Tasks and Possible Benefits of a Closer Liaison Between CMs and IDs Specialists: Sharing Responsibilities.

- Starting ID Day from the CM Lab!
- Prompt Diagnosis [CM]
- Resistance Surveillance [CM]
- Protection from Antimicrobial Resistance [CM+ID]
- Reduction of Antimicrobial Resistance [CM+ID]
- Antibiotic Policies [ID+CM]
- Appropriateness of Antimicrobial therapy [ID]
- Application of PK/PD [ID]
- Surgical Prophylaxis [ID]
- Hospital Epidemiology [CM+ID]
- Hospital Infection Control [CM+ID]
- Written guidelines for diagnosis and therapy of Infections Diseases [ID+CM]
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ESCMID News
Newsletter of the European Society of Clinical Microbiology and Infectious Diseases

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This issue of ESCMID News is strongly devoted to Professional Affairs. The past year has seen ESCMID dramatically increase its involvement in this area of activity. The two of us have greatly enjoyed this partnership spurred on by the more than gentle prodding of the President, Giuseppe Cornaglia.

One year ago we were pleased to co-chair the first meeting of the ESCMID Professional Affairs Subcommittee (for members see page 16), a multinational group of infectious disease physicians and clinical microbiologists which also includes the chairmen of the UEMS Section for Infectious Diseases (Mike McKendrick, UK) and the recently approved UEMS Section for Medical Microbiology (John Degener, NL). From the first meeting of this group sprang the ideas that developed into the ESCMID Collaborative Centres and the ESCMID Observerships (described in detail on page 24). It is our hope that many infectious disease units and clinical microbiology laboratories as well as centres of research will put themselves forward as ESCMID Collaborating Centres. In this way the Observerships should get off to a flying start in the New Year.

The creation and updating of an accurate almanac of the profile of Infectious Diseases and Clinical Microbiology is an important goal for ESCMID. We are pleased to announce that the survey of the profile of professional activity, accreditation and training in ID and CM in European nations is now completed. Many thanks go to the Professional Affairs Subcommittee for their help in its design and testing. The survey will greatly aid professional mobility and exchange throughout Europe and help ESCMID lobby our political masters on behalf of all the membership. More detailed information about this initiative can be found on page 20.

Clinical practice guidelines are an important contribution of any large clinical society such as ours, and over the past 2 years we have accelerated our involvement in this area with investment in several major initiatives (see Table). Again, the Professional Affairs Subcommittee has provided valuable advice to us, resulting directly in the recent commissioning of European guidelines on sore throat.

Finally, ESCMID hosted an important Professional Affairs Workshop in Rome from 9–10 October. A large number of presentations on the theme “Working together over borders” (national borders, borders between specialties, professions, organizations, etc.) were given and discussed by the 140 delegates from all over Europe, including many trainees in both disciplines. Discussion was lively and wide ranging (see details by Winfried Kern on page 15). Proceedings of this meeting will be published in Clinical Microbiology and Infection in 2009, and we certainly are looking forward to the next PA Workshop.

Medical guideline developments

- Guidelines on the diagnosis and management of Clostridium difficile-associated disease (ESCMID guidelines, ongoing, led by Ed Kuijpers, Leiden, NL)
- Lower Respiratory Tract Infection (ongoing, in cooperation with ERS)
- Endocarditis (ongoing, in cooperation with ECS)
- Catheter-related Urinary Tract Infection (ongoing, in cooperation with IDSA)
- Urinary Tract Infection (ongoing, in cooperation with IDSA)
- Sore throat, led by Pentti Huovinen
Dear ESCMID member,

For some of our colleagues in the Executive Committee, their terms will expire in May 2009. Ragnar Norrby will retire from his function as Past President, while Gunnar Kahlmeter’s and Robert Read’s 1st terms as Professional Affairs Officers end, but they are running for re-election.

For the term starting next May, we have three openings in the Committee: one in Clinical Microbiology and two in Infectious Diseases. We are pleased to report that seven excellent candidates have been nominated in the respective fields:

**Clinical Microbiology**
- Barry Cookson
- Gunnar Kahlmeter
- Johan Mouton

**Infectious Diseases**
- Pierre Dellamonica
- Matthew Falagas
- Winfried Kern
- Robert Read

The election platform is now open to all members in good standing (1 full year of paid membership). Please use this opportunity to cast your vote for your colleagues, so we can ensure that your specialty is well represented for the next term of 4 years.

Please go to www.escmid.org/election, log on with your member ID and password and cast your vote by 22 December.

Best regards,

Javier Garau, President-elect and Secretary General

---

**ESCMID Web Relaunch in November 2008**

One and a half years ago we gave the ESCMID website a new “look” to match the new ESCMID corporate design and logo. This was announced as a transitional stage that now leads to a relaunch with major aesthetic and functional improvements. The new website has a better structure, is easier to navigate through and has additional features. Below are a few explanations of how it will better meet your needs.

**Information**
We want you to find what you are looking for more quickly. The new website features shorter more concise texts, which are more conducive to screen reading. Images and icons help you rapidly identify types of information, such as whether you can download a file or are transferred to another page. In addition, from a specific page other documents of possible interest are displayed in the right column for you to quickly access.

**Navigation**
Navigation is now easier. Quick links to frequently visited pages are available from every page.

Searching is improved, especially in the *Dates & Events* section. Here you can generate lists of events with specific search criteria.

**Society**
For administering the Society there are “behind the scenes” features that will enable us to better serve members and users, especially in the areas of *Membership* and *Grants & Fellowships, Awards*.

**Additional services**
New on the web are features called Collaborative Centres and CM & ID Survey, more information about this can be found in the articles on pages 20 to 24. Our Training & Career Centre has also been improved to give more user flexibility. Over the coming months we will be adding more features to the website.

Giuseppe Cornaglia, ESCMID President
Dear ESCMID Members,

Some of you may have read in the ESCMID News or Online News that I am ESCMID’s new Managing Director. Peter Schoch, who has been instrumental in leading the Executive Office and our operations for 9 years, has handed me the helm. He will be starting other business pursuits. I thank him for his valuable contributions to the Society and for the smooth transition. We all wish him the best for his new endeavours.

It is a great honour for me to serve this prestigious organization. Having been employed in the medical field in both private and non-profit sectors for the last 13 years is very advantageous to my rapid integration. Yet, the fields of Microbiology and Infectious Diseases are certainly also unique. I am highly motivated and curious to learn more about your specialties and to discover as many facets as possible.

We are pleased to present the various programmes and activities that have been organized since our last communication to the membership.

General and Managerial Issues

Executive Committee: By the time you receive this issue, the electronic election platform will have been opened. We kindly ask you to take a close look at the nominated candidates and to cast your vote to appropriately represent your specialty in the Executive Committee. Do not forget the candidates from other specialties. Please use this opportunity to take advantage of your membership rights.

Programme 2009: The planning for 2009 has been initiated a while ago, more details have been worked out recently in the budgeting process. On a more operational level, we are working with the local organizers of the respective Postgraduate Education Courses and Workshops. Preparations for the 19th ECCMID in Helsinki in May 2009 are on schedule. You will appreciate an exceptional programme!

Membership: While our membership base has grown over the years, we are still working on attracting new colleagues and most importantly, retaining them over the years. Our offerings will increase, and we will keep you updated on new membership benefits.

Website: Our newly designed website is now up and running. A more attractive and user-friendly “look & feel” will take you where you want to go.

Professional Affairs

For an overview of activities in Professional Affairs, please see the editorial to this issue.

Scientific Affairs

In October, a joint conference between ESCMID and FEMS was held in Villars-sur-Ollon on Clostridia. Numerous participants enjoyed excellent presentations and the “Villars series” again proved to be successful.

Education

Once most of Europe returned from summer holidays, our educational offerings encompassed a number of highly interesting events: The 7th ESCMID Summer School was organized in Regensburg, Germany, in the United Kingdom the 3rd GRACE Workshop took place in Cambridge, and we were able to set up the 5th GRACE Postgraduate Course in Berlin. Interactive events allowed for good discussion between faculty and participants, who were able to benefit from numerous take home messages that can be implemented in clinic and laboratory daily practice.

As you may have noticed, ESCMID offers a wide array of programmes, most of them to the non-member specialist, but many exclusively to the benefit of our members. Our committee members and staff at the Executive Office are eager to provide you with the best programmes and services, leading to an improvement of patient care, laboratory procedures and prevention. We are an organization for our members that also needs its members to contribute as organizers, speakers, moderators or participants in all our offerings. Together we can advance our Society. My team and I are looking forward to our collaboration in the spirit of advancing ESCMID and all its affiliated specialists.

Yours truly,

Peter A. Cologna
ESCMID Managing Director
Stepping into the role of fourth Editor-in-chief of *CMI*, I look forward to the challenge of assuming responsibility for the journal at this point where it has an established place among specialty journals in the field. Challenge greatly interests me, and my objective is to help the journal continue in the direction established by the three preceding editors-in-chief.

My own idea of a good journal is one that I would be pleased to publish in. Beyond that, I believe creating a good journal consists of recruiting the best papers from our field, including reviews from eminent specialists. These reviews will be the basis of thematic monthly issues, each of which will be coordinated by a guest editor.

Authors may look forward to online publication upon acceptance and colour figures online without charge, as well as fast-track publication of preliminary results or results that warrant immediate diffusion.

We look forward to receiving your submissions.

---

**Supplements Editor**

Every new editor must try different things. Readers are familiar with sponsored Supplements, usually representing the proceedings of symposia, and with Supplements featuring recent guidelines and recommendations from ESCMID Study Groups and the ECDC. These will continue.

New plans for Supplements will emphasize topics of epidemiologic and clinical relevance in the fields of microbiology and infectious diseases, either as Supplements themselves or as articles embedded within Supplements. Focusing on practicality and skills, we would like to make each one relevant in some way to every reader.

And we would like to hear from you, to know what you are interested in reading about and what you may wish to sponsor. Please contact the editorial office with your suggestion of a topic or your proposal of sponsorship [cmi@escmid.org].

We look forward to hearing from you.

---

**Editor-in-Chief**

Didier Raoult,
Marseille, France

George Schmid,
Geneva, Switzerland
Announcements Concerning *CMI*

Judith Crane, *CMI* Managing Editor

**Length restrictions for submissions**

In order to publish more original research papers, the word limit for articles has been significantly reduced to:

- 2'500 words for original articles
- 1'000 words for research notes.

**Colour figures online**

As of January 2009, all figures that have been submitted in colour will be published in black/white in hard copy but online in colour, without charge to the author, and will be available for download without charge to subscribers.

Authors: please include high resolution colour figures, as appropriate, at the time of submission.

Subscribers: please be aware that all figures published in *CMI* are available for downloading, without charge, for use in academic lectures or presentations.

**Monthly theme sections**

The January 2009 issue of *CMI* will be the first to include a section devoted to a particular theme. The remaining content of the issue will comprise original research as submitted, not necessarily related to the theme.

**January**

**The medical importance of chalmydiae**

Guest Editor: Gilbert Greub

**February**

**Consensus concerning MRSA**

Guest Editor: Javier Garau

**March**

**Emerging borrelioses**

Guest Editor: Sally Jane Cutler

**April**

**Infections due to MDR Gram-positives**

Guest Editor: Giuseppe Cornaglia

**May**

**Treatment for sepsis other than antibiotics**

Guest Editor: Mical Paul

**June**

**Is Europe prepared for highly infectious diseases?**

Guest Editor: Philippe Brouqui

**July**

**Diagnosis and monitoring of fungal infections**

Guest Editor: Maiken Cavling Arundrup

**August**

**Emerging virus diseases and climate change**

Guest Editor: Ernest Gould

**September**

**Frontiers in Helicobacter pylori research**

Guest Editor: Francis Megraud

**October**

**Infectious causes of cancer**

Guest Editor: Georgios Pappas

**November**

**Emerging non-tuberculous mycobacteria**

Guest Editor: Michel Drancourt

**December**

**Hard to swallow emerging and re-emerging issues in food-borne infection**

Guest Editor: Panayotis Tassios
ESCMID and FEMS offer a joint award to foster outstanding research in microbiology by young European scientists. Every year each organization selects one individual among their recipients of research fellowships to receive an additional amount of EUR 1'000 from the other organization. We are delighted to announce that the fifth combined FEMS/ESCMID fellow is Filip Ruzicka, Brno, Czech Republic and the ESCMID/FEMS fellow is Frank Breinig, Saarbrücken, Germany.

**FEMS / ESCMID Research Fellow 2008**

Filip Ruzicka, Department of Microbiology, Faculty of Medicine, Masaryk University, Brno, Czech Republic

Research project: Influence of culture conditions on biofilm formation of bloodstream *Candida* isolates

**ESCMID / FEMS Research Fellow 2008**

Frank Breinig, Department of Applied Molecular Biology, Saarland University, Saarbrücken, Germany

Research project: Recombinant yeast as novel mucosal live vaccine
## ESCMID Scholarships 2008

The individuals listed below were awarded an ESCMID attendance grant in 2008 for one of the below events:

<table>
<thead>
<tr>
<th>18th ECCMID (travel grants and/or free registration)</th>
<th>Karageorgopoulos, Drosos (Athens, Greece)</th>
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</thead>
<tbody>
<tr>
<td>Agarwal, Vishnu (Roorkee, Uttarakhand, India)</td>
<td>Karahan, Z. Ceren (Ankara, Turkey)</td>
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<td>Aguiar, Sandra (Lisbon, Portugal)</td>
<td>Khianna, Priya (London, UK)</td>
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<td>Al Hamad, Arif (Manchester, UK)</td>
<td>Kim, Dong-Min (Gwang-Ju, Korea)</td>
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<td>Al Naïem, Nashwan (Amsterdam, The Netherlands)</td>
<td>Krizova, Lenka (Prague, Czech Republic)</td>
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<td>Al-Akeel, Raid (Manchester, UK)</td>
<td>Kronenberg, Andreas (Berne, Switzerland)</td>
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<td>Alexiou, Evangelos G. (Athens, Greece)</td>
<td>Lang, Kevin (St. Paul, MN, USA)</td>
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<td>Almeida, Filipe (Oeiras, Portugal)</td>
<td>Laverde, Jenny A. (Werningerode, Germany)</td>
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<td>Antikainen, Jenni (Helsinki, Finland)</td>
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<td>Antunes, Patricia (Porto, Portugal)</td>
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<td>Arends, Joop E. (Utrecht, The Netherlands)</td>
<td>Machado, Elisabete (Porto, Portugal)</td>
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<td>Borisov, Vitaly (Moscow, Russia)</td>
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<td>Cateau, Estelle (Poitiers, France)</td>
<td>Martins, Marta Sofia (Lisbon, Portugal)</td>
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<td>Chang, Li-Yen (Selangor, Malaysia)</td>
<td>Matrat, Stéphanie (Paris, France)</td>
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<td>Cullen, Mairi (Manchester, UK)</td>
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<td>Dahl Christensen, Louise (Lyngby, Denmark)</td>
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<td>Damborg, Peter Panduro (Copenhagen, Denmark)</td>
<td>Mohajerani, Nazanin (Tehran, Iran)</td>
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<td>D’Andrea, Marco Maria (Siena, Italy)</td>
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<td>de Regt, Marieke (Utrecht, The Netherlands)</td>
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<td>Doi, Yohei (Pittsburgh, PA, USA)</td>
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<td>Rodrigues Pinto, Francisco (Lisbon, Portugal)</td>
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<td>Hancock, Viktoria (Lyngby, Denmark)</td>
<td>Rodríguez Dominguez, Mario José (Madrid, Spain)</td>
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<td>Heidi Kens, Esther (Utrecht, The Netherlands)</td>
<td>Rodríguez-Morales, Alfonso J. (Caracas, Venezuela)</td>
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<td>Howard, Julia (London, UK)</td>
<td>Siézn Domínguez, María Yolanda (Logrono, Spain)</td>
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<td>Huis, Charles (Ottawa, ON, Canada)</td>
<td>Salah, Mehvish (Bangalore, India)</td>
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<td>Ivanov, Ivan N. (Sofia, Bulgaria)</td>
<td>Schäible, Bettina (Dublin, Ireland)</td>
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<td>Jones, Gwennan (Telford, UK)</td>
<td>Shaikh, Farha (Leicester, UK)</td>
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Sleator, Roy (Cork, Ireland)
Smeesters, Pierre (Gosselies, Belgium)
Soeltan-Kaersenhout, Debby (Amsterdam, The Netherlands)
Steininger, Christoph (Vienna, Austria)
Stoeva, Temenuga (Varna, Bulgaria)
Tam, Vincent H. (Houston, TX, USA)
Tato Diez, Marta (Madrid, Spain)
ter Waarbeek, Henriëtte (Geleen, The Netherlands)
Theocharidou, Dionysia (Thessaloniki, Greece)
Türetgen, Irfan (Istanbul, Turkey)
Van Gennip, Maria (Lyngby, Denmark)
van Mansfeld, Rosa (Utrecht, The Netherlands)
Vryonis, Evangelos (Athens, Greece)
Wagner, Karen (London, UK)
Wassenberg, Marjan (Utrecht, The Netherlands)
Wellinghausen, Nele (Ulm, Germany)
Wittwer, Matthias (Berne, Switzerland)
Yang, Jennifer (London, UK)
Yılmaz, Mesut (Ankara, Turkey)
Zinyowera, Sekesai (Harare, Zimbabwe)
Zong, Zhiyong (Westmead, Australia)

Blanco, Juan Pablo (Distrito Federal, Mexico)
Blaser, Cornelia (Berne, Switzerland)
Bottai, Daria (Pisa, Italy)
Braoudaki, Maria (Athens, Greece)
Brugnaro, Pierluigi (Mestre, Italy)
Bubonja, Marina (Rijeka, Croatia)
Cabello, Angela (Chile)
Calbo, Esther (Terrassa, Spain)
Campo Esquisabel, Ana Belen (Santander, Spain)
Cannly, Geraldine (Lausanne, Switzerland)
Cano, Maria (Santander, Spain)
Carnalla, Ma. Noemi (Cuernavaca, Mexico)
Carriço, Joao (Lisbon, Portugal)
Carter, Melissa (Leicester, UK)
Castellanos, Ma. Del Carmen (Distrito Federal, Mexico)
Castro, Natividad (Chilpancingo, Mexico)
Chai, Louis (Singapore, Singapore)
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Cirkovic, Ivana (Belgrade, Serbia)
Conceição, Teresa (Oeiras, Portugal)
Cordova, Ma. Guadalupe (Distrito Federal, Mexico)
Cortéz, Dzoara Aracne (Distrito Federal, Mexico)
Cortoos, Pieter-Jan (Leuven, Belgium)
Cruz, Edgar (Distrito Federal, Mexico)
Cuny, Christiane (Wernigerode, Germany)
Daurel, Claire (Caen, France)
De Aquino, Areli (Puebla, Mexico)
de la Cabada, Javier (Guadalajara, Mexico)
Dias Alves, Anna Sofia (Evora, Portugal)
Diliz, Veronica (San Luis Potosi, Mexico)
Dobay, Orsolya (Budapest, Hungary)
Echenique Rivera, Hebert (Argentina)
Eklund, Asa (Uppsala, Sweden)
Engelmann, Ilka (Hannover, Germany)
Escalona, Gerardo (Tecamach, Mexico)
Espinoza, Ma. Del Rosario (Distrito Federal, Mexico)
Fadare, Joseph Olusesan (Kano, Nigeria)
Fadec-Shohada, Mina (Leicester, UK)
Farfán, René (Distrito Federal, Mexico)
Fazio, Cecilia (Rome, Italy)
Fernandes, Isabelle (Nice, France)
Fernandes, Victor (Leicester, UK)
Fernández, Mónica (Distrito Federal, Mexico)
Flores, Angélica (Distrito Federal, Mexico)
Flores-Ramíres, Gabriela (Bratislava, Slovakia)
Garza, Ulises (Cuernavaca, Mexico)
Genova, Petia (Sofia, Bulgaria)
Giono, Silvia (Distrito Federal, Mexico)
Glenn, Sarah (Leicester, UK)
Golkocheva-Markova, Eliza (Sofia, Bulgaria)
Gomes Faria, Nuno Alexandre (Oeiras, Portugal)
Opinion Poll Raffle

From the ESCMID Executive Office

As a thank you to the ECCMID participants who took the time to fill out the opinion poll, we had a drawing for five MP3 players. The lucky winners were:

– Shaila Choi (Welwyn, UK)
– Ana Freitas (Maia, Portugal)
– Beata Kasztelewicz (Warsaw, Poland)
– Natalie Mitchell (Attikis, Greece)
– Dianelys Quiñones Pérez (Ciudad de La Habana, Cuba)

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Please complete also the reverse side of this form.
Please indicate your professional background (multiple entries possible)

**Academic degree(s)**
- MD
- PhD
- other: __________________________

**Specialties in clinical medicine**
- m clinical microbiology
- i infectious diseases
- Z dentistry
- G gastroenterology/hepatology
- H haematology
- j internal medicine
- k paediatrics
- p pathology
- q pneumology
- s surgical specialties
- J general practice/primary care medicine
- l intensive care medicine
- G other: __________________________

**Non-clinical disciplines**
- B biomedical sciences (including biochemistry, biology, genetics, microbiology, etc.)
- L chemistry
- U marketing and business administration
- X mathematics
- U medical care (including infection control nurses)
- h pharmacology
- d pharmacy
- W public health medicine
- t veterinary medicine
- G other: __________________________

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- f Fungal Infection Study Group (EFISG)
- w Food- and Water-borne Infections Study Group (EFWISG)
- i European *Helicobacter* Study Group (EHSG)
- h Meningitis Study Group (EMESG)
- d Study Group for *Coxiella, Anaplasma, Rickettsia and Bartonella* (ESCAR)
- q Study Group for Antibiotic Policies (ESGAP)
- n Study Group for Antimicrobial Resistance in Anaerobic Bacteria (ESGARAB)
- r Study Group for Antimicrobial Resistance Surveillance (ESGARS)
- g Study Group for Biofilms (ESGB)
- c Study Group for *Clostridium difficile* (ESGCD)
- e Study Group for Epidemiological Markers (ESGEM)
- m Study Group for Molecular Diagnostics (ESGMD)
- J Study Group for Nosocomial Infections (ESGNI)
- t Study Group for Clinical Parasitology (ESGCP)
- v Study Group for Viral Hepatitis (ESGVH)
- p Study Group for Primary Care Topics (ESPRIT)

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The ESCMID Professional Affairs Workshop

Winfried V Kern, Head, Division of Infectious Diseases, University Hospital, Freiburg, Germany, kern@if-freiburg.de

One hundred forty professionals met in Rome this fall to review the status of the specialities, Clinical Microbiology and Infectious Diseases, across Europe and to discuss initiatives to improve the organizational basis for medical practice in our disciplines. A photo gallery of the third ESCMID Professional Affairs Workshop held at the ISS – Istituto Superiore di Sanità can be found on pages 17 to 19. Over six sessions, specialists in both fields from countries throughout Europe discussed facts and ideas concerning professional development and cooperation. Giuseppe Cornaglia, Gunnar Kahlmeter and Robert Read – in close consultation with the ESCMID Professional Affairs Subcommittee (see list on next page) – invited participants to the workshop, which started with presentations by John Degener and Mike McKendrick, the current presidents of the UEMS Sections of Medical Microbiology and of Infectious Diseases, respectively.

In discussing the medical microbiology family tree John Degener reviewed the development of the discipline within the UEMS from being a sub-section in the so-called Medical Biopathology Section in earlier times to the full recognition of the discipline in UEMS and to establishing an independent Section of Medical Microbiology in April 2008 (see article on page 25). He reminded us that according to UEMS, the medical microbiologist should cover infection control and antibiotic policy among many other areas, which are also covered by infectious disease physicians and offer excellent perspectives for cooperation. Mike McKendrick also reviewed the more recent history of the specialty of Infectious Diseases within Europe. The UEMS Section of Infectious Diseases was established in 1997 but until today there remain a few countries in Europe that do not recognize Infectious Diseases as a specialty or subspecialty. Mike McKendrick reminded the audience that 150 years ago general medicine was dealing primarily with infections such as diphtheria, smallpox, polio, scarlet fever, tuberculosis, measles, whooping cough, chickenpox and pneumococcal pneumonia to mention only some. With the advent of vaccines and antibiotics this scenario has changed fundamentally, and the clinical problems to be solved nowadays are much more complex. Although new skills are required and subspecialisations have evolved by necessity, key competencies and skills of today’s infectious disease specialist remain general medicine, clinical diagnosis, guidance and advice for clinical colleagues based on clinical competency and on a strong epidemiological understanding of diagnosis and management. The challenge remains at the bedside.

Working with others was the title of the second session in which Jos van der Meer, Niels Frimodt-Møller and Marc Struelens presented their views not only on professional cooperation of microbiologists and infectious diseases physicians, but also on cooperation between the infection specialists...
Professional Affairs
Subcommittee members

Infectious Diseases
Robert Read, Sheffield, UK, Chairperson Matthew Falagas, Athens, Greece Alkiviadis Vatopoulos, Athens, Greece Arjana Tambic, Zagreb, Croatia Gian Maria Rossolini, Siena, Italy Arne Rodloff, Leipzig, Germany Mario Poljak, Ljubljana, Slovenia Warsaw, Poland Waleria Hryniewicz, Warsaw, Poland Niels Frimodt-Möller, Groningen, The Netherlands John Edward Degener, Arta Olga Balode, Riga, Latvia Gunnar Kahlmeter, Vaxjo, Sweden Jos WM van der Meer, Nijmegen, The Netherlands

Clinical Microbiology
Emmanuelle Cambau, Grenoble, France John Edward Degener, Groningen, The Netherlands Matthew Falagas, Athens, Greece Alkiviadis Vatopoulos, Athens, Greece

aspects of improved clinical microbiology and infectious disease services. Arjana Tambic very clearly reminded us that the limits of this is the GAS rapid test. As there appears to be a revolution happening in laboratory diagnosis of infection, there is an increasing demand of indiscriminate ordering of new, commercial, expensive tests for simple clinical situations. We must recognize an increasing need to involve infectious disease specialists in the thorough evaluation of new – complex and simple – diagnostic tests – an area very attractive for successful cooperation between microbiologists and infectious disease physicians as Jos van der Meer pointed out.

An attractive model for successful cooperation among the different infection specialists may be a system in which the medical microbiologist runs the diagnostic laboratory, but is, in addition, involved in providing bedside advice and in which he or she interacts with the infectious disease specialist, the infection control service and hospital pharmacists. Together these specialists would create what L Tompkins earlier had called “the infectious disease service line”, a service very much appreciated by clinicians of various disciplines but also the hospital administration due to its comprehensiveness and professionalism. The formidable challenges of infectious diseases call for optimal synergy between ID physicians and clinical microbiologists. New tasks for clinical pharmacists in such a service would be better control of costs of medication, improvement of guideline adherence, reduction in medication related errors and morbidity, and increasing patient safety as Niels Frimodt-Möller suggested. This could increase the workforce for the performance of audits on the prudent use of antimicrobials and their impact.

Current and future models for the organization of anti-infective management teams was the topic of Marc Struelem’s presentation. He reviewed the experience with such teams in Belgium and pointed out the necessity of funding to be successful. He stressed the need for valid and feasible measures and quality indicators of rational use of anti-infective medicines. Based on recent experience in cooperative multiprofessional project groups there has been progress in the design and validation of indicators usable by hospital infection teams to identify quality gaps and to estimate quality improvement.

The subsequent workshop sessions provided insight into practical aspects of improved clinical microbiology and infectious disease services. Arjana Tambic very clearly reminded us that the limited resources of the future clinical microbiology laboratory should be constantly refocused and adapted to the needs by applying more rigid specimen rejection criteria but ascertainning at the same time better service availability, communication and interpretation of laboratory results. Rapid testing and automation in clinical microbiology: Where are we today? was asked by Mario Poljak. He saw a dual development: On one side, there will be the future microbiology laboratory service with focused, in-depth analysis of samples including confirmatory testing, modern, automated and multiplex technology, and consultation. On the other side, there will be an increasing demand of point-of-care rapid and simple testing allowing management decisions at bedside. Automation will lead to fewer personnel in the laboratory, miniaturization will foster the development of point-of-care tests with “syndromic approaches” to multiple pathogen detection. Ingrid Nilsson-Ehle and Vincent Jarlier made in their presentations clear that currently most so-called rapid bedside tests have major limitations and may be of no additional value over other tests if not applied in carefully defined clinical-epidemiologic settings. Whilst attractive in terms of the potential to reduce unnecessary antibiotic prescribing and costs, these tests are often not reimbursed and/or not approved. The best example of this is the GAS rapid test.

How can we speed up the slow workflow in clinical microbiology? Emmanuelle Cambau provided a few key answers to this question: adequate automation and new microbial detection tools, better availability of the service with 24 hours a day and 7 days a week involvement, and more commitment of technicians and other laboratory personnel – a proposal in part similar to that made by Arjana Tambic. Isabelle Durand-Zaleski – based on currently available health economic studies – was not convinced that automation and rapid testing has been proven to be cost-effective. In particular, she presented some data indicating that point-of-care testing might be more expensive than conventional laboratory testing because of high reagent and quality assurance costs.

Winfried Kern reviewed the niches and skills of infectious disease physicians. He felt that there is more of a need to reoccupy lost or “neglected” niches than to find new ones. For example, chronic viral hepatitis care often is integrated into gastroenterology rather than into infectious disease services. Similarly, patients with tuberculosis are in many regions cared for by pulmonary medicine specialists although tuberculosis is one of the “big three” and one of the “very” infectious diseases needing professional and comprehensive management whatever organ involvement might individually prevail. Other examples were travel medicine, “sepsis” medicine, prevention of healthcare-associated infections and infections in the immuno-compromised patient. He emphasized the need to improve skills and competencies in the effective quality management of clinical infectious diseases activities. He also asked the infection specialist workforce to take responsibility for international health aspects as there are continuously infectious disease emergencies not to say catastrophes in parts of the world that need our skills and attention. Questions regarding subspecialization in Infectious Diseases and Clinical Microbiology were then followed up in the session, Organizing our-
Roberto Cauda made the case for subspecialization in HIV medicine but this point was somewhat controversial, and generated much discussion. Hilary Humphreys and Gijs Ruijs made the case for an integrated clinical microbiology service, *Many bugs, one house*, and discussed important pros and cons of off-site high-throughput laboratories and of highly specialized microbiology laboratories.

Helen Giamarellou and Fernando Baquero provided their views on practical cooperation between Microbiology and Infectious Diseases. When designing a matrix of responsibilities and activities of infectious diseases and clinical microbiology departments, one sees relatively easily common versus complementary tasks. Fernando Baquero put forward the model “Microbiology and Infectious Diseases as autonomous (but collaborative) Services” as the best way to achieve success in basic and translational research, to recruit young talented non-medical specialists in microbiology and to keep the balance between mutual autonomy and “phagocytosis”.

In the last session, *Getting ready for the future – increased effectiveness*, Javier Garau, Ragnar Norrby, Gijs Ruijs and Mario Poljak presented perspectives for our professional environment regarding emerging infections, limited availability of anti-infective medicines, multiprofessional working relationships and pan-European integration. It was considered a priority area to enhance networks for emerging infections including clinical alertness groups in order to get prepared for the coming epidemics but also for more effective research into the pathogenesis of severe, yet undefined inflammatory syndromes likely to represent unidentified infections. Openness to the new “species” of molecular microbiologists in the field of Clinical Microbiology and Infectious Diseases was considered necessary. We also need to be receptive to learning and progress brought about by cooperation between East and West and Clinical Microbiology and Infectious Diseases.
Survey of Clinical Microbiology and Infectious Diseases in Europe – ESCMID Opens Country-specific Websites

Robert Read, Professional Affairs Officer Infectious Diseases, r.c.read@sheffield.ac.uk
Gunnar Kahlmeter, Professional Affairs Officer Clinical Microbiology, gunnar.kahlmeter@ltkronoberg.se

To find out about the state of the two specialties Clinical Microbiology (CM) and Infectious Diseases (ID) in European countries, ESCMID has distributed questionnaires to affiliated societies in Europe on two occasions over the past 10 years. The results thus far have been published as reports in ESCMID News and on the website.

The 2008 questionnaire was conducted electronically. Each affiliated society had appointed two national editors, one for CM and one for ID to fill in the information. The questionnaire was developed in concert with UEMS (Union Européenne des Médecins Spécialistes) representa-

---

6. Specialties and subspecialties

6.1. Recognized full specialties

**Clinical Microbiology**
- official name [in local language] Clinical bakteriologi och virologi
- official name [in English] Clinical bacteriology and virology
- since when: official training [yrs*] from 2007
- minimum: 5
- * after entry into a specialist training programme

**Clinical Bacteriology**
- official name [in local language] Klinisk bakteriologi
- official name [in English] Clinical bacteriology
- since when: official training [yrs*] up to 2007
- * after entry into a specialist training programme

**Clinical Virology**
- official name [in local language] Klinisk virologi
- official name [in English] Clinical virology
- since when: official training [yrs*] up to 2007
- * after entry into a specialist training programme

6.2. Recognized subspecialties

---

5. Specialties and subspecialties

5.1. Recognized full specialties

**Infectious Diseases**
- official name [in local language] Infectieziekten
- official name [in English] Infectious Diseases
- since when: official training [yrs*] 1–6
- * after entry into a specialist training programme

**Genitourinary Medicine**
- official name [in local language] Genitourinär medicin
- official name [in English] Genitourinary Medicine
- since when: official training [yrs*] 1–5
- * after entry into a specialist training programme

5.2. Recognized subspecialties

5.3. Recognized subspecialties related to Infectious Diseases

No

5.4. Countries where infectious diseases is not a recognized specialty or an official subspecialty

---

Figure 2: Preview of Clinical Microbiology in Sweden

Figure 3: Preview of Infectious Diseases in the UK
<table>
<thead>
<tr>
<th>Wording</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Registered medical doctor</td>
<td>A registered medical doctor is a professional who has been trained at a medical school and has been registered to practice medicine.</td>
</tr>
<tr>
<td>Qualified physician</td>
<td>A qualified physician is a registered medical doctor who has undergone post-graduate physician training leading to accreditation as a clinically active specialist physician.</td>
</tr>
<tr>
<td>CM-RMD (background as registered medical doctor)</td>
<td>Clinical Microbiologist – a registered medical doctor who is specialized in a clinical (equals medical) speciality which may be named Clinical (or Medical) Microbiology, Clinical Bacteriology and Virology or Clinical Bacteriology or Clinical Virology. In most countries it is necessary to be a registered medical doctor and then undergo a training period of approximately 4-5 years to become a specialist in Clinical Microbiology (or the equivalent thereof).</td>
</tr>
<tr>
<td>CM-NRMD (with a different background than that of a registered medical doctor/non-registered medical doctor)</td>
<td>Clinical Microbiologist – a person with a different background (pharmaceutical sciences, molecular biology, others) than a registered medical doctor who is specialized in a clinical/medical speciality which may be named Clinical (or Medical) Microbiology, Biopathology, Laboratory Medicine, or Polyvalent Laboratory Medicine. Countries may differ in terms of the basic and postgraduate training that can lead to an individual being called a “Clinical (or Medical) Microbiologist” (or the equivalent thereof).</td>
</tr>
<tr>
<td>ID</td>
<td>Infectious Disease physician – a qualified physician who specializes (or in some countries subspecializes) in the care of patients with infections, either as the dedicated physician responsible directly for case management, or as physician providing consultation services.</td>
</tr>
<tr>
<td>Specialists</td>
<td>A specialist is someone who has achieved a qualification which allows him/her to be accredited to practice in a given medical speciality.</td>
</tr>
<tr>
<td>Full speciality</td>
<td>A full speciality is a field of expertise recognized after a period of post-graduate training and which is legally qualified and accredited nationally.</td>
</tr>
<tr>
<td>Recognized subspeciality</td>
<td>A subspeciality is a defined field of expertise within a full speciality but not recognized as a speciality in its own right.</td>
</tr>
<tr>
<td>Curriculum</td>
<td>The agreed contents of a training programme.</td>
</tr>
<tr>
<td>Polyvalent Laboratory Medicine</td>
<td>The speciality of Laboratory Medicine (also called: biologie medicale), is based on training in the different fields: chemistry, microbiology, immunology, pathology and haematology. Polyvalent Laboratory Medicine is in some countries a fully recognized speciality.</td>
</tr>
<tr>
<td>Medical Biopathology</td>
<td>Term used to comprise all monovalent and polyvalent laboratory based medical specialities.</td>
</tr>
<tr>
<td>CME</td>
<td>Continuing Medical Education – formalized educational experience recognized as contributing to continuing professional development of a specialist.</td>
</tr>
<tr>
<td>Inspection of training</td>
<td>Peer review of training quality at undergraduate or postgraduate level.</td>
</tr>
<tr>
<td>Recertification</td>
<td>Recertification is a process of affirmation of a specialist’s right to practice in their speciality.</td>
</tr>
<tr>
<td>Genitourinary Medicine</td>
<td>A full speciality or a subspeciality of Dermatology or Infectious Diseases or Obstetrics and Gynaecology, in which a qualified physician treats patients with sexually related diseases.</td>
</tr>
</tbody>
</table>

Figure 1 Glossary
tives and the ESCMID Professional Affairs Subcommittee, then tested by many colleagues from various countries. We also included a glossary to ensure that the meaning of used terms was unambiguous (see Figure 1, Glossary). In late summer 2008, the questionnaire was opened to 70 editors in 35 European countries via password-protected access.

The results of the ESCMID questionnaire are almost all in, and a web-based presentation will be available in December. Each country has its own webpages for both CM and ID. The webpages can be regularly updated obviating the need for future questionnaires. Specialists in their respective fields can address those in charge of the content of the websites – to suggest changes, updates and links to national societies. Each country takes responsibility for describing the two specialties and it is anticipated that ESCMID affiliated societies and UEMS representatives will collaborate to keep the pages updated (Figures 2 and 3).

Webpage functions allow ESCMID members to cross-tabulate most of the questions and answers of the questionnaire (Figure 4) and to export the data file in full to a format which can easily be imported into other programs. It is expected that the new tool will stimulate exchange over borders and the discussion and the development of the specialties in Europe. Until UEMS declared Medical Microbiology a specialty in 2008, microbiology was an integrated part of Medical Biopathology. The specialty is clearly moving forward!

### Results of ID questionnaire

<table>
<thead>
<tr>
<th>Country</th>
<th>Recognized full specialties:</th>
<th>Infectious Diseases</th>
<th>official name (in local language)</th>
<th>official name (in English)</th>
<th>since when</th>
<th>official training (yrs*)</th>
<th>Genitourinary Medicine</th>
<th>official name (in local language)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Austria</td>
<td>No</td>
<td>No</td>
<td>-/-</td>
<td>-/-</td>
<td>1948</td>
<td>4</td>
<td>Yes</td>
<td>-/-</td>
</tr>
<tr>
<td>Belgium</td>
<td>No</td>
<td>No</td>
<td>-/-</td>
<td>-/-</td>
<td>1956</td>
<td>4 year</td>
<td>No</td>
<td>-/-</td>
</tr>
<tr>
<td>Bulgaria</td>
<td>Yes</td>
<td>Yes</td>
<td>-/-</td>
<td>specialist in infectious diseases</td>
<td>1982</td>
<td>5</td>
<td>No</td>
<td>-/-</td>
</tr>
<tr>
<td>Croatia</td>
<td>Yes</td>
<td>Yes</td>
<td>-/-</td>
<td>infectious diseases specialization</td>
<td>1981</td>
<td>6</td>
<td>No</td>
<td>-/-</td>
</tr>
<tr>
<td>Cyprus</td>
<td>Yes</td>
<td>No</td>
<td>-/-</td>
<td>Infectious Diseases</td>
<td>1982</td>
<td>5</td>
<td>No</td>
<td>-/-</td>
</tr>
<tr>
<td>Czech Republic</td>
<td>Yes</td>
<td>Yes</td>
<td>-/-</td>
<td>Infectious Diseases</td>
<td>1982</td>
<td>5</td>
<td>No</td>
<td>-/-</td>
</tr>
<tr>
<td>Denmark</td>
<td>Yes</td>
<td>Yes</td>
<td>-/-</td>
<td>Intern medic: infektionsmedicin</td>
<td>1982</td>
<td>5</td>
<td>No</td>
<td>-/-</td>
</tr>
<tr>
<td>Finland</td>
<td>Yes</td>
<td>Yes</td>
<td>-/-</td>
<td>Infektiosairaudent</td>
<td>1982</td>
<td>5</td>
<td>No</td>
<td>-/-</td>
</tr>
</tbody>
</table>

Figure 4. Excerpt from country table with all countries selected (preliminary data)
<table>
<thead>
<tr>
<th>France</th>
<th>Germany</th>
<th>Greece</th>
<th>Hungary</th>
<th>Iceland</th>
<th>Ireland</th>
<th>Italy</th>
<th>Latvia</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Maladies Infectieuses et Tropicales</td>
<td>--/-</td>
<td>--/-</td>
<td>infektológos</td>
<td>Smitśjükō-malaekningar</td>
<td>Infectious Disease</td>
<td>Malattie Infective</td>
<td>Infektolgs</td>
</tr>
<tr>
<td>Infectious and Tropical diseases</td>
<td>--/-</td>
<td>--/-</td>
<td>infectious diseases</td>
<td>infectious diseases</td>
<td>infectious diseases</td>
<td>infectious diseases</td>
<td>Infectious diseases specialist</td>
</tr>
<tr>
<td>2</td>
<td>--/-</td>
<td>--/-</td>
<td>5</td>
<td>6</td>
<td>4 years</td>
<td>4</td>
<td>5 [will be changed to 4]</td>
</tr>
<tr>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>--/-</td>
<td>--/-</td>
<td>--/-</td>
<td>--/-</td>
<td>--/-</td>
<td>Genito Urinary Medicine</td>
<td>Urologia / Nefrologia</td>
<td>Dermatovene-rolgs</td>
</tr>
</tbody>
</table>
ESCMID Observerships and Collaborative Centres

Robert Read, Professional Affairs Officer Infectious Diseases, r.c.read@sheffield.ac.uk

Gunnar Kahlmeter, Professional Affairs Officer Clinical Microbiology, gunnar.kahlmeter@ltkronoberg.se

ESCMID is launching two very exciting initiatives – the ESCMID Observerships and ESCMID Collaborative Centres (ECC). The Observerships will be funded opportunities for any ESCMID member to spend one day, one week or one month at an ESCMID Collaborative Centre. We view this as a critical programme for ESCMID – it will foster trans-European cooperation and professional and academic exchange.

The first step in the process will take place over the following 3 months. We invite departments of Infectious Disease (ID) and Clinical Microbiology (CM) throughout Europe to apply, singly or together, for status as an ESCMID Collaborative Centre. We ask prospective centres to provide a description of the department, the geography, city and hospital, together with a profile of competences, staff and services and the main interests and achievements of the institution. Any special epidemiological characteristics of the country or area should be described. Institutions can be Clinical (Medical) Microbiology, Clinical Bacteriology or Virology services, Infectious Disease Units or a combination of these. Microbiology and infectious disease departments are encouraged to apply together. We hope that institutions from many parts of Europe will apply and be rewarded by the prestige and profile that it will engender. Furthermore, ESCMID members from Collaborative Centres will be given priority when applying for Observerships in other Collaborative Centres.

A Collaborative Centre must be prepared to accept at least one ESCMID Observer per year. The length of the visit is agreed between the Centre and the Observer but should normally be between one day and one month. Observers will be able to study service provision, operational structures, methodologies and techniques, as well as clinical practice. If the length of the visit is more than a day, the Observer should be prepared to give a talk on the organization of CM and/or ID in his country. The Observership is not primarily meant to foster research activity but this is not excluded.

Good examples of appropriate ECCs for Infectious Disease include those institutions where high volumes of patients with specific diseases are seen, particularly those which might not be seen by doctors in all parts of Europe (e.g. patients with multi-drug resistant *M. tuberculosis*, Hepatitis, HIV, Congo Crimean haemorrhagic fever, Brucellosis, or tropical disorders) but also non-exotica treated at a high standard are important.

Good examples of appropriate ECCs of Clinical Microbiology include those with particular diagnostic expertise, skills and organization. High throughput institutions; reference laboratories; laboratories with integrated bacteriology, virology and molecular microbiology; and laboratories with an international profile are invited to apply.

Institutions should provide two external references (name, affiliation, email), preferably from another country, with their application.

Once we have established a list of Centres we will generate a web-based application procedure for individuals to become ESCMID Observers. Any ESCMID member will be able to apply to visit an ECC. Applications will not be restricted to trainees as it is acknowledged that senior members can benefit equally from the programme. On the application form, prospective ESCMID observers will be asked to provide details of their function within their current institution, clinical and research interests and motivation for the visit. They will be asked to state with which ECC they have an agreement concerning a visit and the visit time and length. The application will be considered by the ESCMID Executive and if approved, ESCMID will contact the Observer and the ECC so that they can finalize arrangements for the visit.

The ESCMID Executive has approved a budget that will be sufficient for approximately 50 Observerships during the first year. Successful observers will be permitted to apply for costs covering travel and some limited subsistence costs. Ultimately, we hope that this will become an established feature of ESCMID’s contribution to our disciplines. Our intention is that the successful completion of an ESCMID Observership will be viewed as a positive attribute in a good *curriculum vitae*.

We urge prominent ESCMID members to nominate their own Centres as ESCMID Collaborative Centres. For the initiative to get off to a flying start we ask those of you who are certain that you will be interested to sign up on our website or send an email to karin.werner@escmid.org with the following key information:

ESCMID Collaborative Centre
Name of Centre:
Name of contact person:
Email of contact person:

The potential future benefits for both hosts and visitors are legion, and will foster international cooperation and friendship.
The First Meeting of the Section of Medical Microbiology

European Union of Medical Specialists (UEMS)

Katja Seme, Secretary and Slovenian Delegate of the UEMS Section of Medical Microbiology, katja.seme@mf.uni-lj.si

John Degener, President and Dutch Delegate of the UEMS Section of Medical Microbiology, j.e.degener@mmb.umcg.nl

In a previous article (ESCMID News 2008; issue 2: 23) John Degener reported that an independent UEMS Section of Medical Microbiology has been created at the meeting of the UEMS Council held in Brussels on 19 April 2008. The first Meeting of the new Section took place in Brussels on 27 September 2008. Twenty-one delegates from 16 European countries attended the meeting (see Figure). The countries represented were: Austria, Belgium, Croatia, Denmark, Finland, Germany, Hungary, Italy, Latvia, Republic of Macedonia, The Netherlands, Norway, Slovenia, Switzerland, Turkey and United Kingdom, yet 14 full UEMS member countries still had no official delegate within the Section. Those present decided by consensus to contact their corresponding national medical associations and invite them to nominate delegates to the UEMS Section of Medical Microbiology who could then regularly attend and participate in the working meetings of the Section.

Bernard Maillet, UEMS Secretary General, was instrumental in organizing the first meeting of the Section. He explained the procedures regarding membership of a Section in detail and listed the major tasks of Sections, which are to:

- propose a Core Curriculum
- draw up a log book for training
- write Chapter 6 of the Training Charter of the UEMS for each Specialty
- help harmonize training and qualification
- help harmonize health care services.

Members of the board of the Section were elected unanimously (see Box).

Liaisons with the UEMS Section of Medical Biopathology and the UEMS Section of Infectious Diseases were discussed and the appointment of liaison officers who would maintain contact with Sections was suggested.

Following the procedural items of the agenda, development of a novel training programme for residents in Medical Microbiology in The Netherlands was presented and a Working Group for the revision of the curriculum was formed.

The most important future tasks of the Section are to define:

- a central monitoring authority for the specialty of Medical Microbiology at the EC
- general aspects of training in the specialty
- requirements for training institutions
- requirements for teachers within the specialty and
- requirements for trainees.

Next spring, the Section meeting will be held in Helsinki on the last day of ECCMID (19 May 2009).

Members of the Board of the Section

John Degener (The Netherlands), President of the Section
Jørgen Prag (Denmark), Vice-President of the Section
Katja Seme (Slovenia), Secretary of the Section
Daniela Marchetti (Italy), Treasurer of the Section
Role of Lipooligosaccharide Locus Classes in Diversity and Invasion Potential of Campylobacter Jejuni

Ihab Habib, PhD student, Department of Veterinary Public Health and Food Safety, Ghent University, Belgium, ihab.habib@ugent.be

Introduction
In March 2008 I received an ESCMID training fellowship in support of my PhD research project in the Department of Veterinary Public Health and Food Safety at Ghent University, Belgium. The training fellowship allowed me to conduct part of my research under supervision of Prof Alex Van Belkum, at the Department of Microbiology and Infectious Diseases, Erasmus University Medical Centre, Rotterdam, The Netherlands. I would like to thank ESCMID for supporting this project.

During the four-month training, I conducted a study on the correlation between Campylobacter jejuni multilocus sequence types, invasion phenotypes in Caco-2 cells, and lipooligosaccharide (LOS) gene locus class variation. C. jejuni is the most common human enteric pathogen in Europe. In addition, C. jejuni is a predominant infectious trigger in acute post-infectious neuropathies such as Guillain-Barré syndrome (GBS) and its variant, the Miller Fisher syndrome (MFS). Many studies have now provided convincing evidence that molecular mimicry between C. jejuni LOS and gangliosides in human peripheral nerve tissue plays an important causal role in the pathogenesis of GBS/MFS. Moreover, there is a growing body of scientific evidence that indicates a possible role of LOS in adhesion and invasion of C. jejuni.

Purpose
Using PCR screening I investigated LOS class diversity in C. jejuni from Belgian chicken meat and from human cases with diarrhoea, as well as the impact of LOS class variation on invasion potential of C. jejuni in a subset of isolates. Finally we further elaborated the epidemiological relevance of C. jejuni LOS gene screening by correlating its results with results from multilocus sequence typing.

What I accomplished
Results of PCR screening indicate that 87.2% (102/117) of the C. jejuni strains characterized in this study can be assigned to 1 of the 5 LOS locus classes (A-E). 42.5% (17/40) of C. jejuni strains from human diarrhoeal samples were found to share sequence types with strains from chicken meat. Results presented in Figure 1 show a concordance between C. jejuni LOS locus classes as assigned by PCR and certain clonal complexes (CCs) defined by MLST. Of note, a majority of C. jejuni strains in CC-21, the most frequent complex in the study collection, were found to express LOS locus class C (85.7%, 24/28).

There was no significant correlation between source of strains (human/poultry) and the level of invasion in Caco-2 cells. Interestingly, the invasion potential of C. jejuni strains with sialylated LOS (n=23; classes A, B, and C) was significantly higher (P value= 0.002) than that of C. jejuni strains with non-sialylated LOS (n=13; classes D and E). Among the panel of C. jejuni strains selected to study their invasion phenotypes, the more invasive strains with sialylated LOS classes belonged to CC-21 (all of LOS class C strains, and 3 out of 5 strains with LOS class A) and CC-206 (in C. jejuni strains with LOS locus class B). On the other hand, the low-invasive C. jejuni with LOS classes D and E (non-sialylated) were grouped in CC-354 and CC-45, respectively.

Conclusion
The present study adds to the limited knowledge on LOS class diversity in C. jejuni strains isolated from chicken meat, and the invasion potential of such strains, compared to strains isolated from human diarrhoeal samples. The high prevalence of Campylobacter in poultry, combined with the fact that a substantial subset of the C. jejuni strains characterized in this study possesses neuropathy-associated LOS, is worrisome. Therefore, strategies to control Campylobacter contamination in chicken meat might reduce morbidity due to GBS, in addition to reducing the level of Campylobacter-related human enteric illnesses. Our results support the growing scientific evidence that sialylation of LOS could improve C. jejuni fitness and infectivity potential in different reservoirs and hosts. The present study revealed a correlation between multilocus sequence typing clonal complexes and certain LOS locus classes. This correlation needs to be investigated further, to determine if this underlines a biological advantage of C. jejuni to colonize birds and to survive better in the environment.
A Quest for Antibiotic Treatment Alternatives for Cholera in an Era of Challenging Antimicrobial Resistance

Sabeena Ahmed, Research Officer, Clinical Sciences Division, International Centre for Diarrhoeal Disease Research, B Dhaka, Bangladesh, sabeena@icddrb.org

In Spring 2008 I spent almost 2 months in the Research and Development Laboratory, AB Biodisk, in Solna, Sweden for collaborative research and training in various techniques of antimicrobial susceptibility testing. My work in Solna was very productive and will help me with future testing and analysing of Vibrio cholerae in my home laboratory.

Introduction

Cholera associated with V. cholerae O1 is the leading cause of severe dehydrating diarrhoea which has distinct seasonality in Bangladesh (1). Effective antimicrobial treatment of cholera reduces stool volume, thus reducing the volume of rehydration fluid required, and shortens the duration of illness. Reduced faecal excretion of V. cholerae also minimizes transmission of the organism and limits potential infection (2).

Tetracycline (or the longer-acting derivative, doxycycline) has long been the antibiotic of choice for severe cholera in Bangladesh for adults whereas erythromycin has been used to treat young children and pregnant women (1,2). Furazolidone, erythromycin, trimethoprim-sulfamethoxazole, and chloramphenicol are other alternatives (3). Data from Bangladesh has shown emergence of multi-drug resistant (MDR) V. cholerae O1 with concomitant resistance to tetracyclines, trimethoprim-sulfamethoxazole, chloramphenicol, furazolidone and erythromycin (4). These MDR-strains were also characterized by progressively elevated minimum inhibitory concentration (MIC) of ciprofloxacin (5,6). Quantitative antimicrobial susceptibility testing of currently available as well as newer antibiotics may help to target antimicrobial therapy towards these unique MDR-strains as it will help in optimizing choice, dose and dosing regimens and improving clinical efficacy of the antibiotics used, as well as delaying the emergence of resistance. The purpose of this study was to quantify the in vitro activity of a wide range of traditional and non-traditional compounds against a unique collection of MDR V. cholerae strains from Bangladesh. We also attempted antibiotic combination

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Figure 1. Correlation between C. jejuni lipooligosaccharide (LOS) locus classes and multilocus sequence typing clonal complexes
testing of arbitrary combinations although limited information is available on the use of specific antibiotic combination to treat cholera caused by recent MDR *V. cholerae* strains.

**Methods**

Nineteen *V. cholerae* O1 strains isolated from confirmed cholera patients admitted to the Dhaka hospital of the International Centre for Diarrhoeal Disease Research, B in 2005 and 2008 and characterized using standard methods (7) were examined. MIC of 20 antibiotics (14 classes; see Box) were determined using Etest (AB BIODISK), an agar-based predefined gradient technique that generates precise MIC values across a concentration range (15 dilutions). Etest results were analyzed as MIC fingerprints and according to CLSI susceptibility categories (8) except TMO (9). Four strains with different susceptibility patterns were subjected to combination testing: CI+EM, CI+CL, CI+DC, CI+MM, CI+TS, CI+TMO and TS+EM.

For MIC testing, a 0.5 McFarland Standard turbidity suspension of bacteria in 0.85% saline was streaked on Mueller-Hinton agar plates (MHA) (BBL) using the rota-plater Retro C80TM (AB BIODISK) and dried. Automatic dispenser Simplex C76TM, (AB BIODISK) was used to place Etest strips in optimal patterns. *Escherichia coli* ATCC 25922 was used for quality control.

The Etest technique for combination testing was used where gradient imprints of different antibiotics were superimposed in MIC to MIC ratios (11,12). For each strain, 7 MHA plates (90 mm) were streaked with 0.5 McFarland equivalent inoculum suspension. Etest CI was placed on 6 plates and Etest TS on one. The positions of the predetermined MIC values for CI and TS were marked accordingly. Plates were left for 1h for transfer of the antibiotic gradient imprints to the agar after which the strips were removed and saved. The strip for the second agent was then vertically positioned on top of the imprint of the first agent such that the MIC positions of the two drugs were superimposed. The Retro C88 (vacuum pen) was used for placement and removal of Etest strips. All plates were incubated at 35°C for 16-18h.

MICs were read according to AB BIODISK guidelines (10). MICs of compounds in combination were read by placing the saved Etest strips on the back of the agar plate aligned in the centre of the inhibition ellipse seen. MICs of individual agents and in combinations were compared by the activity of the most active single agent to its activity in combination. Fractional Inhibitory Concentration indices (FICIs) were calculated as MIC-A (in combination)/ MIC-A alone + MIC-B (in combination)/ MIC-B alone.

**Results and Discussion**

The following resistance patterns and MIC ranges (µg/mL) were found: All to TS (>32), and NA (>256), eighteen to EM (1-48), fifteen to FM (96-1024), fourteen to GEM (0.38-1), thirteen to LZ (6), ten to TC (8-24), eight to CL (8-12), three to AZ (3-8) and DC (6). All were susceptible to: CI (0.25-0.75), MX (0.19-1.5), GA (0.125-1.5) GM (0.75-1.5), CT (<0.0016), PM (0.064-0.25), IP (0.75-1.5), TGC (0.047-0.094), MM (0.75-3) and TMO (2-4).

MIC fingerprinting grouped 15/19 strains into 3 phenotypes based on co-resistance to 6 antibiotics (EM, TC, TM, TS, NA, CL), resistant to all except: i) CL (n=8), ii) TC (n= 6) and iii) CL, TC (n=1).

Resistance against traditional antibiotics is considerably higher compared to non-traditional compounds, except for FM, and LZ. AZ and DC resistant isolates showed cross-resistance to EM and TC respectively (Figure1). A bimodal distribution with a distinct resistant population can be seen for EM, AZ, CL, TC and DC.

NA-resistant strains exhibited reduced susceptibility against CI, although susceptible according to CLSI breakpoints. The MIC values of newer fluoroquinolones were similar and differed by no more than 2-2.5-fold compared to CI-MIC reflecting cross resistance among quinolones. The progressive development of low level resistance to CI over time may be associated with the inappropriate use of ciprofl oxacin presumed to be active due to “incorrect” CI breakpoint and/or use of inadequate dosages that selects for resistance.

CI in combination with EM/CL/DC/MM and TS combinations with CI/EM resulted in no difference (FICI ≥ 2) for all strains. CI+TMO interactions ranged from indifference (with maximum FICI 1.32, to additive with FICI 1.

**Conclusions**

Promising in vitro activity of a number of non-traditional agents (GM, CT, PM, IP, TGC, TMO) was observed. These compounds deserve further studies as potential options for cholera management to encounter resistant isolates and for antibiotic rotation strategies.

To maximize clinical efficacy of concentration-dependent agents such as ciprofloxacin, the current MIC breakpoints may need to be reassessed, specifically for *V. cholerae* as guided by pharmacokinetics (PK) and pharmacodynamic (PD) targets to optimize doses and dosing regimens. Important considerations for cholera management include different antibiotic pharmacokinetics to be expected due to excessive fluid loss and replacement. The importance of defining therapy (choice of antibiotic and dose regimens) for better clinical outcome using MIC results and PK/PD targets (such as Monte-Carlo simulations) for diarrhoeal patients should be further investigated. Although no in vitro synergy was found for combinations tested, various antibiotic combinations against MDR *V. cholerae* should be further examined.
Figure 1. Distribution of resistance among recent Vibrio cholerae strains from Bangladesh, for abbreviations see Box

References
7. Laboratory Methods for the Diagnosis of Epidemic Dysentery and Cholera Centers for Disease Control and Prevention Atlanta, Georgia 1999, WHO/CDS/CSR/EDC/99.8
8. Performance Standards for Antimicrobial Susceptibility testing: Eighteenth Informational Supplement, M100-S18 Vol. 28 No.1 of Clinical and Laboratory Standards Institute (CLSI)
11. Etest references on file at AB BIODISK. Request via techsupport@abbiodisk.se

List of antibiotics and their abbreviations, for which MIC was determined
Aminoglycosides: Gentamicin (GM), Phosphonic Acid: Fosfomycin (FM), Penicillins: Temocillin (TMO); Mecillinam (MM), Cephalosporin: Cefotaxime (CT), Ceftazime (PM), Carbapenems: Imipenem (IP); Macrolides: Erythromycin (EM), Azalides: Azithromycin (AZ); Sulfonamides: Trimethoprim/sulfamethoxazole (TS); Glycyclines: Tigecycline (TGC); Tetracyclines: Tetracycline (TC), Doxycycline (DC); Quinolones: Nalidixic acid (NA), Fluoroquinolones: Ciprofloxacin (CI), Gatifloxacin (GEM), Moxifloxacin (MX), Gatifloxacin (GA); Phenicols: Chloramphenicol (CL); Oxazolidinone: Linezolid (LZ).
Rotavirus Surveillance in Bulgaria – Present State and Future Directions

Zornitsa Mladenova, virologist in the National Reference Laboratory of Enteroviruses, Department of Virology, National Center of Infectious and Parasitic Diseases, Sofia, Bulgaria, zornitsavmbg@yahoo.com

For the last 3 years I have been working in the area of rotavirus detection and strain characterization. In June 2008 I spent one month in the laboratory of Dr. Jim Gray in the Enteric Virus Unit at the Health Protection Agency in London, UK, under the supervision of Dr. Miren Iturriza-Gomara to acquire skills for detailed characterization of rotavirus strains through sequence and phylogenetic analyses and primer design and to extend my knowledge on rotavirus diversity and evolution. This training was supported by an ESCMID Training Fellowship.

Background
Acute diarrhoeal diseases are a main public health problem worldwide and rotaviruses are recognized as the leading viral agent affecting children under the age of five. Because of the high rotavirus burden and frequently a severe progression of the disease, a number of international organizations such as World Health Organization, GAVI Alliance, Center for Disease Control, Children’s Vaccine Program and the Rotavirus Vaccine Program (PATH) have made the development of a rotavirus vaccine their priority goal. Today rotavirus disease is considered to be one of the vaccine-preventable illnesses as are poliomyelitis, measles, rubella and many others. Two rotavirus vaccines approved in February 2006 – „Rotarix“ (GlaxoSmithKline Biologicals) and „Rotateq“ (Merck & Sanofi Pasteur) – are the main instruments to dramatically decrease the 450’000 to 700’000 lethal cases as well as high medical and non-medical costs associated with 140 million rotavirus diarrhoeal episodes each year all over the world. Along with faster investigations and development of a rotavirus vaccine, some new initiatives have also become accepted. One such initiative is long-term and detailed surveillance of the rotavirus disease burden and rotavirus strain diversity by building local and regional networks. In response to the high requirements for diagnostics of rotavirus infections, which have been imposed in the European Union countries, in 2005 the National Reference Laboratory of Enteroviruses (NCIPD) in Sofia, Bulgaria, established the National Rotavirus Surveillance Network. The main goals of the network are to:
- show the medical community and authorities the necessity of rotavirus detection
- evaluate disease burden and clinical severity of rotavirus gastroenteritis
- monitor rotavirus G and P types circulating in different regions of the country
- collect relevant epidemiological data on rotavirus gastroenteritis cases
- assess the need for introduction of rotavirus vaccine in Bulgaria and the related benefits and risks.

Objective of the training
In my home lab we tested from January 2005 to May 2008 more than 3’000 stool samples from hospitalized children with acute diarrhoea for the presence of rotavirus. Within this sample group a high incidence of rotavirus infection between 36% and 42% was found. Either in our laboratory or in collaboration with our colleagues from Istituto Superiore di Sanita (Italy) and MEDUNSA (South Africa) over 400 rotavirus isolates were strain characterized. Since a high percentage (30–35%) of rotavirus strains were partly or fully untypeable using one-step semi-nested RT-PCR using previously published primers, we needed to learn and introduce new methods and algorithms for effective rotavirus G-P genotype characterization into our routine laboratory practice.

The training
During the training some Bulgarian rotavirus strains which we could neither G- nor P-genotype, were successfully identified using a new generation of primers and methods. It is well known that rotaviruses evolve through two major mechanisms – antigenic shift, reassortment of genes during the dual infection of a single cell, and antigenic drift, accumulation of point mutations, which are the basis for the emergence of novel G-P combinations or antibody escape mutants. Moreover, the accumulation of point mutations at primer-binding sites also makes molecular methods for genotyping unsuccessful. The recently developed primers which have been designed and optimized through extensive surveillance studies, a different nucleic acid extraction method and different amplification algorithm – reverse transcription using random primers followed by a semi-nested PCR which we used led to a successful characterization of these previously untypeable rotavirus strains. Direct sequencing was performed on the 15 rotavirus strains to confirm the genotypes detected through PCR. By sequence analysis of two other rotavirus isolates, we
were the first group to detect the G12P[8] rotavirus strain in our country and the zoonotically transmitted rotavirus with G3P[3] SGI specificity with canine-like origin.

**Summary**

Annually, 9,000 to 12,000 cases of acute gastroenteritis of unknown origin have been reported in Bulgaria among children less than 9 years of age. Using the incidence rate for rotavirus established in our investigations and a statistical model used by Soriano-Gabaro and colleagues for an assessment of the risk of rotavirus infection, we speculate that rotavirus disease is an important health problem in Bulgaria accounting for three to four thousand hospitalizations and more than one-hundred thousand mild episodes each year. In order to successfully survey, control and prevent rotavirus disease, obligatory rotavirus testing is needed in our country. Moreover, detailed strain characterization using new methods and algorithms will allow monitoring of the most common circulating genotypes, genotype changes over time and emergence of new rotavirus strains – information of major importance in the pre-vaccination and post-licensure eras. Concerning my research interests of rotavirus evolution and relationships between human and animal rotaviruses, the detection of the G3P[3] rotavirus strain with a likely animal origin poses a question for the need of studies of rotavirus strains circulating in pets, farm animals and humans.
The 7th ESCMID Summer School was held from 19 – 25 July in Regensburg, Germany. Organized by the ESCMID Education Subcommittee, the Summer School was hosted by the University of Regensburg, Germany, and was locally directed by Bernd Salzberger and his team. An international group of facilitators - Murat Akova (Ankara), Christoph Lange (Borstel), Falitsa Mandraka (Regensburg) and Achim Schwenk (London) – was involved early in the development of the Summer School programme.

This course now can build upon much experience with a well tried format, continually developed since the first Summer School: Lectures are held in the morning, followed by participants’ case presentations and interactive small group sessions in the afternoon. The number of participants rose again to a new record: 55 participants from 21 countries were present. The number of clinicians and clinical microbiologists was well balanced. This year a completely new chapter was added to the five major lecture chapters present in the last Summer Schools:

- microorganisms and pathogenesis
- antimicrobial resistance
- epidemiology, infection control and public health
- major clinical syndromes
- immunocompromised hosts
- skill-building lectures.

Three new skill-building lectures were integrated into the programme this year:
- How to write a paper or a thesis
- How to find a good mentor
- How to conduct a study according to Good Clinical Practice.

After the morning lectures, participants presented medical cases from their own experience which stimulated lively discussion and exchange of experiences from the different countries and regions. In the afternoon facilitators worked with participants in small groups. The different groups discussed further medical cases, focussed on presentation techniques, fought a mysterious outbreak of hepatitis B and worked “hands-on” on bronchoscopic techniques.

ESCMID supported 17 participants with an attendance grant covering the full tuition fee. Further financial support for the Summer School was granted as unrestricted educational grants by the German branches of Abbott, Astra-Zeneca, Bayer Healthcare, Boehringer-Ingelheim, Bristol-Myers-Squibb, Essex, Gilead, Infectopharm, Jansen-Tibotec, MSD, Novartis, Pfizer, Roche and Wyeth.

A diverse social programme kept the motivation up after the often long hours of lectures and group work. All participants’ accommodations were in the historical centre of Regensburg, a recent addition to the UNESCO world heritage list, and had ample opportunity to experience the city’s atmosphere. A guided city tour on the first evening was followed by a welcome dinner. On Tuesday afternoon we visited the monastery of Weltenburg, one of the oldest monasteries and breweries in Bavaria, situated picturesquely on the Danube. On the final evening the participants and lecturers dined and celebrated afterwards in a historical Regensburg building.

The atmosphere between the participants, lecturers and facilitators was open and relaxed. All lectures gave rise to lively discussion, the small group sessions brimmed with activity. During...
this week the participants successfully functioned as an active international team and updated their knowledge of all fields covered. This was reflected by the excellent evaluation of the School given by the participants at the end of the course. The new topics covering general skill building were all rated excellent.

The seventh edition of the ESCMID Summer School, as the ones in the past, also proved to be a very successful concept. The opportunity to learn through interactive and open discussions was highly appreciated by all participants, lecturers and facilitators. The potential for further development of the course through constant evolution and incorporation of new and important topics was proven.

We hope that all participants left Regensburg with good memories and that they will spread the news and the spirit of the ESCMID Summer Schools among their colleagues for the next editions.

Visit the Summer School 2008 website for Powerpoint presentations and pictures at www.akm.ch/ESCMIDsummerschool2008.

8th ESCMID Summer School

Porto, Portugal
12 – 17 July 2009

A one-week course dedicated to postgraduate and continuous medical education in the field of Clinical Microbiology and Infectious Diseases, designed for young MDs and biologists or pharmacists working in the infection field.

Registration for the Summer School will open in January 2009 at www.escmid.org/summerschool.

Organized by the ESCMID Education Subcommittee
Hosted by the Faculdade de Farmácia da Universidade do Porto.

Our impressions from the Summer School

A very exciting postgraduate event was recently held in Regensburg, Germany.

The Summer School was very successful from every aspect. We had the chance to acquire knowledge by attending presentations and discussions and by preparing and presenting our own cases. It was a week full of intensive interdisciplinary communication, discussion and exchange of ideas, experiences and insights.

Apart from the intellectual experience, we also had an amazing time in the free part of the day. We had three dinners together, one of which resulted in a party with lots of dancing and happy faces! Besides this, we had the chance to see places and monuments reflecting Bavarian architecture and culture. Although the weather was not ideal for sightseeing, the chosen town was traditional, romantic and peaceful.

It was an experience we will never forget! Thank you for this!

Maria Lambrou, Larissa, Greece, maria_labrou@hotmail.com

Eleni Ntokou, Larissa, Greece, hldgr@hotmail.com
More detailed information about ESCMID courses and conferences as well as general information about other events can be found on the ESCMID website (www.escmid.org) under Dates & Events.

## Forthcoming Events

### Postgraduate Education Courses and Workshops

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<td>Beta-lactamases in Community-acquired Infections: from Lab to Clinic Ankara, Turkey</td>
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<td>Diagnosing and Treating Fungal Infections: from Neonates to Adults Thessaloniki, Greece</td>
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### ESCMID Summer School

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### ESCMID Conferences

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<td>ESCMID/FEMS Conference</td>
<td>From Microbial Pathogenesis to the Discovery of Antivirulence Drugs Villars-sur-Ollon, Switzerland</td>
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<td>Nov 2009</td>
<td>ESCMID Conference</td>
<td>Enterococci: from Animals to Man Barcelona, Spain</td>
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<td>Autumn 2009</td>
<td>ESCMID Conference</td>
<td>Antibiotic Treatment Failure in the Absence of Bacterial Resistance Germany</td>
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Feb/Mar 2010 ESCMID Conference
Invasive Fungal Infections
Rome, Italy

10 – 13 Apr 2010 20th ECCMID
Vienna, Austria

Endorsed by ESCMID

23 – 24 Jan 2009 14th International Symposium on Infections in the Critically Ill Patient
Berlin, Germany
elvira.vitores@momentum-spain.com
www.infections-online.com

13 – 16 Feb 2009 International Meeting on Emerging Diseases and Surveillance (IMED 2009)
Vienna, Austria
doris.steinbach@mci-group.com
http://imed.isid.org

4 – 7 Mar 2009 6th International Conference on Management and Rehabilitation of Chronic Respiratory Failure
Naples, Italy

25 – 28 Apr 2009 10th International Symposium on Modern Concepts in Endocarditis and Cardiovascular Infections
Naples, Italy

7 – 9 May 2009 Oxygen & Infection
Stockholm, Sweden
www.oxygeninfection.se

2 – 5 Sep 2009 EUROBIOFILMS 2009
Rome, Italy
eurobiofilms2009@ptsroma.it
www(ptsroma.it/EUROBIOFILMS2009/

6 – 10 Sep 2009 6th European Congress on Tropical Medicine and International Health and 1st Mediterranean Conference on Migration and Travel Health
Verona, Italy
www.tropicalmed.eu/name/Congress+Tropical+Medicine.html

19 – 22 Oct 2009 Clostridia: The Impact of Genomics on Disease Control
Rome, Italy
paola.mastrantonio@iss.it

Erratum
We regret that in the last issue of ESCMID News (2/2008, p. 51), we presented an image of Gram staining that was not optimal. This image with the following legend should have been printed.

Figure 5. Gram-stained smear of pneumococci in sputum from a patient with pneumonia. Gram’s original smears do not exist. (x 1000, photo: N Høiby)
ESCMID’s mission is to improve the diagnosis, treatment and prevention of infectious diseases by promoting and supporting research, education and training in the infection disciplines. This is achieved by scientific exchange, educational programmes, grants and awards, certification and consultation with professional and government agencies.

Front Page: A scheme from Helen Giamarello’s excellent talk about better cooperation between Clinical Microbiology and Infectious Disease Specialists. Her presentation slides and others are available on the ESCMID website.

Below: Participants at the ESCMID Professional Affairs Workshop who helped make the event a great success.