*Dear EARSS participant,*
*In the year that the European Centre for Disease Control (ECDC) will take over from DG Sanco and EARSS and its products will be evaluated, the importance of communicating to you by our newsletter becomes evident. In this 8th edition we will mainly focus on the EARSS-EUCAST plenary meeting and the discussions we had about antimicrobial resistance in Europe and naturally the future of EARSS. As usual an update of EARSS and Advisory Board members can be found in this newsletter as well. We greatly enjoyed and appreciated working with you for another year and we hope you all feel the same, as good collaboration is the key to a successful surveillance network.*

**Items in this Newsletter:**



**New countries delivering data:** In 2005 EARSS has been joined by Turkey, who was part of the Antimicrobial Resistance in the Mediterranean Region network (ARMed) before. This year Bosnia intends to start delivering data to EARSS as well. The total number of countries participating in EARSS will be 33 then.

## 1. First joint EARSS-EUCAST Plenary meeting in Rome, November 2005

*Attendees of the EARSS-EUCAST Plenary Meeting on the roof of the Istituto Maria SS. Bambina. In the background is Saint Peter's cathedral.*

This year we all gathered in the Istituto Maria SS. Bambina within the walls of the Vatican and had a blissful meeting with EARSS-, as well as EUCAST members.

## Situation of antimicrobial resistance in Europe

The EARSS-EUCAST joint session was opened with heartily words of welcome from Giuseppe Cornaglia, who expressed his gratitude to the organizers for hosting this meeting in Rome. Then Hajo Grundmann started with a presentation about the EARSS results in 2004. He showed that EARSS is still a growing network, now receiving data from laboratories that provide services for about 100 million European citizens. He described the increasing problem of MRSA, and that even in countries with low endemicity such as in Scandinavia and the Netherlands the proportion of MRSA is increasing. Slovenia and France were the only two countries that showed a decrease in MRSA proportions in 2004. Third generation cephalosporin and fluoroquinolone resistance of *E.coli* isolates also shows an alarming trend in most countries. The former appeared to be mediated through ESBLs of the CTX-M class, since most resistant isolates were found to be ESBL positive.

Vincent Jarlier presented how to evaluate MRSA rates in the community through EARSS results. He stated that to be able to differentiate between community acquired (CA-) and hospital acquired (HA-) MRSA, the extra information available in the EARSS database on gender or age of the patient, type of hospital or the type of specimen does not provide enough insight. Ward type (admission ward) and (a short) length of stay until infection might be able to differentiate between CA- and HA-MRSA, but referral and readmissions of patients distort these findings. He concluded that to be able to differentiate between CA- and HA-MRSA, EARSS data are not sufficient, and specific studies of prospective nature will be required, with standard protocols and recording of historical and pertinent patient data.

Dr. Annalisa Pantosti, the Italian host, gave an interesting insight into the Italian situation. Italy started their national EARSS initiative in 2001. It could be shown that there is a wide variation in antibiotic resistance throughout Italy, whereby antibiotic resistance and consumption are highly correlated.

## EARSS denominator information 2004

Marlieke de Kraker presented the results of the laboratory/hospital questionnaires. This year (2004) 93% of all countries, 64% of all laboratories and 61% of all hospitals responded, an increase over the last questionnaire in 2002. For most countries, population coverage was well above 20%, and a broad range of specialities and different types of hospitals were included. It thus seems that the EARSS database is sufficiently representative to identify national resistance trends. Furthermore, the frequency with which blood cultures are used for diagnostic purposes seemed sufficient in most countries. Nevertheless some countries and especially some hospitals could increase their diagnostic efficiency by improving diagnostic habits among clinicians. MRSA resistance proportions as collected by EARSS are comparable to the incidences of MRSA bacteraemia in most centres. It was concluded that collecting denominator information is indispensable and a necessary cross check for objective evaluation of EARSS results and resistance proportions as provided by EARSS. It was concluded that EARSS draws a credible picture of antimicrobial resistance for most countries in the European region.

## EUCAST

Gunnar Kahlmeter presented the latest achievements of EUCAST during the joint session. He provided an overview of the objectives and solutions to the obstacles in providing and promoting standardisation and consensus on breakpoints, susceptibility testing and epidemiological cut-off values across Europe. The problem is that breakpoint committees have no legal authority, this rests with Medicine Agencies, like EMEA for Europe and FDA for the USA. EUCAST has in the past years established an extremely successful and efficient working relationship with EMEA. EUCAST suggests, for EMEA's approval, breakpoints for new antimicrobials to be put in the Summary of Product Characteristics for these drugs. Furthermore all national breakpoint committees in Europe have agreed to apply harmonised EUCAST breakpoints in their respective national methods, which means that irrespective of the national guidelines used in different laboratories and in different countries the same conclusions on clinical resistance categories (S, I, or R) will be drawn for aminoglycosides, fluoroquinolones, glycopeptides and oxazolidinones. The process now continues with carbapenems, cephalosporins and penicillins which should be completed during 2006. This is a major breakthrough and will undoubtedly improve the comparability of resistance proportions between countries and the value of the EARSS network. EUCAST is now trying to ensure that these breakpoints will be integrated in automated laboratory systems (VITEK,

PHOENIX, etc.). All recommendations, wild type distributions etc. provided by EUCAST are freely available from the website at www.eucast.org.
Derek Brown compared the breakpoint guidelines used between countries by using data from EARSS and UK-NEQAS. Although both datasets were not fully representative for the individual countries and did not include all countries, he showed that most laboratories used CLSI (55-62%) and the disc diffusion method. In some countries national guidelines like CA-SFM in France, BSAC in the United Kingdom and SRGA in Sweden could lead to different interpretations. Furthermore, there was some evidence that laboratories did not always comply strictly with the methods advocated in the used guidelines and deviate in an unpredictable individual manner. He concluded that for some organisms using different guidelines and methods will result in differences in interpretation by laboratories as measured in the UK-NEQAS external quality assurance scheme.

### First results of New Pathogens

This year also saw the inclusion of *Klebsiella pneumoniae* and *Pseudomonas aeruginosa* into the EARSS data collection. Although only data from a limited number of countries were available, Jos Monen shared the first results with the audience. After the discussion that followed, it became clear that reporting cumulative aminoglycoside resistance by lumping the results of amikacin, gentamicin and tobramycin was unwise, since different mechanisms convey resistance in these species. We therefore decided on minor changes in the protocol. In the future EARSS will only ask results for gentamicin or tobramycin. Amikacin results are still appreciated, but remain optional.

**Change in the EARSS *Pseudomonas aeruginosa* protocol:**
Formerly amikacin was lumped together with gentamicin and tobramycin to determine aminoglycoside resistance. As the resistance mechanisms are not the same, amikacin is no longer included and gentamicin and tobramycin will be reported separately.
See the changed protocol on the EARSS website: **www.earss.rivm.nl**

### The future of External Quality Assessment (EQA) in Europe

Hajo Grundmann explained the financial shortcomings that EARSS faced with the annual EQA in 2005. Due to a larger than expected increase in the number of laboratories participating in EARSS, not enough funding was available for another EARSS-EQA exercise. Nevertheless, EQA is very important. All National Representatives strongly agreed upon that. It would be beneficial for the laboratories if they would all participate in an EQA, preferably, an EQA that covers more species, more drug-bug combinations and is organized more often than the EARSS-EQA. After all, a realistic assessment of diagnostic quality can only be obtained if EQA is part of the routine diagnostic work flow. Many laboratories already participate in such schemes on a national or international basis such as the regular UK-NEQAS EQA, but other countries rely on the EARSS-EQA as their only means. In order to guide future EQA initiatives, it was agreed to have an inventory, by means of a questionnaire to all National Representatives about the EQA schemes already in place and visions on future solutions. This questionnaire will be send in due course.

Christine Walton presented what UK-NEQAS can offer to individual laboratories. UK-NEQAS, a non-profit organisation, has been providing EQA for antimicrobial susceptibility testing for over 30 years. From the Health Protection Agency in Colindale every year twelve strains with known but undisclosed content are distributed to provide assessment of the standard of performance of an individual laboratory. The participating laboratories will then test these strains routinely (on a monthly basis) and send their results to the Health Protection Agency. UK-NEQAS will collate and analyse the results and send overall and individual feedback to all laboratories, including comments, detailed analysis and advice related to particular susceptibility testing problems highlighted. There is also a detailed breakdown of results for each agent and each organism, and educational information (http://www.ukneqas.org.uk).

It was discussed whether the money left should be spent on the countries that do not participate in an EQA yet. Some people agreed, but all realized that it will be difficult to decide which countries should receive financial support. No solution that retains equity could be

foreseen. Furthermore, as EARSS funding will be in hands of the ECDC from Sept 2006 any structural solution needs to include the view of ECDC
Another proposal was to provide a purely educational exercise. This could qualify for continuous medical education and retain some of the educational value although it will, of course, never replace the experience of a real EQA. Fernando Baquero presented an example of such an educational EQA exercise, with pictures, questions and feedback. This exercise could be organised in similar fashion as the EQA with regular postings through the EARSS website. All National Representatives were very enthusiastic about this idea and EARSS-MT will take this further in 2006.

### EARSS-ibis

The new features of EARSS-ibis were discussed. The most important improvement is that EARSS-ibis now offers multi-lingual access. During the meeting, translations in English, German and Slovenian were already available, and the representatives were invited to provide the translation in their own language to improve the EARSS-ibis platform as a national communication tool.
Many volunteered, and as a result we already had translations for all EARSS-ibis facilities in 11 languages at the moment this newsletter was prepared. With the addition of the possibility to use your own language, EARSS-ibis is expected to become a useful tool for professional communication and advice on microbiological issues on the national level in all participating countries.

### Identifying the dominant strains of *S. aureus* causing invasive infections in Europe

Through its grant agreement with DG-SANCO, EARSS is committed to improve the understanding of the spread of antimicrobial resistance by identifying the expansion of clones of particular public health importance through common typing approaches. For this reason EARSS undertook a European-wide consultation of scientific experts and stakeholders in the field of molecular typing of *S. aureus* including the EARSS National Representatives (EARSS-NR) and National Reference Laboratories (NRL). As a result of this consultation, sequence-based typing approaches were identified as the only reliable system that allows both unambiguous clone designation, unequivocal comparisons, and real time quality control since sequencing utilises a common and biological meaningful language, the genetic code. A comparison of sequence-based approaches (MLST, *spa*-typing) with the most frequently used typing technique (PFGE) identified *spa*-sequence typing of *S. aureus* as the most promising technique in terms of ease, costs, discriminatory ability and excellent concordance with the other two. With the wide availability of sequencing capacity at NRLs and user-friendly software that allows for automatic strain identification and on-line quality control at the time of sequence submission, the means for easy communication and international comparison of typing information are available for *spa*-sequence typing.
A central database at http://www.ridom.de/spaserver/ has been established where information of *spa*-types, their frequencies and relation to MLST sequence types and epidemiological information is freely available. During two workshops in fall 2004 and fall 2005 (the 2005 workshop was sponsored by EARSS) laboratory experts from 28 European countries were trained in all aspects of *spa*-sequence typing (DNA purification, amplification, sequencing, editing and submitting). At the EARSS plenary meeting a decision was supported by all EARSS-NR to pilot an initiative of “Identifying the dominant *Staphylococcus aureus* strains causing invasive infections in the European region” using the *spa*-sequence typing approach for isolates submitted by the EARSS participating hospitals. It was decided that EARSS-MT was to draw up the study objectives and protocol, that the EARSS-NRs work in close collaboration with the NRLs dedicated to *S. aureus*, and that the necessary computer software should be provided to the NRs/NRLs by EARSS.
This is a joint initiative which shall include EARSS and SeqNet.org represented by Alex Friedrich from the Institute of Hygiene, University of Münster and Wolfgang Witte from the Robert-Koch-Institute, Wernigerrode, Germany.

During the plenary meeting Dr. Friedrich explained the gaols of SeqNet.org. It is the aim to build capacity for sequence based typing in Europe (amongst others by organising workshops), provide internal and external quality control and promote exchange of typing data on the basis of common unambigiuous strain designation., This is easily achievable via access to a web based server. Already 66 laboratories in 35 countries provided data on 11,017 *S. aureus* isolates in the database. All submitting laboratories have gone through a SeqNet.org certification process which shows their ability to generate high quality sequencing data. The principles of national ownership and quality control will be addressed by SeqNet.org.

### Serotype distribution in AMR *Streptococcus pneumoniae*

At the plenary meeting Nienke van de Sande-Bruinsma presented the latest results on the serotype data collected for *S. pneumoniae* in the EARSS database. Six countries provided at least 50 *S. pneumoniae* isolates with serotype data (BE, CZ, DK, IS, SI, UK). As has been described in the latest annual report, serogroups 1 and 14 were most prominently found among the invasive *S. pneumoniae* isolates reported to EARSS by 4 of these 6 countries (exceptions were Czech Republic where serogroups 3, 4 and 6 and Iceland where serogroups 7 and 9 were most frequently found). However, for all countries reduced susceptibility to penicillin was most prominent among serogroups 9 and 14. Furthermore, the majority of erythromycin resistance was represented by serogroup 14, but was widely dispersed among the other serogroups (though at a low prevalence) as well. The results showed that serogroup 14 represented the largest group of isolates found among young children (0-4 years) and that 80% of the isolates from this serogroup was resistant to penicillin and/or erythromycin. Similarly, serogroup 14 was also the most prominent among the elderly (>65 years), which may indicate that contact with young children, as a reservoir of pneumococci, is a risk factor for invasive disease in adults. To be able to get a better view on the serotype distribution of resistant pneumococci we would like to stimulate more countries to report serogroup data in the EARSS database. If you have technical problems with linking this kind of data to the EARSS database please contact our international datamanager Jos Monen at jos.monen@rivm.nl.

### ARMed

The project on Antimicrobial Resistance Surveillance and Control in the Mediterranean region (ARMed) started in 2003 and will run until 2006. Michael Borg explained that the project consists of surveillance of antimicrobial resistance, antibiotic use, and infection prevention and control. Before this project started, data from the southern and eastern Mediterranean region were sparse and non-standardized, which made comparison between countries difficult. Now, data are available for 11,000 isolates, from 59 laboratories in Algeria, Cyprus, Egypt, Jordan, Lebanon, Malta, Morocco, Tunisia and Turkey. For the surveillance of antimicrobial resistance, EARSS protocols were adopted, IT training for data-management and External Quality Assurance exercises for the laboratories were organized through the EARSS facilities in Bilthoven. Preliminary results showed that in the southern Mediterranean region more multiresistant *E. coli* and *S. aureus* isolates were reported than in EARSS. *S. pneumoniae* isolates were more often resistant to penicillin than to erythromycin, in contrast with EARSS results.
In collaboration with ESAC, antibiotic consumption surveillance has been performed. Mainly hospital consumption data is collected, which shows that in most countries, broad spectrum antibiotic use is high. More results, including efforts on hospital infection control, of the ARMed project will be presented on the Euromed conference on antibiotic resistance in the Mediterranean region, 10-12 November 2006, Malta.

### The Future of EARSS with ECDC

The current contract between EARSS and DG-SANCO (European commission) will expire on the 1st of September 2006. From then on, funding of EARSS will be taken over by ECDC. One of the key components of the surveillance strategy of ECDC is the evaluation and assessment of surveillance networks (including EARSS and all other Dedicated Surveillance Networks funded so far by the European Commission). Pending this evaluation a decision on the continuation of each network will be taken. The current strategy of ECDC foresees a gradual integration of all surveillance activities with ECDC attaining the main coordinating role in the future process. If and which functions and activities of the networks will be transferred to ECDC will be decided during a process that will start with the evaluation and will for the EARSS network continue after the present contract runs out. For the time being it appears that changes will be introduced gradually as it is not in the interest of ECDC to compromise the smooth functioning of the successful EARSS initiative. The evaluation process will cover the assessment of the objectives and activities of the networks as defined in their current contracts, the assessment of the usefulness of the activities and outputs, the assessment of the technical performance of the network, and an assessment of the capability of the network to meet the future surveillance objectives for the respective disease. The evaluation of EARSS is scheduled to start in spring 2006.

There was agreement among the members of the plenary meeting that EARSS represents a valuable surveillance tool and contributes vastly to the national and international efforts to contain antimicrobial resistance in Europe. Since all data and their exploration and analysis has been a joint effort supported by all EARSS participants, ECDC needs to be prudent not to endanger the integrity of this network that has over the years grown into the largest public health initiative on antimicrobial resistance worldwide.

## 2. New EARSS website

You may have already noticed that the EARSS website has been updated! Please see our new website at www.earss.rivm.nl. If you have any questions or suggestions about the website do not hesitate to contact our website coordinator Esther Bosch at esther.bosch@rivm.nl.

## 3. Data managers and data mining workshop, June 2006

This year we will have a special data managers workshop. The members of the Advisory Board indicated that they would like to take a closer look at the EARSS database, to see what kind of scientific analysis could be pursued further. From the 1st until the 3rd of June all datamanagers and Advisory Board members will be invited to the RIVM to have a joint workshop, together with EARSS-MT and John Stelling from WHO-NET.

## 4. EARSS at ESCMID in Nice

The following EARSS results will be presented at the 16th European Congress of Clinical Microbiology and Infectious Diseases in Nice, France, April 1-4, 2006:

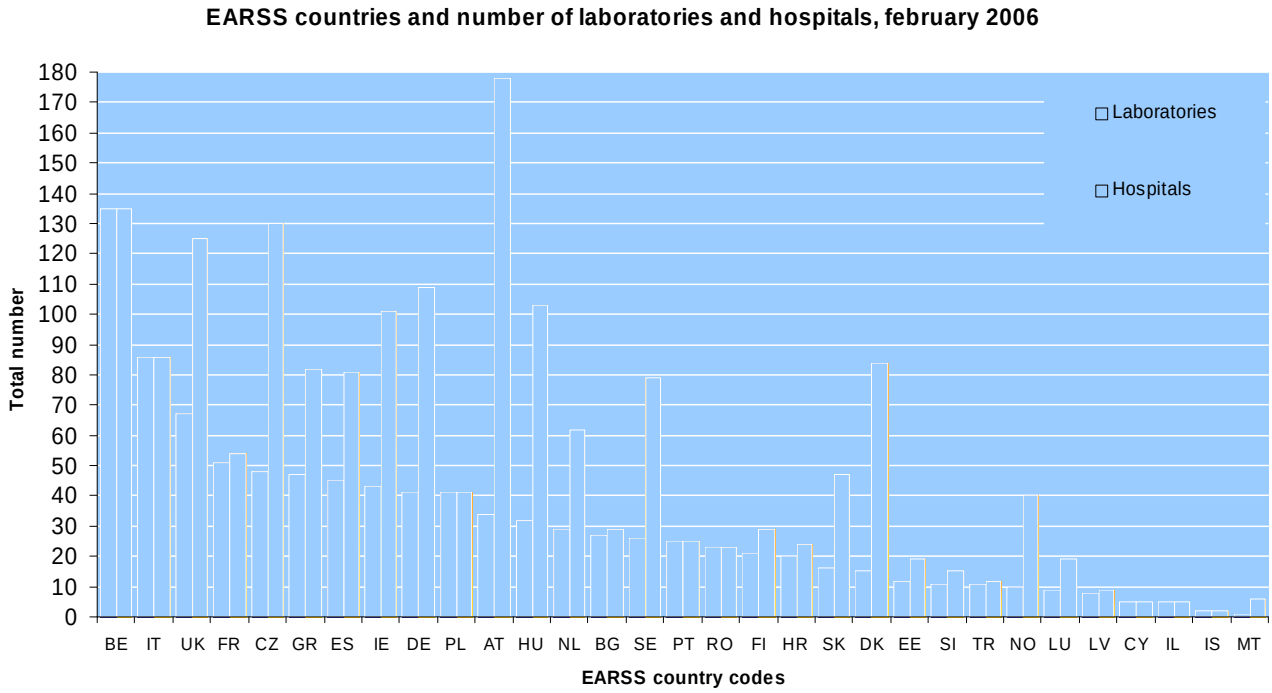
- Serious developments of antimicrobial resistance in Europe: results from EARSS. N. Bruinsma, M.E.A. de Kraker, G. Kahlmeter, G. Cornaglia, F. Baquero, J. Monen, H. Grundmann and EARSS participants. At the Poster Session IV in the topic entitled Epidemiology of resistance to antibiotics - to be held on Monday, 3 April 2006 from 13:00 hr to 14:00 hr.
- MRSA incidences and proportions: How well do these correlate on a European level? M.E.A. de Kraker, N. Bruinsma, J. Monen, M.A. Borg, G. Kahlmeter, J. Kolman, H. Grundmann and EARSS participants. At the oral session entitled 'Epidemiology of MRSA, VRE & other Gram-positives' – to be held on Monday, 3 April 2006 from 15.30 hr.

As in previous years, members of the EARSS-MT will be present at the **European Network Corner** to answer all your questions about EARSS and give demonstrations of EARSS results, the website and EARSS-ibis.

## 5. The EARSS Advisory Board 2006

| Name | Representing | Institute |
|---|---|---|
| Prof. Fernando Baquero | ESGARS | Hospital Ramon y Cajal, Madrid, Spain |
| Dr. Guiseppe Cornaglia | ESCMID | University of Verona, Italy |
| Dr. Gunnar Kahlmeter | EUCAST | Central Hospital Växjö, Sweden |
| Prof. John Degener | all countries | University Hospital Groningen, The Netherlands |
| Prof. Vincent Jarlier | all countries | Groupe Hospitalier Pité-Salpétrière, Paris, France |
| Prof. Alkiviadis Vatopoulos | all countries | National School of Public Health, Athens, Greece |
| Dr. Jana Kolman | all countries | University Medical Center, Ljubljana, Slovenia |
| Dr. Arta Balode | all countries | Paula Stradina Clinical University Hospital, Riga, Latvia |

## 6. EARSS Countries and number of laboratories and hospitals in 2006




The EARSS network is still growing, at the moment (February 2006), in total 33 countries, around 900 laboratories and 1800 hospitals collaborate within the EARSS initiative. The number of laboratories and hospitals that will join the network in Bosnia and Lithuania is not known yet, as these countries are still in their start up phase.

## 7. Personal matters

### Advisory Board

We thank Dr. Michael Borg (St. Luke's Hospital, G'Mangia, Malta) and Prof. Wolfgang Witte (Robert Koch Institute, Berlin, Germany) for their contributions to the EARSS Advisory Board in the past few years. Dr. Pavla Urbaskova (National Institute of Public Health, Prague, Czech Republic), due to personal reasons, is not able to attend Advisory Board meetings and will therefore step down as well.
We would like to welcome Prof. Vincent Jarlier (Groupe Hospitalier Pité-Salpétrière, Paris, France), Prof. Alkiviadis Vatopoulos (National School of Public Health, Athens, Greece) and Dr. Arta Balode (Paula Stradina Clinical University Hospital, Riga, Latvia) as new members of the Advisory Board.

### National representatives

We would like to welcome the EARSS National Representatives that joined in the past year, and thank all those that stepped down for their contributions in the past few years. In France, Bruno Coignard has succeeded Hélène Aubry-Damon and will now fulfill this position together with Vincent Jarlier. Michael Coyne has taken over Stephanie Dancer's position as National Representative in Scotland. In Slovenia the National Representative Marija Gubina has been succeeded by Manica Mueller-Premru. The National Representative in Turkey, our new EARSS member, is Deniz Gür.

### Data managers

Louise Bishop from the Health Protection Agency who for the past year has been the UK data manager is now succeeded by Pauline Kaye who joined the Colindale team last year.

### WHO representative

After the retirement of Philip Jenkins, Kathleen Holloway will now fulfill the role of our contact point at WHO Head Quarters, Geneva.

## 8. EARSS-MT publications 2005-2006

### Scientific papers

Grundmann H, Aires de Souza M, Boyce JM, Tiemersma EW. Emergence and resurgence of Staphylococcus aureus as a public health threat. The Lancet 2005, in press

Foster KR, Grundmann H. Do We Need to Put Society First? The Potential for Tragedy in Antimicrobial Resistance. PLoS Med 2006, 3: e29

Grundmann H, Hellriegel B. Mathematical modelling: a tool for hospital infection control. The Lancet Infect Dis 2006, 6: 39-45

Grundmann H, Bärwolff S, Tami A, Schwab F, Behnke M, Geffers C, Halle E, Göbel UB, Schiller R, Jonas D, Klare I, Weist K, Witte W, Beck-Beilecke K, Schumacher M, Rüden H, Gastmeier P How many infections are caused by patient-to-patient transmission in intensive care units? Crit Care Med 2005, 33: 946-951

Willems RJL, Top J, van Santen M, Robinson DA, Coque TM, Baquero F, Grundmann H, Bonten MJM. Global spread of vancomycin-resistant Enterococcus faecium from distinct nosocomial genetic complex. Emerg Infect Dis 2005, 11: 821–828

Robinson DA, Kearns AM, Holmes A, Morrison D, Grundmann H, Edwards G, O'Brien FG, Tenover FC, McDougal LK, Monk AB, Enright MC. Re-emergence of early pandemic Staphylococcus aureus as a community-acquired methicillin-resistant clone. The Lancet 2005, 365: 1256-1258

Grundmann H, Bootsma M. Predicting the success of preventive measures in infection control using mathematical models. Ned Tijdschr Med Microbiol 2005, 13: 14-16

Grundmann H, Goossens H Progress towards meeting the challenges in clinical microbiology and infectious diseases: Report of working group 1: public health challenges. Clin Microbiol Infect 2005, 11 Suppl 1:36-40

Tiemersma EW, Monnet DL, Bruinsma N, Skov R, Monen JCM, Grundmann H and EARSS participants. Staphylococcus aureus bacteremia, Europe (letter). Emerg Infect Dis 2005, 11: 1798-1799

### Reports

EARSS management team. EARSS annual report 2004. On-going surveillance of *S. pneumoniae*, *S. aureus*, *E. coli*, *E. faecium*, *E. faecalis*. Bilthoven, the Netherlands, RIVM, 2005. ISBN 90-6960-131-1.

## 9. EARSS agenda 2006

| | |
|---|---|
| **16th ECCMID, Nice, France** | **1-4 April** |
| **Data managers and data mining workshop, RIVM, Bilthoven** | **1-3 June** |
| **ARMed meeting: Euromed conference on antibiotic resistance in the Mediterranean region, Malta** | **10-12 November** |

## 10. Participating countries, country codes and national representatives in EARSS

**Austria (AT)**
Helmut Mittermayer
Walter Koller

**Belgium (BE)**
Herman Goossens
Erik Hendrickx

**Bulgaria (BG)**
Barbora Mackova

**Croatia (HR)**
Smilja Kalenic
Arjana Tambic - Andrasevic

**Cyprus (CY)**
Despo Bagatzouni

**Czech Rep. (CZ)**
Pavla Urbaskova

**Denmark (DK)**
Dominique Monnet
Robert Skov

**Estonia (EE)**
Paul Naaber

**Finland (FI)**
Outi Lyytikäinen
Antti Nissinen

**France (FR)**
Bruno Coignard
Vincent Jarlier

**Germany (DE)**
Wolfgang Witte
Kirsten Heckenbach

**Greece (GR)**
Athanasios Tsakris
Alkiviadis Vatopoulos

**Hungary (HU)**
Miklos Füzi

**Iceland (IS)**
Karl Kristinsson

**Ireland (IE)**
Derval Igoe
Olive Murphy

**Israel (IL)**
Raul Raz

**Italy (IT)**
Annalisa Pantosti
Paolo D 'Ancona

**Latvia (LV)**
Arta Balode

**Lithuania (LT)**
Jolanta Miciuleviciene

**Luxembourg (LU)**
Robert Hemmer

**Malta (MT)**
Michael Borg

**Netherlands (NL)**
Edine Tiemersma
Han de Neeling

**Norway (NO)**
Arne Hoiby
Gunnar Simonsen

**Poland (PL)**
Waleria Hryniewicz

**Portugal (PT)**
Manuela Caniça

**Romania (RO)**
Irina Codita

**Slovakia (SK)**
Leon Langsadl

**Slovenia (SI)**
Manica Mueller-Premru
Jana Kolman

**Spain (ES)**
Fernando Baquero
José Campos

**Sweden (SE)**
Barbro Liljequist

**Turkey (TR)**
Deniz Gür

**United Kingdom (UK)**
Alan Johnson, Robert Hill (England & Wales)
Helen Hughes (Northern Ireland)
Michael Coyne (Scotland)

*Other parties represented by:*

| ESCMID | ESGARS | EUCAST | WHO | WHONET | UK-NEQAS |
|---|---|---|---|---|---|
| Guiseppe Cornaglia | Fernando Baquero | Gunnar Kahlmeter | Kathleen Holloway | John Stelling | Christine Walton |