Ongoing and potential future EC activities on monitoring and control of MRSA

Food and Veterinary aspects

Dr. Kris De Smet
Human prevalence of MRSA (% of all *S. aureus*)

- Canada (6%)
- **UK (42%)**
- Denmark/ Norway (<1%)
- **Europe (24%)** (range 1-60%)
- Japan (74%)
- China (39%)
- Taiwan (61%)
- **Hong Kong (80%)**
- Singapore (63%)
- India (34%)
- Australia (30%)
- USA (36%)
- Latin America (29%)
- Africa
  - Nigeria (21%)
  - Zimbabwe (43%)
  - South Africa (49%)
MRSA in animals

- See other presentations for detailed overview
- MRSA ST398
  - 2005: human cases associated with pig farming in the Netherlands
  - 2006: High prevalences in the NL in pigs, pig holders, their relatives and veterinarians
  - 2007: similar findings in Belgium
  - Also in horses, dogs, cattle and poultry
Initiative of the European Commission

- 2008 baseline survey for *Salmonella* spp in breeding pig extended to MRSA
- Decision 2008/55/EC*
- Based on technical specifications provided by the EFSA Task Force on Zoonoses Data Collection

*OJ L 14, 17.1.2008, p. 10
EU Baseline survey on MRSA

- 27 Member States + Norway & Switzerland
- January to December 2008
- 2 populations:
  - Nucleus and supplier/multiplier holdings
  - Production holdings
- Up to 171 holdings /country / population
- EC cofinancing: 1 950 000€ (including *Salmonella* analyses)
Some information collected

- Holding: size, type of production holding, replacement policy of gilts and boars.
- Sampled pens: indoor/outdoor, individual housing, floor, use of antibiotics
- Samples:
  - Mandatory: PCR confirmation, Spa typing
  - Optional: MLST typing, SCCmec typing, Antimicrobial susceptibility testing
Sample collection and analysis

- 5 dust samples using dry sterile swabs in five pens of each holding
- Pooled sample analysed in laboratories with proven experience
- Selective enrichment followed by MRSA identification by PCR
- Subtyping for link to human isolates
- Antimicrobial susceptibility testing
Reporting and Communication of results

Laboratory → National competent authority → EC → EFSA

Communication of provisional national results?

Communication of final EU results mid 2009
Objectives of the MRSA survey

- Comparable prevalence data on MRSA in breeding pigs in all Member States
- Link with human isolates
- Awareness of hospitals / medical sector
Needs before measures are considered

- Results of the baseline study
- Assessment of risk for humans through contact or food
- Link with use of antibiotics
- (Other) risk factors
- Mitigation options
- Cost/benefit analysis
Possible future initiatives

- Mandatory monitoring in pigs and other animals
- Setting a target for reduction?
- Trade restrictions between infected holdings and non-infected?
- Restricting the use of (certain) antibiotics?
- Criteria in food?
Antimicrobial resistance in animals and humans

- *Strep. pneumoniae*
- *Strep. pyogenes*
- *Pseudomonas aeruginosa*
- *Acinetobacter baumannii*
- *Salmonella*
- *E. coli*

**Humans**
- HA-MRSA
- CA-MRSA
- MRSA ST398

**Food Animals**
Monitoring of antimicrobial resistance (Dec 2007/407/EC) in *Salmonella* isolates*

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*: In addition, antimicrobial resistance of *Campylobacter* isolates in broilers is monitored in all Member States.
Conclusion

Both human and veterinary medicine should take their responsibility as regards control of MRSA and antimicrobial resistance