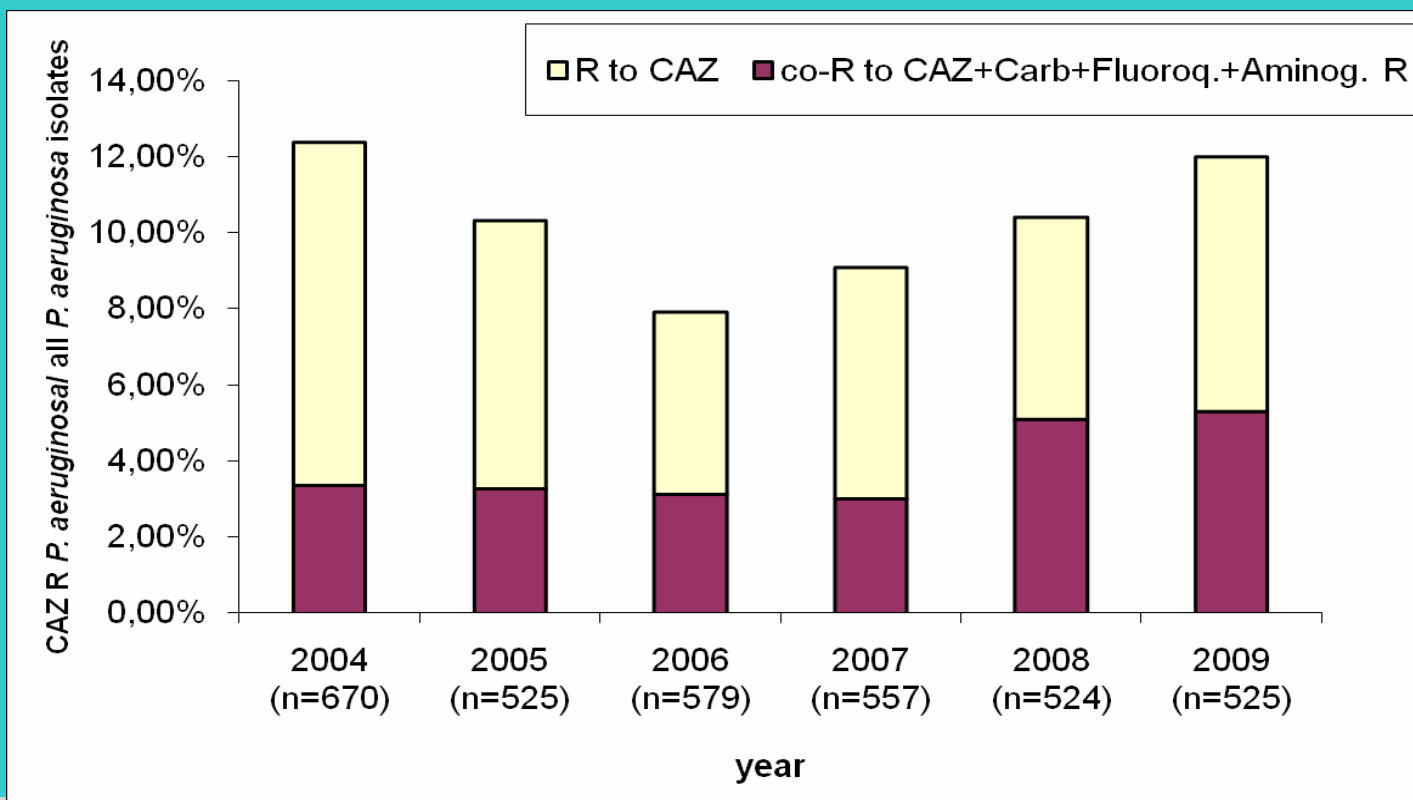
## fluoroquinolones in *E. coli* isolated from blood





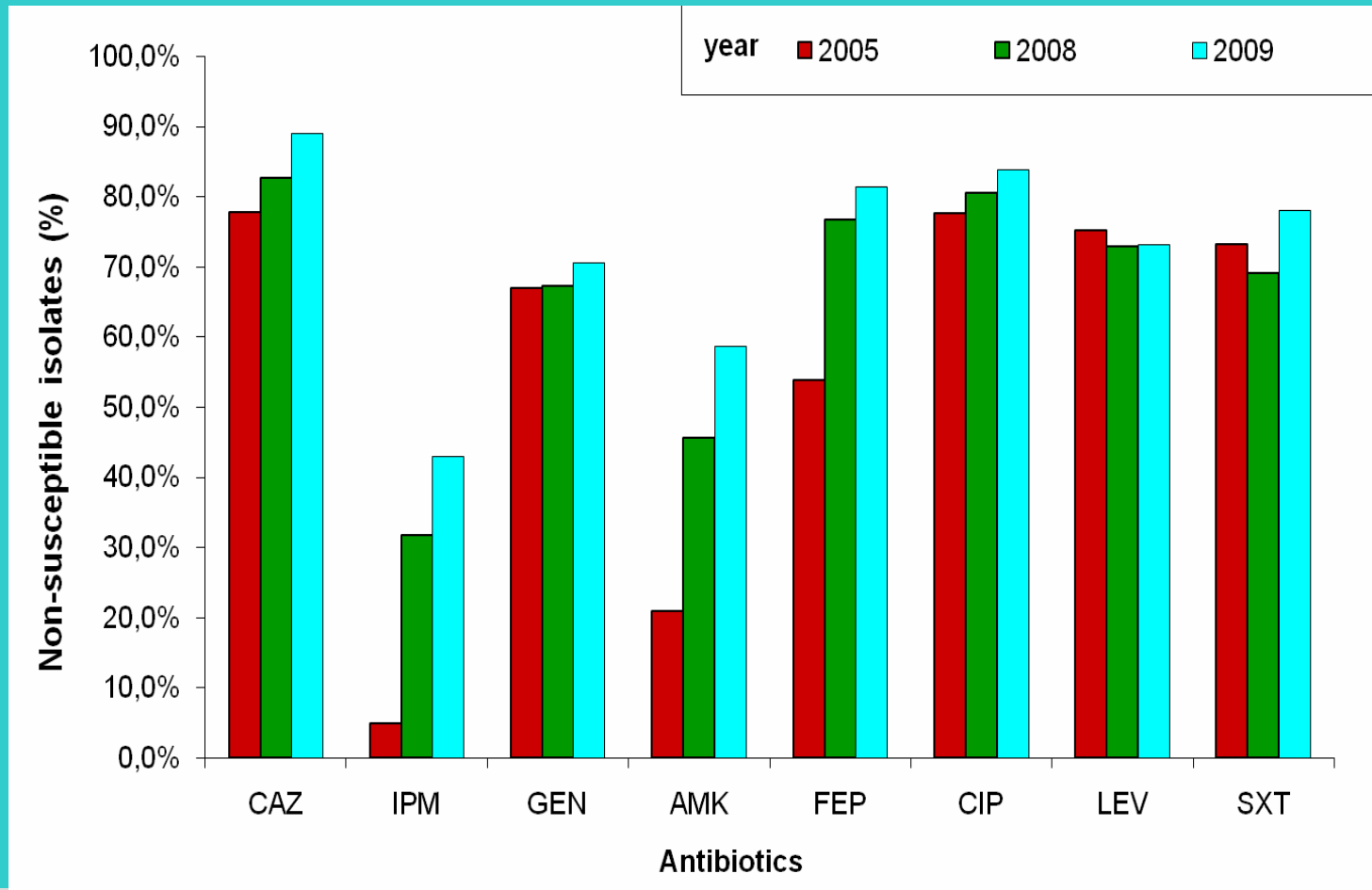
## Burden of MDROs in Hungary: Ceftazidim resistant *Pseudomonas aeruginosa*

- Resistance to ceftazidime (2009, HCs ): 11,9% (10,4% in 2008)
  - **Resistance to carbapenems (2009, HCs): 26,6 % (25% in 2008)**
- Combined resistance to four antibiotic classes (HCs)



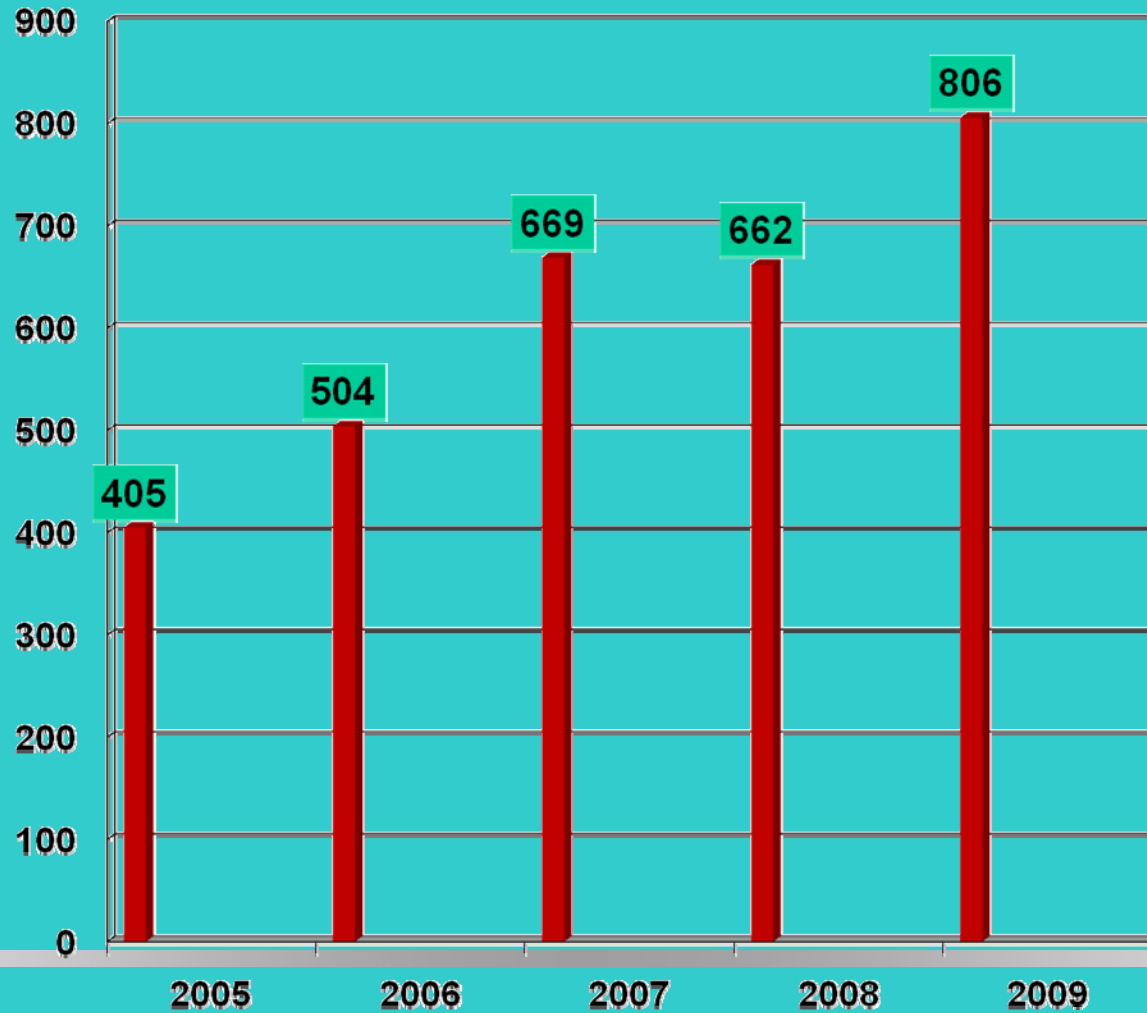


# Antimicrobial resistance of *Acinetobacter baumannii* (all isolates 2005, 2008, 2009, NBS)





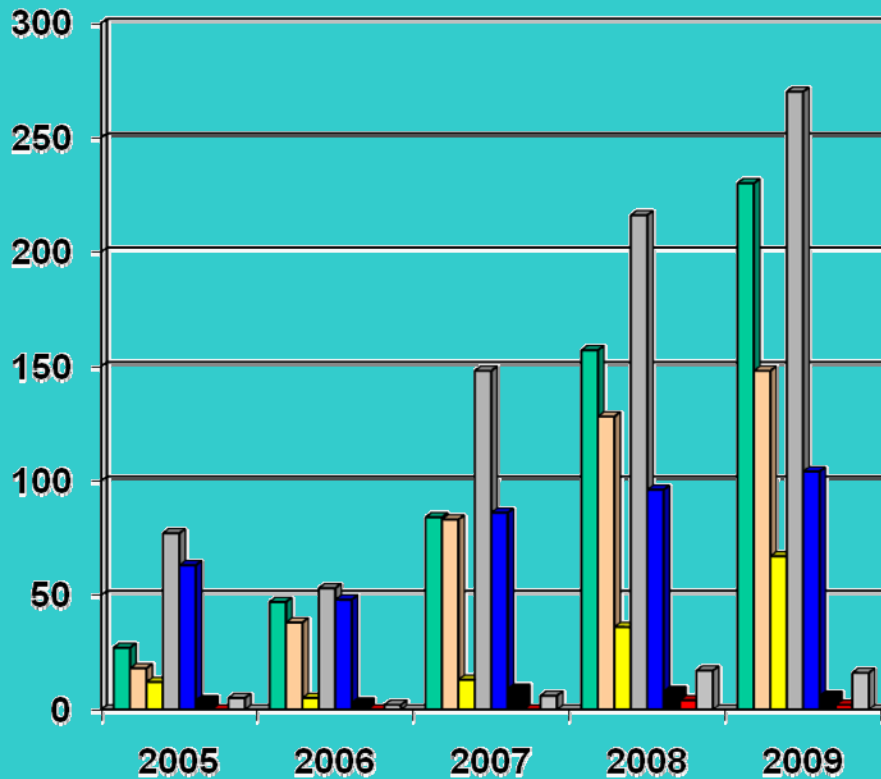
# Nosocomial infections caused by MRSA





# Nosocomial infections caused by MDROs

## MDRO-s (no of infections)



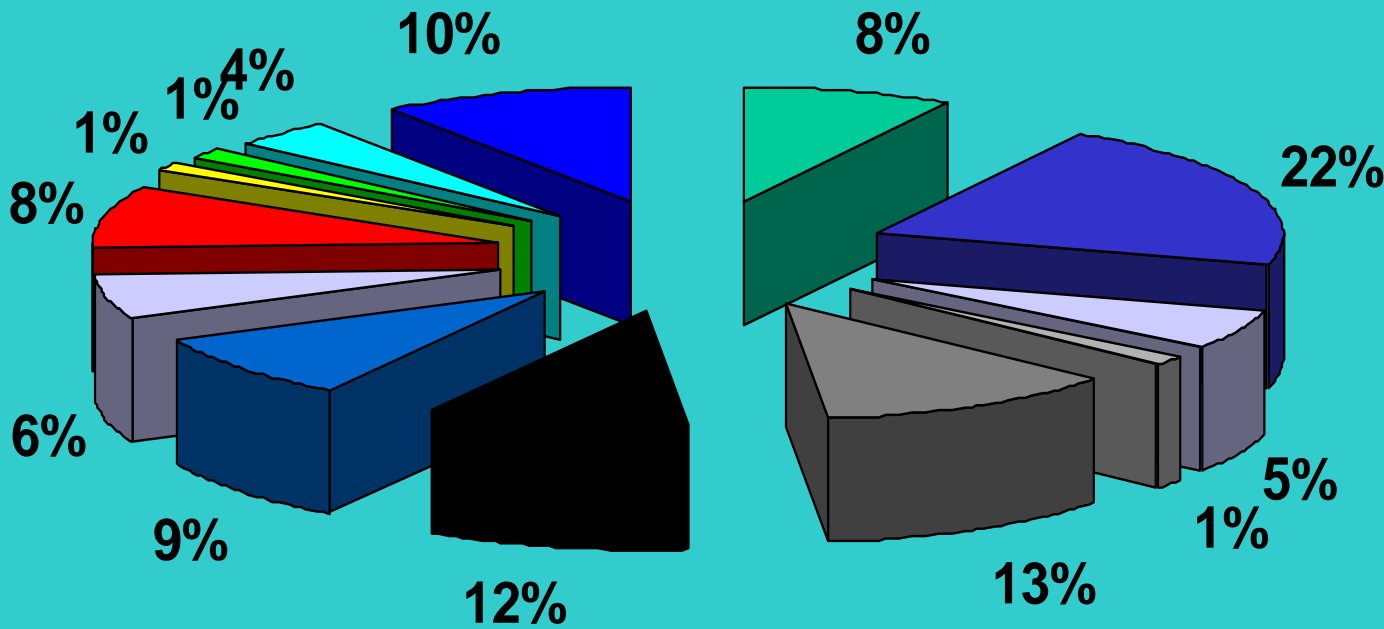
## MDROs under surveillance

- **MACI: MR *Acinetobacter*** ↑↑
- **MECO: MR *E. coli*** ↑
- **MENB: MR *Enterobacter*** ↑
- **MKLE: MR *Klebsiella*** ↑↑
- **MPAE: MR *Pseudomonas*** ↑
- **MSTM: MR *Stenotrophomonas***
- **VISA**
- **VRE**



# Hospital-wide BSI surveillance 2009

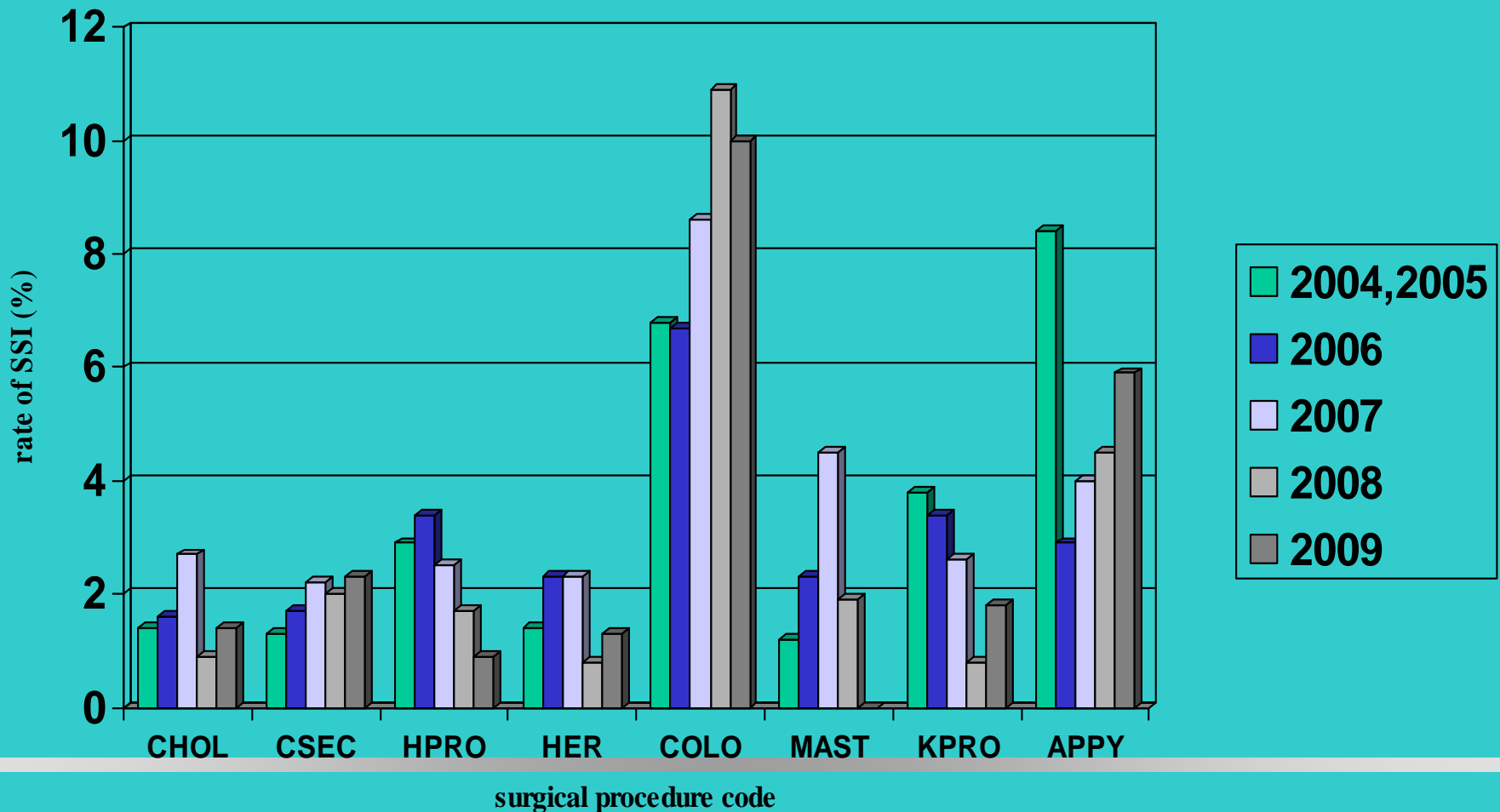
## Distribution of pathogens (1436)



- CNS
- S.aureus
- Enterococcus
- Streptococcus
- Klebsiella
- Pseudomonas
- E.coli
- Enterobacter
- Acinetobacter
- Serratia
- S.maltophilia
- Candida
- Other

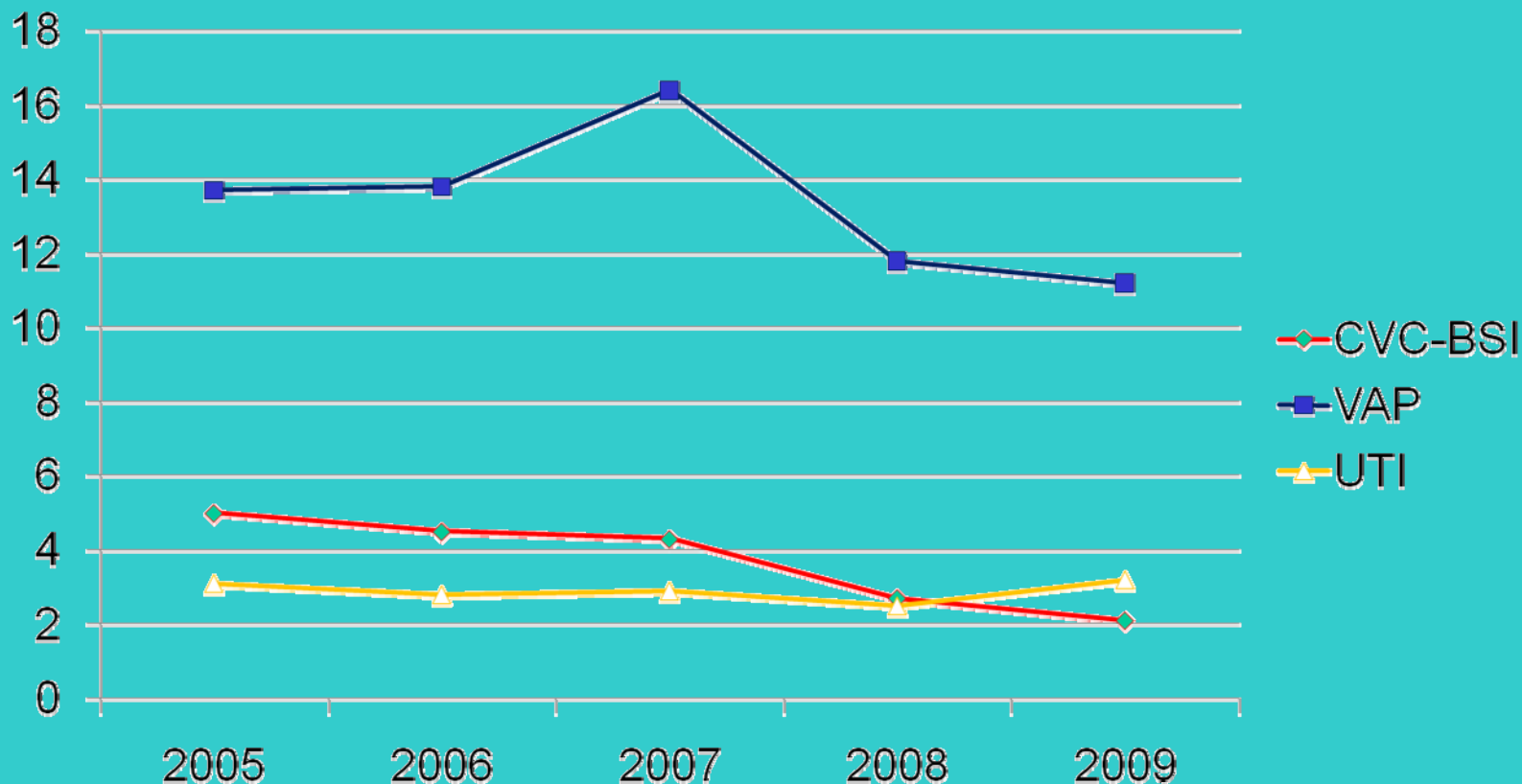


# Yearly SSI cumulative incidences by surgical procedure (2004-2009)





# ICU surveillance: Device-associated infection rates/1000 device days





# What has been done?

- Regular feedback of results and trainings (IC, microbiology)
- Adoption and online availability of most important recommendations for prevention and control of MDRO and HCAI (2001 – ongoing):  
BSI, VAP, UTI, SSI, MRSA, MDRO, isolation precautions, WHO hand hygiene guideline
- Legal regulation of infection control activities in Hungary (2009)
- National Infection Control and Antibiotic Therapy Committee (intersectorial mechanism)
- National activities on European AB Awareness Day
- National hand hygiene programme (2010)



# Legal regulation of IC

## Objectives:

- To contribute to building capacity for the prevention and control of AMR and HCAs and to strengthen existing surveillance systems
- To promote implementation of the Council Recommendation on the prudent use of antimicrobial agents in human medicine and Council Recommendation on patient safety, including the prevention and control of the healthcare associated infections
- MoH Decree 2009: Prevention of health care associated infections, minimum requirements for control
  - infection control activities
  - tasks of health care facilities
  - tasks of health authorities



# Tasks of infection control teams in hospitals



- Surveillance:
  - nosocomial infection surveillance
    - voluntary: SSI, ICU
    - mandatory: MDRO, BSI, nosocomial outbreaks
  - AMR surveillance
  - AB consumption surveillance
- To review practice, to identify local risk factors for HCAI, to implement measures to reduce/eliminate the risk factors
- Preventive measures:
  - to develop a local HCAI prevention strategy
  - to implement national recommendations on prevention of AMR and HCAs
  - to develop a local disinfection, sterilization policy
  - investigation of clusters, implement necessary measures for containment
  - contribution to local antimicrobial stewardship
  - prevention of infections among health care workers
  - deliver an infection control plan and verify implementation

# Infection control related tasks of health care facilities



- To have an infection control (IC) team/department
- To have a yearly IC programme
- To implement national recommendations on prevention of AMR and HCAs
- To participate in the National Nosocomial Surveillance System
- IC indicators to be part of the hospital quality improvement system
- To have an IC handbook
- To deliver a yearly report on IC activity to the health authorities
- To have a local multidisciplinary infection control and antibiotic therapy committee – with advisory role towards the hospital management

# Infection control related tasks of health authorities



- To control and supervise hospitals' IC activities
- To support and operate the National Infection Control and Antibiotic Therapy Committee
- To support and operate the Regional Infection Control and Antibiotic Therapy Committee
- NCE
  - coordination of surveillance systems and feedback of results
  - participation in European surveillance systems
  - contribution to recommendation on prevention and control of AMR and HCAIs

# National Infection Control and Antibiotic Therapy Committee



- **Tasks:** to establish and develop policies and programmes on infection control
- **Objectives of 2010:**
  - to develop of a country-wide AB consumption surveillance system
  - to improve exchange of data and experiences on AMR in human and veterinary field
  - to assess perioperative antibiotic prophylaxis compliance with existing recommendations, revise existing guidelines
  - to support **Regional Infection Control and Antibiotic Therapy Committies'** activities



# Overall results

- Significant reduction in HPRO and KPRO SSI rates (2005-2009)
- Significant reduction in CVC-BSI rates in ICUs (2005-2009)
- Increasing and threatening AB resistance trends for:

***S. aureus, K. pneumoniae, E.coli, P.aeruginosa, A. baumannii***



# What should be done to prevent AMR and controlling HCAI?

- Long-term national strategy to prevent and control AMR
- More effective national programme to prevent and control AMR and HCAs with emphasis on AB stewardship, prudent use of ABs and AB consumption survey
- Increase compliance with IC guidelines
- A national programme on patient safety



# Thank you for your attention



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