ESCMID EUROPEAN SOCIETY OF CLINICAL MICROBIOLOGY AND INFECTIOUS DISEASES

2/2007

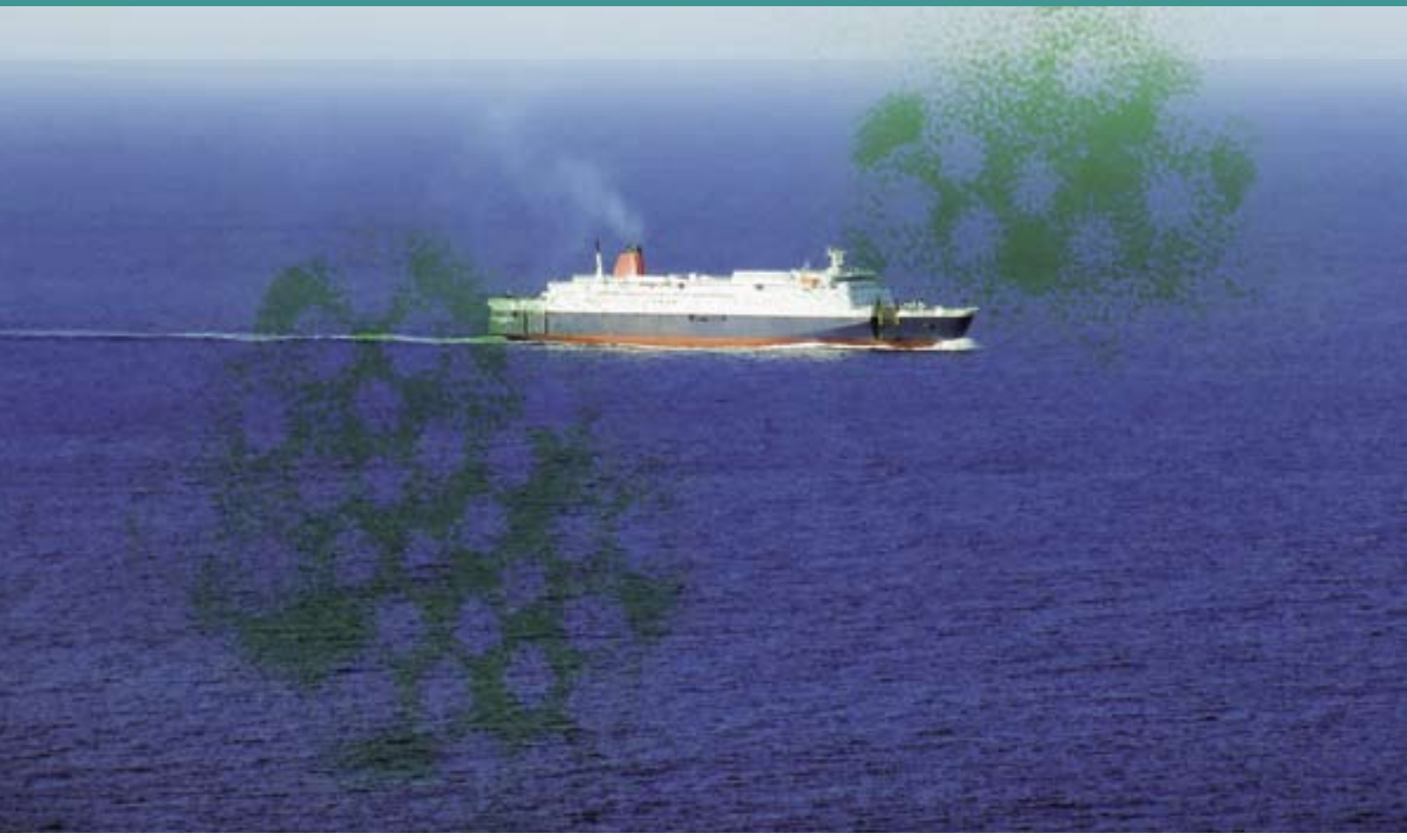
ESCMID NEWS

SOCIETY
Assembly of Members 2007

PROFESSIONAL AFFAIRS
Focus an Antibiotic Resistance

UEMS: Is an Independent Section of Clinical Microbiology Necessary?

SCIENCE AND EDUCATION
Norovirus Infections on Cruise Ships: A Medical Challenge



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Imprint

ESCMID News
Newsletter of the European Society of Clinical Microbiology and Infectious Diseases

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Current and Future Impact of Molecular Biology in the Diagnosis of Infectious Diseases

Jordi Vila, ESCMID Scientific Affairs Officer, jvila@ub.edu

The emergence of new pathogens or the reintroduction of others which had been quiescent is a challenge for clinical microbiologists. The ingenious idea that man could control infectious diseases with the successful application of vaccines or the introduction of antibiotics was a dream soon refuted by reality. However, the field of Clinical Microbiology is undergoing continuous change with technological advances that provide better diagnostic and therapeutic tools. The general conclusion is that this discipline is a living specialty with a bright future.

Traditionally, the role of the microbiology laboratory in the diagnosis of infectious diseases caused by bacteria has consisted of the detection of the causal pathogenic agent through culture of the clinical specimens. This methodology has certain limitations, however, the most important disadvantage being the time required to carry out the process of isolating and identifying pathogenic microorganisms using culturing techniques. This, in part, has led to the development of rapid diagnostic techniques. Some of these use monoclonal antibodies whose high specificity accounts for a great advance in the field of microbiologic diagnosis. Nonetheless, the use of immunologic reactions involves a series of inherent limitations.

In the last decade we have witnessed a transfer of the techniques for detecting nucleic acids from basic research settings to clinical laboratory settings. In the last years these techniques have undergone profound evolution. Hybridisation of nucleic acids may be considered the origin of molecular biology as applied to the diagnosis of infectious diseases. However, the most important step in the evolution of molecular biology techniques was the discovery of polymerase chain reaction (PCR) at the end of the 1980s. In addition, a series of gene amplification techniques has appeared which have been, more or less successfully, introduced into the field of diagnosis. The introduction of PCR also led to a radical change in microbiological studies. Before PCR, descriptive studies on the etiology of some infectious diseases (descriptive microbiology) were often presented in congresses covering microbiology and infectious diseases. Today, descriptive microbiology has turned into descriptive molecular microbiology, for example, the study of extended spectrum beta-lactamases in a collection of clinical isolates of Enterobacteriaceae. This change has obviously come about because of the methodological ease of PCR since everyone has a thermocycler in his/her laboratory. In recent years, realtime PCR has allowed more rapid quantification of nucleic acids present in a clinical specimen. However, this methodology continues to limit the number of reactions which may be performed in a single assay. This inconvenience can be avoided with the use of DNA microarrays which allow the use of thousands of probes, making it possible to simultaneously detect a wide number of microorganisms (bacteria, virus, parasites and fungi). Moreover, microarrays not only allow the identification of the microorganism but also the analysis of the genotype of resistance, the identification of the presence of virulence factors and the typing of the microorganism by detection of specific genes and/or mutations. The main drawback of this methodology is the sensitivity, which may be solved by the previous amplification of the gene(s) to be detected. Indeed, different diagnostic companies are developing techniques with this objective. In addition, nanotechnology may contribute to the development of miniaturised microarrays with the consequent increase in sensitivity and the possibility of automation. The advantages of using rapid molecular diagnostic techniques are undeniable.

Despite all these advances in our diagnostic activities, we should not forget the genetic plasticity of most microorganisms due to the acquisition and subsequent recombination of foreign genetic material. Microorganisms are, therefore, in constant evolution, which may lead to the generation of new pathogens. Moreover, molecular biology techniques have already demonstrated their capacity to reveal the presence of microorganisms without their being isolated. Such is the case of the hepatitis C virus which was cloned in 1989 and later sequenced but not isolated, and the characterisation of *Tropheryma whipplei*, the agent responsible for Whipple's disease.

In conclusion, in the not too distant future PCR-microarray DNA or similar techniques will replace the detection of viral antigens, cell cultures and serology in the virologic diagnosis of infectious diseases and will constitute a rapid technique to supplement conventional techniques in the bacteriological diagnosis of infectious diseases. In addition, they will also allow the identification of new pathogens.

Assembly of Members 2007

Minutes

The Assembly of Members in the year 2007 was held during the 17th ECCMID in Munich on 1 April from 17:45 h – 19:00 h.

Welcome and President's Report

Ragnar Norrby welcomed the 106 ESCMID members attending the Assembly 2007. He noted that the minutes of the Assembly 2006 have been published in ESCMID News 2-2006 and that the invitation and agenda for the Assembly 2007 had been correctly sent out as stated in the Statutes and published in ESCMID News 1-2007.

Ragnar Norrby organised his presidential report into three main sections: consolidation, financial stability and increased EU activities. Indeed, the large number of activities taking place under the auspices of ESCMID is becoming increasingly known to members and the scientific community in the infection field at large. The financial resources now allow ESCMID to survive at least one year with no income besides membership fees. This allows increased funding of activities from which the membership will benefit. At the EU level ESCMID not only participates in projects funded by the European Commission, such as GRACE and EUCAST, but the European CDC has also become aware of ESCMID and its Study Groups as sources of expertise.

At the end of 2006 an election took place among the membership for the renewal of the Executive Committee. For the first time it was carried out electronically through the internet. Elisabeth Nagy, Szeged, Hungary, and Jordi Vila, Barcelona, Spain, were confirmed for a second term, while Murat Akova, Ankara, Turkey, was newly elected to the Executive as successor to Patrick Francioli, who according to the Statutes had reached his maximum term of office.

The new Executive Committee constituted itself on 30 April 2007, elected the President for the term 2009 – 2011 (President-elect from 2007 - 2009) and agreed on the following portfolio distribution, which becomes effective after the Assembly 2007:

- President: Giuseppe Cornaglia, Verona, Italy
- Past President: S. Ragnar Norrby, Stockholm, Sweden
- President-elect, Secretary General: Javier Garau, Barcelona, Spain
- Treasurer: Elisabeth Nagy, Szeged, Hungary
- ECCMID Programme Director: Andreas Voss, Nijmegen, the Netherlands
- Education Officer: Murat Akova, Ankara, Turkey
- Professional Affairs Officer (Clinical Microbiology): Hélène Aubry-Damon, Paris, France
- Professional Affairs Officer (Infectious Diseases): Robert Read, Sheffield, UK
- Scientific Affairs Officer, ECCMID Programme Director-elect: Jordi Vila, Barcelona, Spain.

Report of the Secretary General

The membership figures were reported by Peter Schoch since Patrick Francioli was prevented from attending the Assembly. As of March 2007 ESCMID had 3109 regular members, 346 thereof paying a reduced membership fee. For the past five years there has been a steady increase in the ESCMID membership by an average of 134 members per year. The best represented country is the UK with 255 members, followed by Germany (210) and the US (180). Currently 48 societies, mostly national societies for clinical microbiology and/or infectious diseases, are affiliated with ESCMID. ESCMID now represents about 16'000 professionals across Europe.

Presentation of the ESCMID Research Fellowships

Marc Struelens, Chair of the ESCMID Awards Committee, had the pleasure and honour to present the ESCMID Research Fellowships 2007, including a cheque of EUR 5000, to the following ESCMID members:

- Isabelle Bekeredjian-Ding, born 1974 in Heidelberg, Germany; MD, Resident at the Department of Medical Microbiology and Hygiene, University of Heidelberg, Germany. Her project: Comparison of early immune recognition of *Staphylococcus aureus* in nasal carriers and non-carriers
- Paul D. Cotter, born 1975 in Cork, Ireland; PhD, Researcher at the Microbiology Department, University College Cork, Cork, Ireland. His project: Post-translationally modified peptides produced by Gram-positive bacteria
- Lemonica Johanna Koumbi, born 1978 in Graz, Austria; MSc in Human Molecular Genetics, PhD student at the 2nd Department of Paediatrics, University of Athens Medical School, Athens, Greece. Her project: Evaluation of the innate and adaptive responses against HBV in neonates born to chronic HBV carrier mothers. Lemonica Koumbi apologised for being unable to attend the Assembly.
- Ruhidil Gülsen Özkaya Sahin, born 1973 in Aksaray, Turkey; MD, PhD student at the Hacettepe University, Ankara, Turkey (currently at the Department of Laboratory Medicine, Lund University Medical Faculty, Lund, Sweden). Her project: Investigation of the impact of autoimmune factors on the effecter function of anti-HIV neutralising antibodies and neutralising antibody response in macaques and humans as part of a novel therapeutic vaccination trial
- Megna Ramaswamy, born 1976 in Mumbai, India; PhD, postdoctoral fellow at the Royal Free Hospital and University College Medical School, Department of Virology, London, United Kingdom. Her project: Immunological mediators of herpes simplex virus control in HIV-1 infected individuals receiving highly active antiretroviral therapy.

Marc Struelens congratulated the recipients on their success (applause).

Financial Report of the Treasurer

Elisabeth Nagy cited from the tax accountant's (Karl Haas, Loerrach, Germany) report 2006:

i) There are no tax arrears of payments.

ii) The balance of accounting complies with the bank statements.
iii) The non-profit status of the Society has never been contested.

Between 14 and 19 March 2007 an independent auditing company (BDO, Freiburg, Germany) examined ESCMID's accounts for 2006. They made the following recommendations:

i) The accounts 2006 are still preliminary and must be approved by the Assembly in 2008.
ii) The final accounts 2005 must be approved by the Assembly 2007.
iii) Because ESCMID generated high revenues during the past three years, BDO advised allocating a reserve after closing the financial year.

The Treasurer then presented the final Profit & Loss Accounts 2005 (Table 1) and Balance Sheet 2005 (Table 2). The corresponding preliminary figures for 2006, which were presented for information only, are summarised in Table 3 and Table 4.

Based on the excellent financial situation of ESCMID, the Executive Committee agreed to increase the 2007 budget compared to 2006 by EUR 450'000. Some of the major changes refer to i) supporting ESCMID Study Groups (EUR 70'000), ii) establishing an online lecture library with free access for ESCMID members (EUR 85'000), and iii) providing research grants and training fellowships of EUR 200'000.

Profit and Loss Accounts 2005			
Expenses		**Income**	
Executive Office	143 154	Membership fees	24 222
Membership services	89 552		
Executive & other comittees	52 646		
Publications: CMI, News, Online News, Website	199 596	CMI subscription fees	29 468
Study Groups, PGCs, summer school, scientific activities	63 213	15th ECCMID	1 261 345
ESCMID grants, awards & fellowships	73 155	ESCMID awards	13 000
Professional & public affairs	126 390		
Taxes	9 231	Interest, donations, others	54 062
Total expenses	756 935	**Total income**	1 382 097
		Result	625 163

Table 1:
Final Profit & Loss Accounts 2005, approved by the Assembly 2007

Profit and Loss Accounts 2006			
Expenses		**Income**	
Executive Office (Basel)	200 223	Membership fees	38 247
Membership services (Munich)	95 380		
Executive & other comittees	66 542		
Publications: CMI, ESCMID News, Online News, Website	231 129	Journals (subscribtion fees, supplements)	148 234
Study Groups, PGCs, summer school, scientific activities	197 785	ECCMID and scientific activities	2 325 940
ESCMID grants, awards & fellowships	69 790	ESCMID awards	28 000
Professional & public affairs	94 476		
Taxes	13 671	Interest, donations	128 305
Total expenses	968 596	**Total income**	2 668 326
		Result	1 699 730

Table 3:
Preliminary Profit & Loss Accounts 2006

Balance Sheet 2005			
Assets		**Liabilities**	
Fixed assets	2 018	Profit carried forward	2 240 228
Circulating assets:		Provisions	12 550
– Cash	516	Accounts payable	348 642
– Bank	2 087 785	Accrued credits to income	170 643
– Accounts receivable	681 592		
Prepaid expenses	152		
Total	**2 772 063**	**Total**	**2 772 063**
Profit carried forward as of 31 Dec 2005			2 240 228
Profit carried forward as of 31 Dec 2004			1 615 065
Result 2005			**625 163**

Table 2:
Final Balance Statement 2005, approved by the Assembly 2007

Balance Sheet 2006			
Assets		**Liabilities**	
Fixed assets	793 597	Profit carried forward	3 939 958
Circulating assets:		Provisions	12 000
– Goods	1 524		
– Cash	381	Accounts payable	323 170
– Bank	2 290 811		
– Accounts receivable	1 383 114	Accrued credits to income	194 899
Prepaid expenses	600		
Total	**4 470 027**	**Total**	**4 470 027**
Profit carried forward as of 31 Dec 2006			3 939 958
Profit carried forward as of 31 Dec 2005			2 240 228
Result 2006			**1 699 730**

Table 4:
Preliminary Balance Statement 2006

Question: Pramod Shah, Frankfurt, Germany, congratulated on these excellent results. He suggested publishing the presented figures and asked whether the membership fees can be lowered in view of the large surplus ESCMID achieved during the last years. Ragnar Norrby confirmed that the Minutes of the Assembly will be published in ESCMID News 2-2007 and include the figures as presented. Lowering the membership fees however is hardly feasible for legal reasons related to ESCMID's status as a non-profit organisation. The income from the membership fees must cover the direct costs related to membership services such as *CMI* and ESCMID News.

Approval of the accounts (vote)

Ragnar Norrby asked for a hand vote of approval of the financial report for 2005. It was approved unanimously.

Report of the Education Officer

In 2006 the following educational activities were held as reported by Javier Garau:

i) 5th ESCMID School, Santander, Spain, 1 – 7 July 2007, organised by the ESCMID Education Committee, directed by Luis Martinez-Martinez. Almost 50 students attended from 18 different countries.

ii) Eight postgraduate courses were held under the auspices of and supported by ESCMID:
– Measuring, Auditing and Improving Antimicrobial Prescribing 30 March – 1 April 2006, organised by ESGAP
– Update in Paediatric Respiratory Tract Infections 15 – 16 May 2006, Vilnius, Lithuania, organised by ESCMID and ESPID
– Detection and Characterisation of Metallo-beta-Lactamases 26 – 28 May 2006, Verona, Italy, organised by ESGARS and APUA
– Diagnosis and Management of Tuberculosis: New Perspectives for an Old Threat, 30 June – 1 July 2006, Tallinn, Estonia, organised by ESCMID and ERS
– Mechanisms of Antimicrobial Resistance. A Practical Approach, 18 – 24 June 2006, Palma de Mallorca, Spain, organised by ESCMID, SEIMC, SEQ and ASM
– Respiratory Infections: Antibiotic Resistance and Clinical Outcome of Lower Respiratory Tract Infections, 2 September 2006, Munich, Germany, organised by ERS and ESCMID for GRACE
– Diagnosis of Invasive Fungal Infections: New Approaches and Usefulness of Susceptibility Testing, 9 – 10 November 2006, Madrid, Spain, organised by the EFISG
– Training Course in Hospital Epidemiology 2006, 25 - 28 November 2006, Baden, Austria, organised by SHEA and ESCMID

iii) During the 16th ECCMID 2006 in Nice, 17 meet-the-expert sessions and seven pre-ECCMID workshops, some of them organised in collaboration with ESCMID Study Groups, were held.

Report of the Professional Affairs Officer, Clinical Microbiology

Hélène Aubry-Damon presented her portfolio, which she holds for one year only. The main activities related to the:

– evaluation of calls for proposals for EU-funded programmes
– participation in online consultation of the EU
– collaboration with the European Food Safety Agency (EFSA) concerning an exchange of data and the dissemination of information (e.g. symposium on foodborne-infection at the 17th ECCMID 2007)
– development of medical guidelines translating research results into practice
– cooperation with UEMS concerning CME accreditation, training curricula, and the recognition of Clinical Microbiology as an independent medical specialty across Europe.

Report of the Professional Affairs Officer, Infectious Diseases

Robert Read presented his main achievements as Officer for Professional Affairs in the field of Infectious Diseases.

– The algorithm for the development of ESCMID Medical Practice Guidelines was approved by the Executive Committee.
– Currently a discussion is ongoing to identify the topics for which pan-European guidelines are needed and the topics for 'transatlantic' guidelines to be developed in collaboration with IDSA. For pan-European guidelines excellent evidence-based national guidelines, if available, should be used as a source basis.
– A large number of infection guidelines from different sources have been evaluated. Those fulfilling certain criteria related to 'recentness' and 'quality' have been put onto the ESCMID website whether they are approved or not approved by ESCMID. The goal is to make our website a repository of European medical practice guidelines available in English.
– Establishment of an electronic Training & Career Platform for both those offering and those looking for a position. A special emphasis is given to training opportunities and the encouragement of exchange visits (www.escmid.org/career).

Report of the Scientific Affairs Officer

According to Jordi Vila there are currently 16 Study Groups operating under the auspices of ESCMID (see www.escmid.org/studygroups). Three of them were established only recently:

– EFWISG: ESCMID Food- and Water-borne Infections Study Group (www.escmid.org/efwisg)
– EMESG: ESCMID Meningitis Study Group (www.escmid.org/emesg)
– ESGVH: ESCMID Study Group on Viral Hepatitis (www.escmid.org/esgvh).

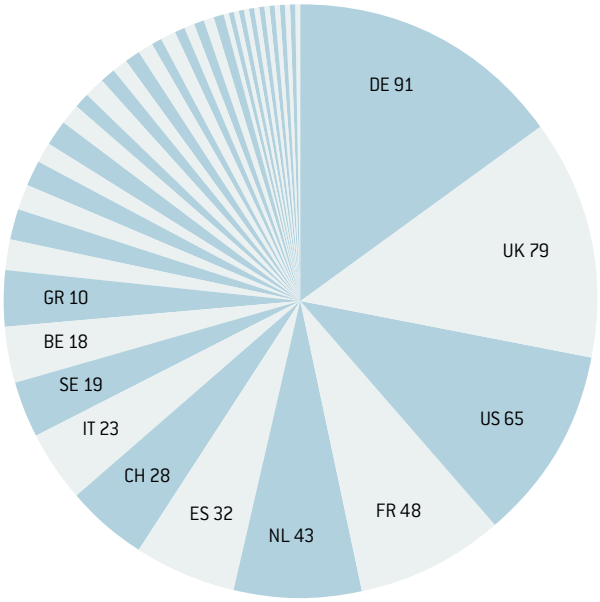
The activities of the Study Groups were reviewed by and discussed with the members of the Scientific Advisory Committee. The evaluation showed that the ESCMID Study Groups published 16 papers and submitted 14 abstracts to conferences and congresses, organised ten scientific meetings, 11 educational courses or workshops and conducted six research projects. Jordi Vila acknowledged the high activity of the majority of Study Groups and thanked them for their commitment.

In the past year, ESCMID organised three scientific conferences:

– ESCMID Conference on Extended-Spectrum beta-Lactamases, 29 – 31 May 2006, Venice, Italy
– International Conference on Surgical Infection, organised by ESCMID in cooperation with the Surgical Infection Society Europe and the Surgical Infection Society – North America, 6 – 8 September 2006, Stockholm, Sweden
– ESCMID / FEMS Conference on Mycobacterial Infections, 8 – 12 October 2006, Villars-sur-Ollon, Switzerland.

Question: Nursel Calik Basaran, Ankara, Turkey, wanted to know whether ESCMID has a Study Group on HIV. Jordi Vila answered that there is none and that there is no immediate plan to establish one but that ESCMID is open to receiving an expert proposal.

Figure 1: Country of origin of the 605 speakers and chairs at ECCMID/ICC 2007 from 52 different countries.



AT	9	KR	1
AU	5	MT	1
BE	18	MY	1
BG	1	NL	43
BI	1	NO	3
BR	2	NZ	1
CA	8	PE	1
CH	28	PK	1
CN	1	PL	3
CZ	2	PT	6
DE	91	RO	2
DK	19	RU	8
ES	32	SD	1
FI	9	SE	19
FR	48	SG	1
GM	1	SI	4
GR	10	SK	1
HK	5	TH	4
HU	5	TR	5
IE	6	TW	4
IL	7	UG	1
IN	4	UK	79
IR	3	US	65
IT	23	VN	1
JP	7	WHO	2
KH	1	ZA	1

Report of the Chair of the Publications Committee

As Chair of the Publications Committee Marc Struelens reported on another very successful year for *CMI* according to all output criteria:

– In 2006 twelve regular issues were published with a total of 1266 pages (18% increase).
– In the same period nine supplements, including three academic, were published. They resulted in an income for the Society of EUR 106‘000.
– For the second time the ECCMID Abstract Book 2007 was published online and on CD only.
– The circulation increased by 12% to 5529 library sites.
– The readership grew by 43% to 271‘209 article downloads.
– The impact factor increased by 3% to 2.679, ranking *CMI* among the best 20 journals in its field (excluding review journals).

In 2006 a new contract with the publisher was signed for the period 2007 – 2012. An option for open access upon publication is being offered to authors for a fee. In early 2007 the editorial policy of *CMI* was revised by more clearly defining the scope of our Journal and improving the transparency of decision making. The search for a new Editor-in-Chief 2009 – 2013 was concluded just prior to the Assembly: Didier Raoult from Marseille, France, agreed to take over and start managing new submissions in April 2008 and to publish the first issue under his leadership in January 2009.

ESCMID News appeared three times in 2006 with an enlarged scientific, educational and policy content.

Report of the President of the 17th ECCMID / 25th ICC 2007

Ragnar Norrby congratulated Bernhard Ruf on a remarkable achievement: already in the middle of the Congress it is clear to be a major success. The participation statistics presented by Bernhard Ruf are as follows:

– number of participants: 7552, thereof: 6389 delegates, 263 accompanying persons, 900 exhibitors‘ personnel (estimate)
– best countries: DE, GR, UK, ES, US, FR, TR, NL
– exhibition: 101 exhibiting companies, 2511 m^2 net area
– press: 42 registered journalists, ten press releases.

According to Bernhard Ruf it is too early to say whether the co-operation between ESCMID and ISC in setting up this joint Congress was a good idea or not. This question needs careful evaluation after the Congress.

Report of the Chair of the 17th ECCMID / 25th ICC Programme Committee

Andreas Voss first thanked Bernhard Ruf and the ISC for an efficient and pleasant cooperation. He then presented the programme in numbers: abstracts received: 2915 (the largest ever) from 95 different countries. The most popular topics were resistance surveillance, non-molecular diagnostic laboratory methods and *in vitro* susceptibility testing & drug interaction. The review board had 250 experts! In 2007 the rejection rate and the number of oral presentations were again increased (figures for 2005 and 2006 in parentheses, respectively): abstracts rejected: 24.1% (14.6% and 18.9%), abstracts rejected + publication only: 37.1% (27.5% and 35.0%), oral presentations: 245 (166 and 200). The total number of speakers and chairs was 605. They came from 52 different countries (see Figure 1).

Approval of the Statutes

The proposed amendments to the Statutes were appended to the invitation for the Assembly of Members and published in ESCMID News 1-2007 as pointed out by Ragnar Norrby. Most of the changes were requested by the German authorities. They have either formal character or explain current procedures in more detail. A major change however is the enlargement of the elected Executive Committee by one member and the concomitant reduction of the number of co-opted members by one to only one member. In addition, a proposal to amend the Statutes shall in future require a two-thirds majority vote of the Executive Committee (previously simple majority) or a written request signed by at least 50 members of the Society who are at least in their second year of membership. Amendments to the Statutes shall in future be made by resolution of a two-thirds majority of members participating in a secret ballot.

Figure 2:
Vote to approve the changes to the statutes at the Annual Assembly of Members

Referring to the proposed amendments Ragnar Norrby suggested to drop the strict requirement of informing non-voting members about the Assembly since we have no direct access to them (members of affiliated societies and ESCMID Study Groups). The following sentence in §4, Assembly of Members, should thus be removed: The associated and affiliated members, if they are not regular members of ESCMID, shall be informed of the Assembly of Members by the chairpersons of the Study Groups or presidents of the affiliated societies.

There was no request for further information or discussion. Ragnar Norrby thus asked for a hand vote of approval of the revised Statutes as explained above. There was unanimous consent without dissenting votes or abstention (Figure 2).

Proposal for amendment of the Statutes by Pramod Shah, Germany
Ragnar Norrby referred to the proposal by Pramod Shah regarding nomination of candidates for the Executive Committee elections by members, which was appended to the invitation to the Assembly of Members. He pointed out that the Executive Committee is in principle positive about the proposal but cannot ask for a vote since amendments to the Statues require a written request signed by at least 50 members. This quorum was not reached. He therefore proposed to submit a slightly modified proposition for approval to the Assembly of Members 2008. The amendment would thus come into force in due time for the next election. Pramod Shah agreed with this procedure.

Formal approval of the actions of the Executive Committee
Ragnar Norrby asked for a hand vote to approve the 2006 exercises of the Executive Committee. This was approved unanimously.

Other business
Ragnar Norrby used the opportunity to thank Patrick Francioli, who was unable to attend due to obligations at his University, for his many contributions to the Society, especially as a long-standing and most successful ECCMID Programme Director. It was during his tenure that ECCMID evolved to the major European congress in the infection field. We must be thankful to him for this achievement, which was based on hard work and expertise (applause).

The other highly merited member of the Executive Committee, who has reached the end of his career according to the Statutes, is Marc Struelens. He joined the Executive in October 1997 as Scientific Affairs Officer and served as President-elect, President and Past President from April 2001 to 2007. He has left his marks with the development of European Affairs as an ESCMID portfolio. Marc Struelens, who has carried many burdens, was then given another one by Ragnar Norrby: a hiking rucksack for his next holidays (applause).

There was no further request to speak.

Inauguration of the new President
Ragnar Norrby as acting President handed over the gavel to Giuseppe Cornaglia, the incoming President, and wished him success and satisfaction in his new responsibility.
Giuseppe Cornaglia thanked Ragnar Norrby for serving the Society over the past years with equilibrium and prudence. He expressed his gratitude for inheriting from his predecessors a healthy and wealthy Society which will allow him to build on a solid foundation in further developing the portfolio of ESCMID's activities and its structure of operation. As an outlook to his term he referred to the 25th anniversary of the Society to be celebrated at the 18th ECCMID 2008 in Barcelona. This occasion will be an excellent opportunity to reflect on our mission and achievements.

Before closing the Assembly Bernhard Ruf passed on the 'challenge cup', which is a silver plate with the engraved ESCMID logo and a list of all ECCMID venues since 1983 to Fernando Baquero, the 18th ECCMID President. With a smile he wished him much work not without mentioning that he will be supported by a wonderful team.

Close of the meeting
Ragnar Norrby thanked the members for attending. He adjourned the meeting at 19:00 h.

Basel, 15 July 2007, signed,

S. Ragnar Norrby
President

Patrick Francioli
Secretary General

Peter Schoch
Managing Director

Your Involvement Is Welcome

Call for Images

From the Editors

ESCMID is seeking attractive pictures to be used in our printed matter and on the website. Two types of images are sought:

– microbiological images relevant to infections in humans (bacteria, viruses, fungi and parasites). This includes images taken with all types of optics and methods such as phase contrast, darkfield, Normarski, differential interference contrast, epifluorescence, laser scanning confocal microscopy (LSCM), electron micrographs and scanning electron micrographs.
– laboratory and clinical images. These pictures should show typical workplace situations in professional surroundings relevant to ESCMID and be highly aesthetic.

Images must be accompanied by a legend, which describes the important features of the picture. They must have a resolution of 300 pixel per inch and a total of at least 4.4 megapixel so as to be of print quality in A5 size. Images will be selected by the ESCMID Executive Office, and **compensation of EUR 100 will be paid upon acceptance**. We would also be very grateful to receive donated images.

Submitted material must be original work. ESCMID must be granted the exclusive copyright and the license to reproduce and publish the pictures in any ESCMID media worldwide. ESCMID on the other hand guarantees to always indicate the source upon reproduction "courtesy of …".

If you are interested in submitting an image, please contact Dianne White, dianne.white@escmid.org, Phone +41 61 686 7795. You will be supplied with a copyright form and upload platform information. We appreciate your help and look forward to receiving your contributions!

Call for Study Group Historical Information

From the Editors

The European Society of Clinical Microbiology and Infectious Diseases is seeking historical information about the evolution of the ESCMID Study Groups as part of a historical ESCMID account prepared by Ian Phillips, former ESCMID President, to commemorate ESCMID's 25th anniversary in Barcelona in 2008. Most needed is information concerning the initial start-up of the Study Groups. Anyone with material to contribute, which also includes anecdotes, stories, or pictures, should contact Ian Phillips at i3phillips@telefonica.net, Phone +34 952 22 67 92.

Extension of 2008 Awards Deadline

From the ESCMID Executive Committee

We would like to inform our readership that the deadlines for applying for the 2008 ESCMID awards have been extended from 1 October 2007 to 1 November 2007. This applies to the following awards:

– ESCMID Award for Excellence in Clinical Microbiology and Infectious Diseases
– ESCMID Young Investigator Awards for Research in Clinical Microbiology and Infectious Diseases
– ESCMID Research Grants
– ESCMID Training Fellowships
– ESCMID and bioMérieux Award for Advances in Clinical Microbiology

Please also note that this year ESCMID has expanded its awards, grants and fellowships programme:

– NEW! ESCMID Research Grants (up to EUR 20'000 per project)
– NEW! ESCMID Training Fellowships (up to EUR 9'600 per individual).

More information can be found on the ESCMID website (www.escmid.org/awards). We look forward to receiving your proposals!

Results of the Opinion Poll

From the ESCMID Executive Committee

This year 6389 delegates attended the ECCMID/ ICC 2007 in Munich. Thus, for the second consecutive year our annual congress had attendance figures of over 6000 participants, with a slight increase of 4.3% compared to ECCMID 2006 in Nice.

We are happy to report that 850 participants filled out the online opinion poll - an increase of 33% in comparison to last year - and that the feedback was generally positive with varying suggestions for improvement. Responses from all questions, except for those requiring a written response in prose, can be found on the ESCMID website, 'Opinion Poll'.

Most of the respondents (84%) seem to be satisfied with the balance between basic science and practical aspects of the scientific programme. However, there was a broad range of suggestions concerning the content, many of which focussed on a particular topic to be expanded upon. Some of the more frequent suggestions were: hepatitis, STD and HIV. More general topics to be enlarged included: virology, clinical parasitology, and especially the coverage of more practical aspects relating to diagnosis, prescribing and patient management. A significant number of respondents indicated the need for more state-of-the-art sessions dealing with the latest information concerning clinical or laboratory practice, with special emphasis on topics of immediate professional relevance. This, however, should not be at the expense of neglecting basic research. To fully respond to these requests would require shorter sessions or a prolonged meeting, two options that we would not implement without another opinion poll, which do seem very appealing. In general, the programme committee is diligently trying to accommodate these wishes in order to build a balanced and broad programme. Another problem, with no easy solution, is that of overlapping sessions, which delegates deemed to be of interest to the same target groups. Any programme featuring ten parallel sessions devoted to infection issues, although diverse, will necessarily have overlaps that prevent certain individuals from attending every session that they would like to attend.

Regarding the format of the sessions, many participants expressed their wish for more interaction, either as question-and-answer sessions after the talks or via an electronic voting system.

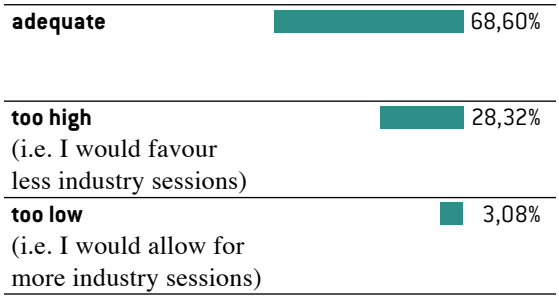
The timing of the early-morning meet-the-expert sessions was again objected to by some participants. We understand these complaints, especially in view of the rather long commute to the congress centre in Munich. We are pleased to inform you that the meet-the-expert sessions will be scheduled a bit later at ECCMID 2008 in Barcelona.

Many respondents criticised overcrowding of certain rooms that were apparently too small to accommodate all those who wanted to attend. While seats were still available in some rooms, but hard to reach, it is also clear that we must put more emphasis on selecting congress venues with larger lecture halls. Again, this is a task that may seem easier than it actually is, since the number of congress venues that offer ten permanent rooms with more than 350 seats each, is extremely limited.

While the majority was of the opinion that the quality of the poster session improved (54%) or remained satisfactory (42%) there were complaints that too many authors were not present to interact with the audience. We share this opinion and will continue to urge better compliance with the ECCMID guidelines for poster sessions.

One of the questions addressed the balance between integrated symposia proposed by the industry and those developed by the ECCMID Programme Committee:

Integrated symposia arranged by the industry were an important part of the congress. Based on our organisational guidelines we limited the number of industry sessions at any time to a maximum of 4 out of 10 parallel sessions. Do you consider this ratio:



The above result justifies the current policy. The collaboration with industry is crucial for ESCMID, and we are also of the opinion that health care companies are important stakeholders in medical progress. Integrated symposia are scientific events and the selection of topics and speakers is evaluated by the Programme Committee. Industry is aware of the fact that these symposia are neither platforms for presenting achievements nor marketing

events. This seems to be acknowledged by the delegates, since the industry-sponsored symposia are usually well attended.

With the question below we intended to determine whether participants would like to purchase a DVD including a major part of the ECCMID 2008 output.

At the 18th ECCMID 2008 we are considering to record all keynote lectures and symposia (audio streams and slide presentations) and make them available on DVD shortly after the congress. The DVD would also include transcripts of all spoken text. How much would you be prepared to pay for such a DVD?

EUR 0	36,26%
EUR 50	44,67%
EUR 100	14,45%
EUR 150	2,61%
EUR 200	1,66%
EUR 250	0,24%
EUR 300	0,00%
EUR 350	0,12%

Accordingly, next year we may consider a slight increase (EUR 10 – 30) in the registration fee. In return, all registered participants would be sent a DVD with the congress recordings a few weeks after the congress. This is the time needed to prepare the DVD, which also includes transcripts of the spoken text.

Unique to this year's congress were the many comments about an insufficient number of catering facilities within the congress building, their quality and price. We shall certainly investigate the possibility of offering lunch boxes as it has been suggested by some and ensure there are adequate food and beverages available in future.

Finally, many of those who responded to the opinion poll were on the whole very satisfied with the congress and expressed their thanks for the scientific quality of the programme and good organisation. This is encouraging for us but we do value all comments and feedback so as to make ECCMID a better congress year after year.

We look forward to your participation in the next ECCMID in Barcelona, 19th – 22nd April 2008.

Participant taking notes at the European Network Corner


Going home, hopefully returning next year

Photo Gallery

Listeners at one of the many oral sessions

As in the past the ESCMID Booth served as a meeting point and information centre for participants

Richard Moxton, ESCMID Excellence Awardee 2007, giving his lecture after receiving the award

Bernhard Ruf welcoming the participants at the opening ceremony

Heading off to the next session

A wide range of topics was offered in the oral communcations

More than 100 exhibitors presented a wide variety of information

Jazz band performing after the opening ceremony

CMI Update

Judith Crane, CMI Managing Editor
judith.crane@escmid.org

New Impact Factor

The current Impact Factor* for *CMI* (3.254), based on the number of citations during 2006 to articles published in *CMI* during 2004 and 2005, was announced in June and constitutes an ISI ranking of 15/47 among journals specialising in infectious diseases and 24/88 among those specialising in microbiology, placing *CMI* in the top 30%. As a relatively new journal in the field, *CMI* has come a long way in five years and those of us involved look forward to continuing in the same direction.

(*) Readers who have not seen previous articles in ESCMID News or elsewhere concerning the details of calculating an Impact Factor are referred to: http://en.wikipedia.org/wiki/Impact_factor.

New Editor-in-Chief

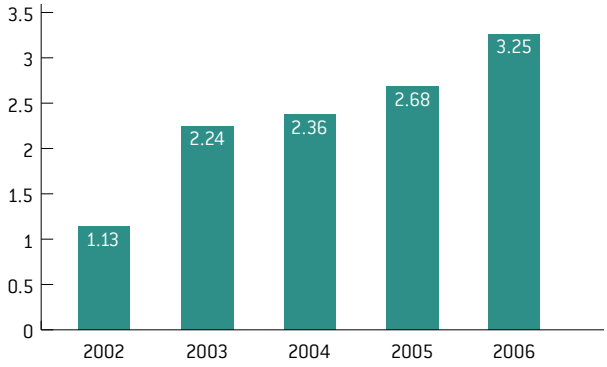
Didier Raoult has been appointed Editor-in-Chief, to assume responsibility as Kevin Towner completes a five-year term of office. A team of Associate Editors has been put in place (Franz Allerberger, Maiken Cavling Arundrup, Rafael Canton, Sally Cutler, Gilbert Greub, Dietrich Mack, Jean-Luc Mainardi, Paul Mical, Christoph Naber, Georgio Pappas, Panayotis Tassios) and an initial editorial meeting will take place in September 2007. A period of transition will begin in 2008, with the new team taking charge of all submissions in April and having responsibility for journal content as of January 2009. At that point, the current group of Editors will be maintained as an Editorial Board to work in conjunction with the newly appointed Associate Editors.

Synchronicity

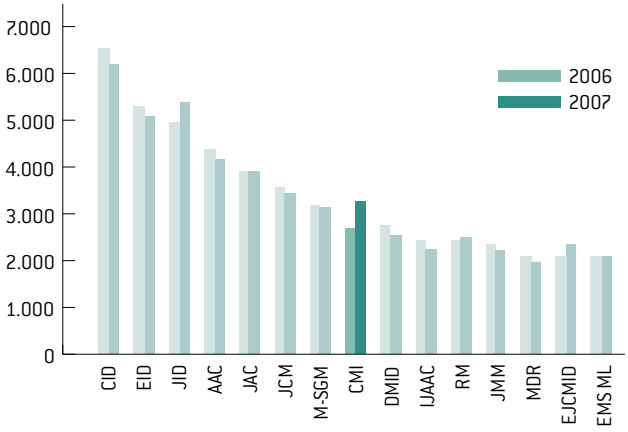
I have always wondered about commentaries and personal-opinion columns that move from subject to subject, somehow making a connection among apparently unrelated events or situations, and the explanation may simply be synchronicity. In the current *CMI* update there are only two (completely unrelated) pieces of information to report: a new Impact Factor and a new Editor-in-Chief. The two have no meaningful or causal relationship, one relating to the past and the other to the future, but a circumstancial connection came up.

The notion of the Impact Factor, and the formula for its calculation, are attributed to Eugene Garfield, founder of the Institute for Scientific Information (ISI), whom I have met on a number of occasions and who was kind enough to advise us in the early days prior to acquiring PubMed indexing for *CMI*. Didier Raoult has also made the acquaintance of Eugene Garfield, and several years ago invited him to assess the status of medical research in France and, on another occassion during his tenure as President, to evaluate the University of Marseilles. I continue to be curious about the origin of his unprecedented idea to engage the innovator of Impact Factors to evaluate an academic field and a particular institution, but apparently they were both useful exercises and may be a foreshadow of good ideas to come during Didier Raoult's tenure as Editor-in-Chief.

***CMI* Impact Factor Progression**



Comparative Impact Factors for a Selection of Journals



Journal titles (and dates of initiation)	
CID	Clinical Infectious Diseases (1992)
EID	Emerging Infectious Diseases (1995)
JID	The Journal of Infectious Diseases (1904)
AAC	Antimicrobial Agents and Chemotherapy (1961/1972)
JAC	The Journal of Antimicrobial Chemotherapy (1975)
JCM	Journal of Clinical Microbiology (1975)
M-SGM	Microbiology-Society for General Microbiology (1947/1994)
CMI	Clinical Microbiology and Infection (1995)
DMID	Diagnostic Microbiology and Infectious Disease (1983)
IJAA	International Journal of Antimicrobial Agents (1991)
RM	Research in Microbiology (1973 /1989)
JMM	Journal of Medical Microbiology (1968)
MDR	Microbial Drug Resistance (1995)
EJCMID	European Journal of Clinical Microbiology and Infectious Diseases (1982/1988)
FEMS ML	FEMS Microbiology Letters (1977)

Is an Independent Section of Clinical Microbiology Necessary?

John E. Degener, Convener of the Monovalent Microbiology Commission of the UEMS Section of Medical Biopathology
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Introduction

In 2002 Giuseppe Cornaglia described in ESCMID News how differently Medical or Clinical Microbiology (further to be defined as 'Clinical Microbiology') is positioned as a medical specialty in European countries (1). A follow up publication in the ESCMID News in 2005, written by Elisabeth Nagy, dealt with the status of Clinical Microbiology as a full speciality or subspecialty in Europe (2).

It was almost 50 years ago in 1958, when the medical associations of the six Member States of the young European Economic Community (EEC) formed the European Union of Medical Specialists or Union Européenne des Médecins Spécialistes (UEMS). The UEMS is a non-profit organisation aiming to promote the professional interests of medical specialists. Over the years the UEMS has developed into a lobby organisation working in the European Parliament, in addition to its many other activities such as the specialty harmonisation, training and continuous medical education (CME).

At the start of the UEMS it was decided that there is no commonly recognised mono-specialty of Clinical Microbiology (3). At that time full specialist training in Clinical Microbiology existed in Germany, Italy and the Netherlands only, while in the three other states France, Belgium and Luxembourg Clinical Microbiology was not registered at all or was only part of a broader polyvalent laboratory training. More countries joined the EEC: Denmark, Ireland and the United Kingdom in 1973 and Greece, Spain and Portugal between 1981 and 1986. This, however, did not improve the position of Clinical Microbiology substantially, since only Spain recognised the mono-specialty. After the Treaty of Maastricht in 1992 the EEC developed into the larger European Union (EU) and between 2004 and 2007 Austria, Cyprus, the Czech Republic, Bulgaria, Estonia, Finland, Hungary, Latvia, Lithuania, Malta, Poland, Romania, Slovenia, Slovakia, and Sweden became members of the European Union, bringing the number of Member States up to the present 27. Of the 15 new Member States, all but two recognise Clinical Microbiology as an independent specialty, which significantly increases the proportion of countries within the EU recognising Clinical Microbiology to 63% (17 out of 27). More relevant, however, for the current discussion is the analysis among the members of UEMS. Of the full members, which include the non-EU countries Iceland, Norway, Switzerland but not the EU countries Bulgaria, Lithuania and Romania, a total of 20 out of 27 countries recognise Clinical Microbiology as independent specialty (see Table). In nearly three-quarters of the countries, there is a discrepancy between the national status and the status at the European level.

The members of UEMS are the national medical associations. They are qualified to send delegates to the UEMS Council. The main goal of the UEMS is promoting the free movement of medical professionals within Europe, which is in line with the EU Doctors Directive (4). However, there are remarkable differences in the way medical specialties are dealing with training and practice. This may conflict with the acceptance of foreign colleagues by national professional communities, even when they have been trained in an EU Member State and may well be the case for Clinical Microbiology. The UEMS delegates should work on recommendations to solve such problems in a pro-active way.

Thus in recent years the European theatre has changed drastically for Clinical Microbiology. It is now time to reconsider the present position of the specialty of Clinical Microbiology. The argument as to why a firmer position of Clinical Microbiology as a full specialty is needed shall be presented in this article.

The position of Clinical Microbiology in the UEMS

When Clinical Microbiology was not yet represented as a full specialty in the majority of the former EEC member countries it was decided to consider Laboratory Medicine as an umbrella for all diagnostic- and laboratory-related specialties and for that purpose a specialist Section of Medical Biopathology was established among the various specialist Boards and Sections of the UEMS. To cover the interests of the various laboratory specialties, Commissions for Monovalent Microbiology (CMM), Pathology, Clinical Chemistry, Haematology & Transfusion, Immunology and Polyvalent Laboratory Medicine were included in the Section of Medical Biopathology. Delegates from countries where the monovalent specialties are combined and trained in a concise programme at the end of which one becomes registered as a polyvalent specialist, have had a strong influence on the decision to create the umbrella structure and microbiology is considered as a subspecialty.

The European Specialist Sections and Boards are one of the UEMS cornerstones. In the Specialist Sections two delegates per national monospe-

References

1. Cornaglia G. The present status of Clinical Microbiology in Europe. / ESCMID News 2002 / 3: 14 -17

2. Nagy E. / Revised UEMS core curriculum for specialisation in Clinical Microbiology / ESCMID News 2005 / 3: 10

3. www.uems.net

4. www.cpme.be/policy.php

cialist association can be nominated (see Figure). In the Sections these delegates discuss professional, training and scientific affairs during regular meetings. Another cornerstone is the UEMS Council. In the Council the National Medical Associations are represented by two delegates per country and plenary decisions are taken on general European specialist affairs. The Council meets with delegates from the monospecialist UEMS Boards and Sections on a regular basis. From this structure it is clear that not Clinical Microbiology but the umbrella Section of Medical Biopathology, which explicitly is regarded as a UEMS monospecialty, is visible only. However, Medical Biopathology is not a well understood concept in many European countries.

When the UEMS was founded, the status of the monovalent commissions subordinate to the Section of Medical Biopathology was quite acceptable. For instance, in the Netherlands the official professional organisation for clinical microbiologists was the Society for Specialists in Laboratory Medicine, in which the specialties of Clinical Chemistry and Clinical Microbiology were united. Only in 1992 did the two specialties split and create their own monovalent professional societies. Furthermore, the EU was generally not very visible for medical specialists and the significance of the UEMS had still to be illustrated for the profession.

How does the CMM in the UEMS Section of Medical Biopathology work?

At present delegates from 13 only different Member States and from Turkey are participating actively in the CMM. These delegates must be appointed by their respective national scientific microbiological societies and need the approval of their National Medical Associations. The reason for this under-representation of clinical microbiologistsconsidering the number of European countries that recognise the specialty, may be the rule that a single country can send no more than two delegates to the Section. These delegates may thus well be representatives for other laboratory specialties and not for microbiology.

The CMM selects a convener and secretary. The activities of the CMM are reported during the plenary meeting of the Board and Section of Medical Biopathology, which takes place twice per year. The main activities of the CMM focus on the training in the specialty of Clinical Microbiology and the evaluation of continuous medical education programmes across Europe. Approval of proposals for CME accreditation is communicated with the European Accreditation Council for CME (EACCME), the third cornerstone of the UEMS. At the moment there is a debate on the requirements for polyvalent specialists working for many years in Clinical Microbiology laboratories to become recognised as monovalent clinical microbiologists. The core curriculum for training of clinical microbiologists (2), which has been developed by the CMM over the years, may offer a tool to set the criteria for required additional training, when such requests are made. For a more detailed description of the activities during training, a logbook has been developed. After fulfilment of the required training period of at least five years and three years of practice, the clinical microbiologist qualifies for the fellowship of the European Board of Medical Biopathology, which may facilitate the recognition as a professional specialist in- and outside the EU Member States (see UEMS website (3), go to Sections - Medical Biopathology - Board).

The meetings of the Section of Medical Biopathology are prepared and organised by a secretariat and administratively supported by the Portuguese Medical Association (Ordem dos Medicos, Lisbon).

Regarding the discussion on the recognition of Clinical Microbiology as a full monospecialty and the creation of an independent UEMS Section, it should be emphasised that the CMM profits significantly from the secretarial and administrative support by the Section of Medical Biopathology and that it shares a number of professional interests with the other monovalent and polyvalent specialist commissions, e.g. the microbiology training in the polyvalent specialty, problem solving in logistics, administrative procedures and quality control in laboratory medicine in general.

How to become an independent UEMS Section of Clinical Microbiology?

During the ECCMID 2006 in Nice it appeared that there was full support for an independent Section of Clinical Microbiology by the presidents of the different national societies for Clinical Microbiology, who convened during the ESCMID European Council Meeting on the subject. According to the UEMS statutes, article X.1, a Section can be created, when at least one-third of the Member States recognise the specific specialty as an independent specialty. Clinical Microbiology clearly fulfils this criterion. An application should be made by at least one of the delegates from a National Medical Association that is recognised and represented in the UEMS Council. The Council then will perform an investigation on the legitimacy of the application. However, in the case of Clinical Microbiology, the specialty is already represented under the umbrella of the Section of Medical Biopathology and the Council will certainly be prepared to listen to the pro and con arguments by this Section.

In contrast to the clinical microbiologists represented in the CMM, the Section in general is not in favour of a full separation of CMM and the creation of an independent Section. The polyvalent specialists fear that they will fail to maintain recognition for the microbiology part of their activities. This concern became apparent during attempts to differentiate and switch from polyvalent to monovalent specialties. Such undertakings are supported by the CMM in any case, as long as polyva-

lently-trained specialists meet the criteria which are defined in the UEMS Clinical Microbiology training programme. The interest for polyvalent-trained specialists to remain so, but also to be recognised in the monovalent fields, is said to have logistical as well as economical aspects. In countries with a highly scattered population, e.g. in Greece with its many islands, it is simply not possible to have all monovalent specialties represented in the many different health care centres. The presence of a polyvalent specialty, responsible for all different aspects of laboratory medicine, is a solution to this problem. Furthermore, in a number of European countries, a process of centralisation for purposes of efficacy and budgetary control has taken place. Such laboratories may be administrated by polyvalent specialists, among whom differentiation in the monovalent fields may take place. The background of the existing situations in a number of European countries and new developments in laboratory health care should be understood and not be neglected. Cooperation between polyvalent and monovalent specialties should be continued.

The proposal of the Section of Medical Biopathology and the CMM

A proposal has been made by the CMM and the Section of Medical Biopathology to create a Section of Clinical Microbiology and at the same time to establish a Federation of Specialties of Laboratory Medicine. In this Federation the Section of Clinical Microbiology as well as the Section of Medical Biopathology would participate. The latter may even split up into different independent Sections, assuming a quorum can be reached. The Section of Clinical Microbiology could organise its own meetings, preferably one meeting in conjunction with ECCMID and another meeting in federative liaison with the other monovalent and polyvalent specialties of laboratory medicine. Organising Section meetings in conjunction with ECCMID will be more cost effective. Another advantage of an independent Section is that all medical associations of UEMS Member States can be requested to send a clinical microbiologist as a delegate, apart from the laboratory specialists represented in the Medical Biopathology Section. This will strengthen the capacity of the new Section of Clinical Microbiology, which then will count 20 or even more delegates.

The Section can create its own Board to cover professional, scientific and training interests. Upon invitation by UEMS, the annual Council meeting can be attended by the presidents of Board and Section of Clinical Microbiology and, when necessary, issues concerning the specialty can be brought to the general attention. Until now that has not been possible because of the diverging interests of the different specialist commissions in the Section of Medical Biopathology.

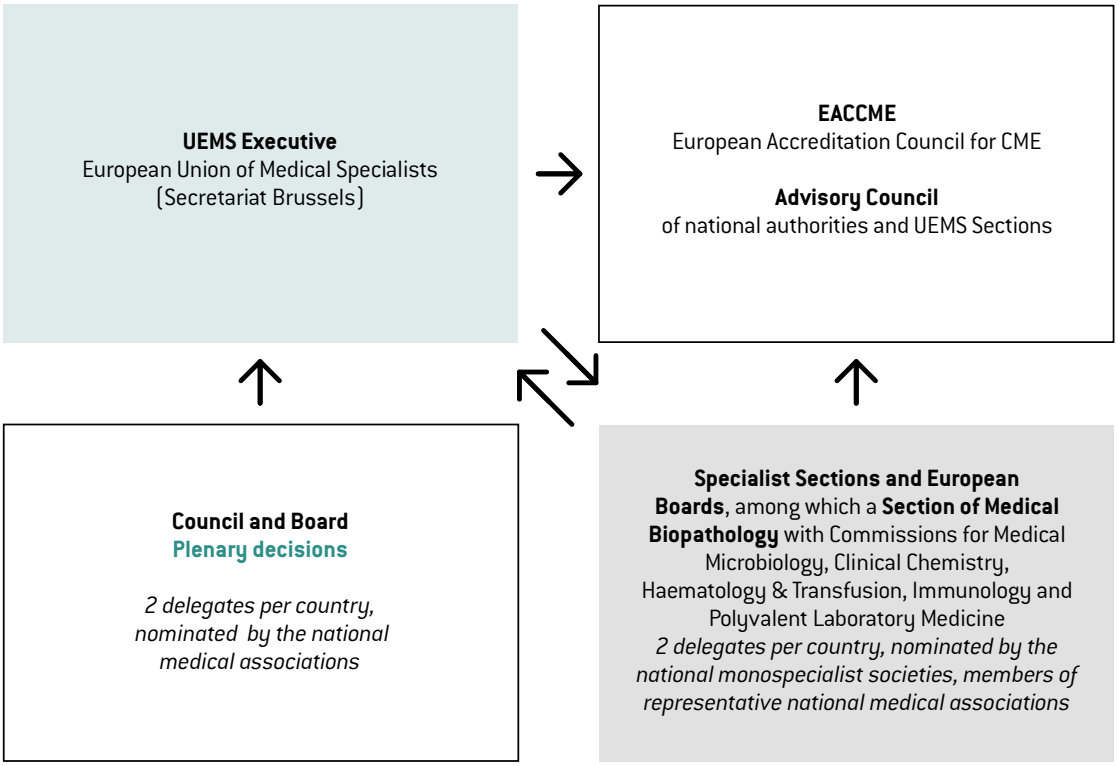

Figure: Structure and bodies of UEMS

Action to be taken and conclusion

Presently we can conclude that there is the legitimate wish of the monovalent Clinical Microbiology profession to become recognised as a full specialty. Through the European Society of Clinical Microbiology and Infectious Diseases (ESCMID) scientific issues are addressed. To lobby effectively for the interests of the specialty in the EU and to bring science as well as professional affairs and aspects of training and CME into the public attention, full recognition as an independent UEMS Section is needed. It is expected that the specialty will then become more visible on the European stage.

The case of the independent Section is under review by the UEMS Council. Informing delegates from the national medical associations represented in the UEMS Council on the role of Clinical Microbiology is necessary to make the ambition of creating a new Section a success. Therefore these national Council delegates need the information and the endorsement of the national societies for Clinical Microbiology in the different UEMS Member States. This process of lobbying is now proceeding and all parties involved should now be actively working on the issue.

In the meantime the Section of Medical Biopathology and its various commissions are concentrating, together with the UEMS Council, on how the interests of the different specialties in laboratory medicine can be covered in the best possible way. Bringing the different Sections together in a federative relationship may be an option.

Country	Member to UEMS	Member to EU	CM is Recognised as a Full Specialty
Albania	no	no	no
Armenia	no	no	yes
Austria	full	yes	yes
Azerbaijan	associate	no	yes
Belarus	no	no	no
Belgium	full	yes	no
Bosnia	no	no	yes
Bulgaria	associate	yes	yes
Croatia	associate	no	yes
Cyprus	full	yes	yes
Czech Republic	full	yes	yes
Denmark	full	yes	yes
Estonia	full	yes	no
Finland	full	yes	yes
France	full	yes	yes
Georgia	associate	no	yes
Germany	full	yes	yes
Greece	full	yes	no
Hungary	full	yes	yes
Iceland	full	no	yes
Ireland	full	yes	yes
Israel	associate	no	yes
Italy	full	yes	yes
Latvia	full	yes	no
Lithuania	no	yes	no
Luxembourg	full	yes	no
Macedonia	no	no	yes
Malta	full	yes	no
Moldavia	no	no	no
Netherlands	full	yes	yes
Norway	full	no	yes
Poland	full	yes	yes
Portugal	full	yes	no
Romania	associate	yes	no
Russia	no	no	yes
Serbia-Montenegro	no	no	no
Slovakia	full	yes	yes
Slovenia	full	yes	yes
Spain	full	yes	yes
Sweden	full	yes	yes
Switzerland	full	no	yes
Turkey	associate	no	yes
Ukraine	no	no	yes
United Kingdom	full	yes	yes
44 countries (without mini-states)	**27 UEMS members**	**27 EU countries**	**EU: 18/UEMS: 20/Europe: 31**

Table:
Clinical Microbiology as a Medical Specialty in Europe. In Europe a total of 31 countries recognise Clinical Microbiology as a full medical specialty. Eighteen of them belong to the European Union, 20 to the UEMS. This Table was compiled by ESCMID. If you have any additional feedback for this Table, please send it to info@escmid.org.

Turning Political Will Into Real Results

John Bowis, Member of the European Parliament (MEP), is Conservative and EPP-ED Group Spokesman on the European Parliament's Environment, Public Health and Food Safety Committee. He is also a Member of the Development Committee and a Vice-Chairman of the ACP-EU Joint Parliamentary Assembly.

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Buried amongst awareness and fundraising campaigns for cancer, heart disease, mental illness and the numerous other diseases affecting our society is a sobering statistic: one sixth of the world's population - one billion people - are affected by treatable diseases the world neglects.

Many of these neglected diseases may not have high levels of mortality but can be called poverty diseases because of they cause chronic illness, disability and deformity - making it difficult or impossible to work and contribute to the family and economy. As the WHO says: "Their impact is in the impaired growth and development of children, complications during pregnancy, disabling disfigurement, blindness, social stigma and reduced economic productivity and household incomes".

Diarrhoea, for instance, causes 2.2 million fatalities a year (more than the death toll of tuberculosis). Waterborne diseases, malnutrition (especially at birth and in infancy), parasitic worms and vectors all impact people in developing countries. The *Onchocerca volvulus* worm, for example, causes blindness, visual impairment and skin disease, infecting 37 million people; 95% of whom are in West and Central Africa. The current treatment, ivermectin, is limited as it only kills larvae (not adult worms), resistance is growing and some patients experience a severe adverse reaction. And then there are new threats and challenges such as multi-drug resistant strains of diseases such as tuberculosis.

In 2005 my Report for the European Parliament on Major and Neglected Diseases pointed out the chronic lack of investment in international and regional research in drugs for poverty-related diseases and called on the European Commission and others to end the poverty of fatalism by bringing neglected diseases in from the cold.

We must recognise that there have been welcome developments. We have developed better bed nets for malaria prevention; we have found combination therapies which are much more effective in treating malaria; we have targeted treatment of children for schistosomiasis; we have established simplified control strategies with inexpensive, safe and effective drugs for parasitical worm infections, costing as little as EUR 0.50 per person per year; we have ivermectin to treat onchocerciasis (though it has limitations noted above); we have started to forge the equitable North/South and Public/Private partnerships we need in science, clinical practice and trials with initiatives such as the European and Developing Countries Clinical Trials Partnership (EDCTP). EU-funded neglected disease research programmes, recognised as among the most effective devised by any international agency, have contributed to many of these successes.

The World Health Assembly agreed in May 2006 on setting up an intergovernmental working group to negotiate an action plan on research and development with a view to "securing an enhanced and sustainable basis for needs-driven, essential health R&D". The WHO and 25 partner organisations announced a new coordinated approach on neglected tropical diseases, including its Preventative Chemotherapy Strategy for parasitic worm infections. There is specific mention of neglected diseases in the European Union's Seventh Framework Programme for Research (FP7), adopted in December 2006, with EUR 6 billion over seven years for Specific International Cooperation Actions (SICAs).

Most of all, it appears there is renewed political will to do something about the neglected diseases of the developing world.

The challenge now is to sustain and step up the research and development efforts on the one hand and to address the other neglected area: strong health systems delivery, on the other hand.

A greater emphasis needs to be placed on the 'D' in the 'R&D' so that we can take the wealth of basic research and translate it into innovate treatments and new, easy-to-use, accurate and rapid diagnostic tests and monitoring tools - suited to the local needs and conditions of resource-poor countries. Integrated projects from identification of chemicals through the development phases of clin-

ical trials to registration and manufacture of new products have sadly been lacking in the past. There has been an over-reliance on existing technologies and interventions. Patients suffering from neglected diseases are still too often given archaic drugs, some of which are highly toxic, ineffective or difficult to administer.

Because there are limited viable markets for drugs for diseases that affect the poorest people in the world, the public private partnership model can harness the best of the public sector (in the 'R') with the best of the private sector (in the 'D').

The first of these partnerships - the Special Programme for Research and Training in Tropical Diseases (TDR) - was established in 1975, co-sponsored by UNICEF, UNDP, WHO and the World Bank, and funded by a wide range of agencies, governments (including EU Member States), foundations, NGOs and companies. It aims to help coordinate, support and influence global efforts to combat a range of major poverty diseases.

The TDR has been up and running for over 30 years. Yet of the 1'393 new drugs that reached the market between 1975 and 1999, only 13 were approved for tropical diseases. Of these 13, six were developed with TDR support. Less than 1% of new drugs placed on the market were developed for infectious tropical diseases.

In recent years we have seen more progress thanks to the establishment of more public development partnerships (PDPs) such as the Drugs for Neglected Diseases Initiative (DNDi), GAVI Alliance, Global Alliance for TB Drug Development (TB Alliance), Institute for One World Health, International AIDS Vaccine Initiative (IAVI), International Partnership for Microbicides (IPM), European Malaria Vaccine Initiative (EMVI), Medicines for Malaria Venture (MMV), Roll Back Malaria (RBM) Partnership and others. Numerous drug research projects are now underway: The DNDi alone has twenty projects including drugs in clinical development for African trypanosomiasis, leishmaniasis, Chagas' disease and malaria, and there is significant progress on vaccines in Edinburgh, Oxford and elsewhere.

We need a new sense of urgency to build on this work, to use this public-private model, support drug candidates through the development pipeline not only the initial research, and to expand the work to a broad range of diseases. The shared interest between developed and developing countries should not be forgotten. For example, work in controlling antimicrobial resistance and finding better antivirals and vaccines for influenza helps everyone, and research into neglected diseases can have positive spin-offs for the understanding of other diseases, for example, research into vaccines and immunity can enhance knowledge about allergic disorders that affect a growing number of people in Europe.

We cannot stop, however, at the funding and delivery of research and development. It is no use having new drugs, vaccines and equipment if there is no system for their delivery, administration and use on the ground. Half of all of medical equipment in developing countries is not in use. Health system infrastructure, including both human and institutional capacity, is absolutely critical to improving healthcare. In addition to the lack of diagnostic tools and drugs, the fight against disease and ill health is impeded by weak health systems, a crisis in health workforce numbers, and ineffective aid.

Health systems in many countries are starved of resources. The countries themselves will need to invest more from national budgets and spending on health should be recognised as part of good governance measures. The Abuja Declaration of 2001 set a target of 15% of national public expenditure to be dedicated to health, yet many developing countries are still woefully behind. The international community will need to complement country-level investments with secure, long-term financial support and technical support, including training of health workers at the local level.

Preventative measures and education about prevention must also form a central plank of health policies. Access to clean water and sanitation is the most effective way to deal with the menace of waterborne diseases. Routine immunisation should be the cornerstone of public health strategies to end the existing situation whereby more than 28 million children miss out on immunisation during their first year - leaving them vulnerable to infectious diseases such as measles and tetanus. Education about hygiene, safe sex, road safety and healthy lifestyles - including the risks of tobacco - are all very important.

We need vigilance, prevention, diagnosis, control, treatment and care, together with research and development. We need to motivate political leaders and ministries of health, development agencies and banks, public institutes and foundations, charities and philanthropic organisations, scientists and pharmaceutical companies to form an alliance for health.

Time and again we rehearse the bleak figures which show the global burden of disease. Time and again we are able to demonstrate that investments in good health pay economic and social dividends by reducing mortality, morbidity and disability. We now have the chance to provide the political backing and financial support to improve access to healthcare and medicines and tackle the neglected diseases of the developing world.

EASAC Report on Tackling Resistance in Europe

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As a third report in a series on strategic scientific issues in combating infectious diseases, the European Academies Science Advisory Council (EASAC) has recently published the document *Tackling antibacterial resistance in Europe*. This report was prompted by the awareness of the increasing impact that bacterial resistance to antibiotics has on the burden of infectious diseases in terms of morbidity, mortality and health care-associated costs. EASAC is formed by the national science academies of the European Union (EU) Member States to enable them to collaborate with each other in providing advice to European policy makers. Its views, based on the consensus opinion provided by Working Groups made by experts drawn from all EU countries, are independent of commercial and political bias. The main scope of this EASAC report was to identify European priorities for public health and innovation activities related to the crucial need of tackling the problem of antibacterial drug resistance, in order to discuss the contribution that can be made by the community scientific to inform evidence-based policy making in this area. The Working Group focussed on bacterial resistance as the priority problem, but acknowledged that resistance is becoming an important issue also for other infectious agents such as fungi, parasites and viruses.

When considering the major clinical challenges posed by bacterial resistance with a focus on the European scenario, it is evident that the EU is heavily affected by the ongoing resistance pandemic, although the impact may be considerably variable between Member States (largely explained by differences in antibiotic use and resistance control policies). Resistance affects all major bacterial pathogens, with the most serious problems encountered in *Staphylococcus aureus*, enterococci, pneumococci, and *Escherichia coli* and other Enterobacteriaceae, *Pseudomonas aeruginosa*, *Acinetobacter baumannii*, and *Mycobacterium tuberculosis*. In some cases, especially with *P. aeruginosa* and *Acinetobacter*, resistance may extend to all the available therapeutic agents (pan-drug resistant phenotypes) creating a worrisome situation reminiscent of the pre-antibiotic era. Moreover, bacterial resistance is no longer a problem restricted to health-care structures, but several resistant pathogens (e. g. methicillin-resistant *Staphylococcus aureus*, *Escherichia coli* producing extended-spectrum, β-lactamases) have also emerged in the community. In fact, the epidemiology of resistance evolves rapidly and drug-resistant bacteria can easily spread throughout the world by travelling people, animals and goods.

Major challenges and opportunities for policy development to tackle antibacterial resistance were identified by drawing on the findings of previous EASAC reports and by taking into account the recommendations previously made by other bodies and the research and surveillance efforts already underway in this area. Following this approach, the Working Group concurred with the view that a number of policies are expected to have an impact on antibacterial resistance in the relatively near future:

- increasing awareness on the problem to policy-makers, health care professionals and the general public by suitable communication.
- improving the coordination of surveillance and surveillance strategies on antibacterial resistance across the EU. In this area, ESCMID is playing a major role in coordinating resistance surveillance and antimicrobial susceptibility testing, and in harmonising clinical breakpoints at the EU level (the latter aspects specifically carried out by the European Committee on Antimicrobial Susceptibility Testing - EUCAST). The Working Group emphasised the need to consolidate these activities and to expand the effort to consider the issues for current and future methodologies across all the Member States and to progress opportunities for coordinating EU efforts with other similar international activities. Concerning surveillance strategies, the importance of resistance surveillance in commensal bacteria, which can act as reservoirs for resistance genes, was also underscored.
- prudent antibiotic use in human and veterinary medicine. While chronic use of sub-therapeutic doses of antibiotics for growth promotion has been banned in the EU since the end of 2005, the Working Group noted that it is important to verify the effective compliance with the ban, and that there is a strong need for evidence-based strategies also in the veterinary use of antibiotics.
- containing the spread of resistant strains in hospital and community settings by infection control measures that have proven effective in controlled studies.
- coordinating actions to improve the coherence

in policies, data handling and intervention strategies among all Member States.

However, in the opinion of the Working Group, the above policies alone should not be considered sufficient to tackle the problem of antibacterial resistance. There is also a strong need for commitment to additional efforts aimed at:

– strengthening the science base for research on antibacterial resistance
– supporting industry innovation in drug development.

Strengthening the science base for research on antibacterial resistance is a crucial step. Europe has a history of excellence in scientific research on infectious diseases, and the EU research has provided a remarkable contribution to current knowledge on antibacterial resistance, including resistance mechanisms and the evolution and dissemination of resistance genes. However, there is no room for complacency and, since this scientific area is rapidly developing, adequate support to sustain the EU research capacity is needed to maintain leadership. In this context, the Working Group emphasised the need to strengthen the European infrastructure for research on antibacterial drug resistance by a coherent integrated programme aiming at promoting scientific opportunities in this area and at reinforcing the research infrastructure, including the relevant teaching and training activities. These efforts are expected, in turn, to attract and support the private sector commitment to innovation.

Several priorities were identified by the Working Group, including: (i) research on the mechanisms and origin of resistance, and on the epidemiology, ecology, and dynamics of transmission of resistance genes; (ii) structural studies of key enzymes involved in resistance; (iii) research on the functions of conserved essential genes identified by functional genomics; (iv) exploitation of new technologies for identification and validation of new molecular targets and new drug discovery; (v) clinical research to evaluate the impact and outcome of infections; (vi) translation of new knowledge on resistance into novel solutions; (vi) improved and expanded training in this area; (vii) adding value to the medical microbiology infrastructure by integrating research and training activities in the clinical microbiology services; (viii) development of rapid diagnostics that are simple and inexpensive at point-of-care, to differentiate between bacterial and viral infections, to identify specific pathogens and resistance profiles, and to investigate susceptibility of individuals to infectious agents.

Concerning the selection of targets for novel therapeutic approaches, which is a key issue to overcoming antibacterial resistance, the Working Group summarised the requirements for a validated target for a broad-spectrum antibiotic and emphasised several strategic points. (i) New targets emerging from pathogen genomics research may provide the resources for a new era of antibiotic therapy. However, the complexity of antibacterial drug discovery should not be underestimated; in particular, serious difficulties have been encountered in improving on compound leads, and chemical libraries may not be sufficiently diverse. (ii) It is important not to over-value expectations from genome sequencing; many novel targets have already been identified and tested without yielding good results. Elucidation of target function and the development of assay methodology (with the exploration of target modulation *in vivo*) are essential for drug discovery. (iii) Metabolic pathways tend to make good targets for new antibiotics, but increasing attention must be given to alternative strategies that focus on host-pathogen relationships, virulence factors, or co-operative behaviour of microbial communities.

Supporting industry innovation in drug development, for both large pharmaceutical and smaller biotechnology companies, is another crucial step in tackling antibacterial resistance. Various factors have rendered antibacterial agents less attractive for companies than other drug classes, which led to the recent decline in antibacterial drug discovery and development programmes. In Europe, this trend has been amplified by a relative decline overall in the pharmaceutical sector performance, compared with the USA. The Working Group reviewed the conceptually distinct models of support measures that can be adopted by governments to reverse this decline, and felt that it would be possible to combine elements from each model to develop a broader strategy for support, applicable in the EU context, based on coordinated actions by legislative authorities (European Commission and Member States), regulatory authorities (EMEA), funding agencies (European Commission and Member States) and surveillance functions (ECDC). An array of the scientific issues that attract industry interest in academic research was also proposed, and the need to support academic research on antibacterial resistance and on new targets for antibiotics that can be of potential value to companies was specifically emphasised.

In conclusion, the main message of this EASAC report is that urgent action is needed to build/maintain an EU leadership position in this area, both short term - through coordinating antibacterial resistance surveillance, monitoring resistance trends, and containing the spread of highly virulent antibiotic-resistant strains - and longer term - through progressing the underpinning science to deliver innovative approaches to managing the problem of antibacterial resistance.

For the complete EASAC report please consult:
www.easac.org/displaypagedoc.asp?id=68

Innovating for Antibacterial Resistance

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Antibiotics are losing their effect at an alarming pace. Estimates from South Asia alone show that a young infant dies every second minute, as a direct consequence of treatment failure due to antibiotic resistance.(1) In European hospitals, methicillin-resistant *Staphylococcus aureus* (MRSA) and multidrug-resistant, Gram-negative bacteria are important causes of nosocomial infections. (2, 3) The public health consequences are severe. Without effective antibiotics, we risk rolling back major achievements of modern medicine, such as the successes of organ transplantation and certain types of cancer treatment, and the work towards improved child survival in the developing world is severely threatened.

Antibiotic resistance comes as no surprise. Already in 1945, Alexander Fleming warned in his Nobel speech that inappropriate use of antibiotics could lead to resistance problems. (4) Even earlier, microbiologist René Dubos predicted that bacterial resistance to antibiotics should be expected as a consequence of bacterial adaptation. (5) But we did not heed such warnings. Extensive overuse of antibiotics - abetted by the naïve reliance on the pharmaceutical industry to continuously provide new drugs when the old ones lose their effect - has led to the situation we see today.

As increasing resistance rates are reported from all parts of the world, (6) development of new antibiotics is steadily declining. More than a dozen new classes of antibiotics were developed in the 1930's through the 1960's, but since then, only two new classes have come to market. (7) Nor does the trend of declining innovation seem to be reversing. In a study of the pipeline of the top 15 pharmaceutical companies, only 1.6% of drugs in development (five out of 315) were antibacterials, none of which were for novel classes. (8) Results from a deeper analysis performed in 2005 of the entire industry were not encouraging, showing that most of the candidates targeted only Gram-positive bacteria, (9) leaving needs unmet for the increasing threat of multi-resistant, Gram-negative infections.

Fully combating antibiotic resistance requires a multi-tiered approach, including significantly improved use of antibiotics and increased monitoring to prevent and detect emerging resistance. In addition, new approaches are also urgently needed to stimulate innovation of new antibiotics before resistance overtakes all available treatment options.

The lack of antibacterial innovation stems from the low priority of antibiotics in private sector pharmaceutical research and development (R&D). In selecting therapeutic candidates for research, companies weigh costs of innovation with expected payoff of a successful drug. As an example, musculoskeletal drugs promise a potential return ten times that of an injectable antibiotic. (10) Short treatment length, high therapeutic competition, treatment guidelines which rightly discourage first-line use of new drugs, and the eventual emergence of resistance all contribute to the lower expected payoff for antibacterials. (10, 11)

New approaches to antibacterial innovation

With existing incentives, current levels of innovation are clearly inadequate, but some alternatives have been proposed to redress the dearth of therapeutic innovation and are summarised below. However, no matter how innovation is accelerated, the use of these new antibacterials must be safeguarded by regulations and practices that encourage prudent use. In addition, a gap analysis of the present pipeline *versus* current resistance patterns and trends should be performed, to give priority to the most urgently needed antibiotics before any public involvement is concerned.

Product development partnerships

Product development partnerships (PDPs) are arrangements between public organisations and private companies to develop drugs that have been neglected by the existing system of innovation. For instance, between 1974 and 1999, only (16) new drugs for tropical diseases were approved, around 1% of all approved drugs. (12) Currently, there are 63 neglected disease products in the pipeline, and the majority of these drugs are being developed under PDPs. (13) By combining the respective advantages of drug development from the public and private sectors, PDPs offer one potential model that might stimulate innovation where markets otherwise fail to meet public health priorities.

An emerging coalition to combat antibiotic resistance: www.reactgroup.org

Push mechanisms

Various proposals put forth for improving innovation for neglected diseases in developing countries may also apply to antibiotics. 'Push' mechanisms improve R&D by reducing the financial, transactional and time-intensive costs of the development process. Push mechanisms commonly include government grants and R&D tax subsidies, but more creative approaches are also possible. Public compound libraries might enable access to and screening of proprietary collections of compounds for antibacterial properties, increasing the probability of success of development. Upstream along the R&D pipeline, pooling of intellectual property can lower the transactional costs of cross-licensing, building blocks of knowledge or research tools essential for innovation. Downstream along the R&D pipeline, pooling can facilitate the development of fixed-dose drug combinations.

Pull mechanisms

'Pull' mechanisms create rewards for the products of R&D and may supplement or replace revenues in small or resource-poor markets. For instance, prize funds could provide a cash reward for the development of a product that meets certain therapeutic conditions, such as treatment of specific types of resistant bacteria. Similarly, advance market commitments (AMCs) create a fund that guarantees a certain price for drugs that meet therapeutic targets, provided there is a demand for the drug. A recent example is the pneumococcal vaccine AMC, where the AMC guarantees that it will pay an innovator a pre-determined rate (such as USD 14) for each vaccine that a low-income country decides to purchase at a set low price (such as USD 1). (14) An AMC makes up the difference, thereby providing additional financial incentive. It also enables adoption of superior products subsequently developed because the AMC only subsidises the vaccine purchased by countries, which presumably would be the best available.

Intellectual property inducements

Some proposals have suggested more conventional incentives, particularly intellectual property inducements. One related pair of incentives is patent extensions and marketing exclusivity. These arrangements would increase the anticipated revenue by lengthening the period of patent protection or of exclusivity over data submitted for drug registration. As antibiotics already have small markets and since resistance may reduce further the time that an antibacterial has value in the marketplace, these incentives are likely to do little to stimulate greater innovation for antibacterials. (15)

Despite these drawbacks, some persist in promoting stronger intellectual property as incentives. An example of such a proposal is wild-card patent exclusivity, where innovators of new antibiotics may transfer the grant of patent extension to a drug of their choice. (16) Wild-card patent exclusivity makes the most difference for companies that have blockbuster drugs in their portfolio to which this patent extension could be applied profitably. So this proposal might exacerbate further the mismatch between public health and private sector R&D priorities. Small pharmaceutical companies play a large role in antibacterial innovation, and many of these companies will not have other products to which to apply the wild-card exclusivity. Furthermore, this approach would not only be of little value to small companies, but would put them at a disadvantage compared to larger companies which have blockbuster drugs to leverage investment into antibacterial research. Wild–card patent exclusivity creates unpredictability among existing drug producers, which may have products developed for release pending imminent patent expiration, only to have the patent on that originator drug abruptly transferred from another product and extended. Finally, wild-card patent exclusivity displaces the burden of the cost of R&D onto another patient population at a price that is potentially much higher than the cost of directly financing antibacterial research.

Effective antibiotics – a dying species

Is public investment in antibiotic R&D the solution?

The European Center for Disease Control warns that there is no room for complacency in the fight against the emergence of resistant microbes,[17] but the views within Europe on how to approach this problem are divided. The policy options to combat antibiotic resistance presented from the Scientific Technological Options Assessment Panel (STOA) of the European Parliament urge directing research funding towards the containment of antibiotic resistance, rather than towards new drug leads. The report opines that it is a more cost-effective approach than increased public investment for antibiotic R&D. (18)

In contrast, a recently published report from the European Academies Science Advisory Council (EASAC) highlights the considerable potential for Europe to provide a leadership role in the efforts worldwide to promote anti-infective research and innovation, as well as translating these efforts into sustainable health benefits. (19 EASAC states that reducing inappropriate antibiotic use and improving surveillance of resistance patterns are not measures that alone are enough. This is a message echoed by the European Medicines Agency's (EMEA) final report from the EMEA/CHMP think-tank group on innovative drug development. Here it is also suggested that a gap analysis on the unmet medical needs for antibiotics and a priority list of pathogens could be performed, and more tailor-made requirements could be considered to guide the process. (20)

STOA states that we cannot wait any longer for the discovery of new antibiotic drugs and that antibiotic R&D should not be prioritised. EASAC and EMEA argue that mechanisms to stimulate research for new antibiotics are essential. But while the debate continues, so does the emergence of resistance and the decreasing effectiveness of our antibiotics. We can ill afford not to act decisively to improve upon current incentives for antibacterial R&D. ReAct — an emerging coalition to combat antibiotic resistance (www.reactgroup.org) - believes that the need for new antibiotics is more urgent than ever. Therefore, it is now time to think out of the box. If today's market cannot deliver what the public needs, we must envisage another approach that better engages both public and private sector resources to improve antibiotic innovation.

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The Economical Angle to Overcoming Antibiotic Resistance

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This article expresses the personal view of the author and not that of ESCMID.

The threat of antibiotic resistance and the current attempts to curb it

For several years now antibiotic resistance has hit the headlines of the lay press and appears on the agendas of political bodies. *The First European Communicable Disease Epidemiological Report* by the ECDC, which appeared in June 2007, calls microorganisms that have become resistant to antibiotics the most important health threat in Europe. In the European Union one hospitalised patient out of ten contracts a healthcare-associated infection, of which approximately 50‘000 die. There is no doubt that a substantial fraction of these deaths involves infection with resistant pathogens.

The numerous expert reports which have been written about antibiotic resistance and its genetic bases usually arrive at similar recommendations on how to limit or even curb its spread: improving awareness among physicians and patients, implementing better surveillance systems, fostering prudent use of antibiotics, improving hospital hygiene, developing novel and rapid diagnostics, investing in understanding the science base of resistance and supporting R&D of new antibiotics. Implementation of measures along these lines has often been slow and has met with limited success, especially concerning research into new antibiotics. This half-heartedness is ill-matched to the threat.

There is agreement that the proposed measures, single or combined, will not eliminate resistance, which is a natural phenomenon inherent to the microbial world and not restricted to medicine. This does not imply that the fight against resistance should be abandoned – on the contrary.

The spread of infection by resistant pathogens is aggravated by the almost complete absence of new antibiotics which are not vulnerable to current resistance mechanisms. Most of the few new additions to the medical armamentarium in the past 20 years were structural analogues of existing antibiotics against which resistance developed rather rapidly. The introduction of antibiotics with novel chemical structures into clinical practice would thus be of utmost importance to overcome antibiotic resistance. But this, unfortunately, is not what is going to happen in the near future.

The way new drugs are found, developed and introduced into medical practice

In the Western world there is a societal agreement that the supply of medicines is the business of private industry. Only the early phases of drug discovery: the elucidation of novel therapeutic concepts, the identification of novel drug targets, and the search and characterisation of lead compounds can also be achieved by academic institutions and small biotech companies. Later steps in the development process, i.e. the medical chemistry required to turn a lead compound into a drug with the appropriate pharmacokinetic and pharmacodynamic profile, broad pharmacological characterisation in dozens of tests, preclinical investigations (kinetics, metabolism, toxicology, galenical and chemical process development, etc.), IND (Investigational New Drug) application, clinical development (safety and efficacy) and NDA filing, can only be handled by large internationally-operating pharmaceutical companies. It is estimated that the drug development process from drug discovery to NDA approval costs, on average, some 800 Mio USD. These costs explain why new and innovative medicines can only be provided by large pharmaceutical companies operating worldwide. There are simply no other institutions that can bear the risk and sustain the financial and organisational capacity and the knowledge to master the 12-year process from a lead compound to an approved and marketable drug.

Why is the antibiotics development pipeline almost dry?

Many large pharmaceutical companies, with a few notable exceptions, have largely disinvested their antibiotic R&D in recent years for the simple reason that the prospective sales revenues of new antibiotics do not cover the R&D costs. Not only are infectious diseases typically acute conditions requiring short treatments with an effective drug for only a short period, the development of resistance itself limits the life cycle of new compounds. The prescription of new drugs might even be restricted by the health authorities to one or a few indications in order to reduce the selection pressure involved in the development of resistance. These and other reasons are making it more and more difficult for the research-oriented pharmaceutical industry to turn new antibiotics into an interesting business. The lack of innovation in the field of antibiotics and the health burden of resistance are thus, at least partially, the consequence of absent economical incentives for the pharmaceutical industry, which

need to be restored by a more strict application of sound economical principles.

The issue is restoring the profitability of novel antibiotics

The pharmaceutical market is highly regulated. This concerns not only the required demonstration of efficacy and safety but also the price setting of prescription drugs. Since, in most countries, the health costs have been exploding in recent years the prices of old and new drugs were brought into the political arena; pharmaceutical prices are negotiated prices and are not created by free market forces. Prominent victims of this policy are new and innovative antibiotics. If R&D for new antibiotics is again to become a seminal option for the pharmaceutical industry we must accept prices which might be significantly higher than of those granted recently for newly introduced antibiotics. It is common wisdom that everything has its price. This applies also to drugs. If prices were determined by market forces, many pharmaceutical companies with a long tradition in antibiotic R&D might consider reinvesting in this field. The revived competition between different market players would become a key element in price regulation. In view of the threat of falling back into the pre-antibiotic age and the death toll due to resistance, accepting higher, even much higher, prices for innovative antibiotics should be a political and ethical imperative. An important angle in overcoming resistance is thus an economical one. It is often overlooked and deserves better advocacy in the current debate on antibiotic resistance, especially on the part of commercially neutral parties.

Affiliated Society Portrait

The Czech Society for Infectious Diseases of the Purkyne Czech Medical Association

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The Czech Medical Association of JE Purkyne was established in 1952, but the well-regarded Czech scientist, Jan Evangelista Purkyne, already provided inspiration for the Association in 1862. Purkyne founded the Prague Medical Club in 1862 for medical doctors in different branches. Its statutes were approved by Emperor Franz-Joseph.

After the Second World War there was a great interest in infectious diseases both in the general and medical population. Incidence of typhoid fever, polio and diarrhoeal diseases showed that it was necessary to create separate departments in hospitals to take care of such patients. The high incidence of infectious diseases also influenced education at different medical schools, mostly at the Charles University in Prague but also at universities in Brno and Hradec Kralove.

The Czech Society for Infectious Diseases (CSID) was established in the year 1956 by heads of existing departments of infectious diseases in Prague, Brno and Hradec Kralove and at that time had about 150 members. Currently our society has about 400 members.

The CSID is administered by an elected Executive Committee, which has 13 members. The functions in the Committee include: Chairperson (Prof. Marie Stankova), Deputy Chairman (Petr Kümpel, MD) and Scientific Secretary (Jan Galsky, MD, PhD) and each region of the Czech Republic has its own deputy. The next election to the Executive Committee will be performed during the summer months of 2007.

CSID's main tasks include:

- representing the specialty of Infectious Diseases nationally, especially to the Ministry of Health or to other medical societies
- representing the specialty internationally especially to ESCMID and to ISID
- defending and protecting the integrity and interests of the specialty
- coordinating the development of the branch in terms of education or research
- advising Czech grant agencies for research priority areas.

The Section for Travel and Tropical Medicine is part of the CSID, which has about 200 members and is also governed by the Executive Committee.

CSID organises together with the Society for Microbiology and Epidemiology monthly educational meetings in Prague, which are visited by a great number of medical doctors from all over the country. Every year it also organises bilateral congresses on infectious diseases together with the Slovak Society of Infectious Diseases, which are alternately held in the Czech Republic and the Slovak Republic. The seminar that CSID organises every May for heads of infectious departments from the entire Czech Republic has proved to be very fruitful. CSID also participated in organising the 14th ECCMID in Prague in 2004.

Since 1994 CSID publishes together with the Society for Microbiology and Epidemiology and Society for Medical Microbiology the journal Clinical Microbiology and Infectious Diseases in Czech six times a year. This journal is indexed in Medline as *Klin Mikrobiol Infekc Lek*, where foreigner readers can read the abstracts in English.

Update on the Education and Training Programme

GRACE Network of Excellence

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Objectives

The GRACE Network of Excellence *Genomics to Combat Resistance against Antibiotics in Community-acquired LRTI in Europe* is funded for a period of five years by the European Union through its 6th Framework Programme of Research (FP6). Launched in March 2006, the project is divided into twelve Work Packages. WP12 aims at spreading knowledge, raising professional and public awareness and providing training on the containment of antimicrobial resistance in CA-LRTI, by incorporating new knowledge and competence developed in GRACE. In this WP12, ESCMID joins forces with the European Respiratory Society (ERS) constituting the WP12 Curriculum & Education Committee. The primary goal in this first 18 months has been to establish an education and training programme spanning the five years of the GRACE project and to deliver the first educational events and web-based resources.

Progress towards these objectives

The first tasks accomplished were the creation of a comprehensive Education and Training Curriculum and a Calendar of Educational Events, which will be published step-by-step on the GRACE website (www.grace-lrti.org). The Curriculum was produced and will continue to be revised with input from all other GRACE WP Leaders. The first Postgraduate Course (PGC) derived from this Curriculum was delivered on 1 September 2006 in Munich in conjunction with the Annual ERS Congress; the second PGC was held on 30 – 31 March 2007 also in Munich preceding the ECCMID/ICC 2007. All GRACE educational events are recorded to broaden the dissemination of the knowledge. You can access the webcasts as well as additional material without charge either through the ESCMID Online Lecture Library (www.escmid.org/library) or through the newly-established GRACE e-learning portal (www.ersnet.org/grace). The next PGCs, will again be held in conjunction with the ERS and ESCMID annual congresses, will address the burden of antibiotic resistance in LRTI and the use of antibiotics in acute bronchitis and acute exacerbations of chronic bronchitis (for details, please see www.escmid.org/education). The first two stand-alone three-day GRACE Workshops will run sequentially and take place on 22 – 24 October 2007 in Prague, Czech Republic, under the title *Lower respiratory tract infections: current concepts in pathogenesis, microbiology, epidemiology and economic impact*. On the first day, the Workshops deal with *Host-pathogen interaction and the lung* (ERS/ESCMID) in shared plenary sessions. Hereby, the session *Research in progress* provides you with the latest research news from the GRACE network. On the second and the third days, Workshop 1 covers *the bacteriology of respiratory tract infections* (ESCMID) and Workshop 2 *the epidemiology and economic impact of common respiratory infections* (ERS). More information on the programme and registration can be found on the GRACE Workshop website (www.GRACE-workshop2007.org).

We are looking forward to a productive future and hope to see you at one of the various GRACE events.

Members of the GRACE WP12 Curriculum & Education Committee at one of the planning meetings. From left to right: Patricia Haslam (ERS School Chair), Theo Verheij (ESCMID Primary Care Representative and WP9 Leader), Henri Saenz (ESCMID Education and Science Manager), Roberto Cosentini (ERS School Committee Member), Francesco Blasi (ERS Head Assembly 10 and WP12 Co-Leader), Roger Finch (ESCMID and WP12 Co-Leader), and Silvia Lambercy (ERS Educational Activities Coordinator).

Scientific Report on 17th ECCMID / 25th ICC 2007

Michael Morgan, MD, FRCPath, Consultant Microbiologist, University Hospital of North Durham, UK, michael.morgan@cddah.nhs.uk

The first joint ECCMID / ICC to date took place in Munich, Germany's third largest city and the Bavarian capital from 31 March to 3 April 2007. Nestled to the north of the Bavarian Alps on the Isar River, it is home to over one million inhabitants and is surrounded by beautiful countryside. The weather was also kind to us, being mostly bright with only a fine drizzle on the last day of the congress. Following the introductory speeches, the opening ceremony was marked by a spectacular firework display followed by a buffet feast of Bavarian delicacies to the sound of a jazz band. The choice of good scientific sessions was staggering. However, like many of you, I have not yet mastered the art of being in more than one place at a given time. Hence, this review is, of necessity, limited by my subject preference as well as available publication space. Readers should refer to the ECCMID website for full details of the programme, authors and their affiliation, abstracts where available, etc. Readers should also refer to original publications by the authors to verify scientific content. Reports on presentations summing up *The Year in 2007 in Clinical Microbiology, Infectious Diseases and Infection Control* are not included here but will be published in the last issue of ESCMID News in 2007 together with any updates on these subjects since the ECCMID conference.

Infective endocarditis – time for change?

Official symposium

The role of combination therapy

P. Moreillon (Lausanne, CH)

There is no good evidence in the literature for gentamicin combination therapy in bacterial endocarditis (BE) or severe sepsis but synergy was shown in experimental models. There is good anecdotal response for the combination of rifampicin with flucloxacillin (in MSSA BE) or vancomycin (in MRSA BE). The latter combination is especially useful in prosthetic valve BE (PVBE), but antagonism was shown *in vitro*. In MRSA endocarditis, the combination of vancomycin + nafcillin or linezolid + etrapenem should be considered. The following current local recommendations: are given in the Table below.

Treatment options for infective endocarditis: new drugs for bad bugs?

R. Corey (Durham, US)

In the United States infections due to both hospital- and community-acquired methicillin-resistant *Staphylococcus aureus* (MRSA) are increasing rapidly in both frequency and severity. As a result new treatment options are badly needed. *Staphylococcus aureus* bacteraemia (BE) is complicated by endocarditis in 12% of cases. The incidence of *S. aureus* BE is 32% worldwide

Organism/Illness	**Antibiotic**	**Duration** (weeks)	**Evidence Level**
Viridans streptococci, penicillin sensitive	Penicillin G or Ceftriaxone + Gentamicin	4 2	1A 1B
Viridans streptococci, penicillin resistant or allergy; enterocooci	Vancomycin + Gentamicin	6	1B
MSSA penicillin allergy	Flucloxacillin + Gentamicin or Vancomycin	6 1 6	1A 1C 1B
MRSA	Vancomycin + Rifampicin + Gentamicin	all for 6-8 weeks	1B 1C 1C
PVBE	Flucloxacillin or Vancomycin followed by Ciprofloxacin + Rifampicin	2 long term	N/A

and that of MRSA 27%. *Staphylococcus epidermidis* only accounts for 9% of native valve endocarditis (NVBE), but is associated with high surgery, mortality and stroke rates. Vancomycin is associated with poor outcome in *S. aureus* BE, with relapses and secondary resistance being common. This is attributable to suboptimal dosing, poor penetration, slow bactericidal effect and reduced sensitivity. The failure rate is related to vancomycin MIC. There is not much data on teicoplanin but it is similar to vancomycin in terms of mode of action and efficacy. There is a small but gradual development of increasing resistance to vancomycin among MRSA. Alternative oral therapies such as clindamycin, cotrimoxazole and minocycline have a role in the treatment of community-acquired MRSA, an organism that has displaced 'traditional' MRSA in many venues. Newly-approved antibiotics effective against MRSA & VRE include linezolid (bacteriostatic, side-effects include optic neuritis and thrombocytopaenia), daptomycin and tigecycline. Antibiotics in development include dalbavancin, telavancin (lipoglycopeptide with both cell-wall plus cell-membrane activity), oritavancin, iclaprim, ceftobiprole and ceftaroline (the latter two being cephalosporins with MRSA activity)

Modern case management: what do we learn from the international collaboration on endocarditis?

B. Hoen (Besancon, FR)

S. aureus is now the most common cause of NVBE & PVBE in many countries, accounting for more than one-third of cases, more than one-third of those are hospital-acquired and more than one-third die. Embolic events and mortality is in excess of rates seen with viridans streptococci. CNS account for 20% of staphylococcal BE and 6.6% of NVBE. The aggressive nature of this infection is more related to that of *Staphylococcus aureus* rather than that of viridans streptococci. Enterococci account for 8.3% of NVBE and are associated with increasing age, nosocomial infection and co-morbidity. Early surgery has no survival benefit in PVBE except when combined with valve dehiscence.

Nosocomial urinary tract infection

Official symposium

Nosocomial urinary tract infections in urology sections. Data from the PEP and PEAP-studies

T. Bjerklund Johansen, M. Cek, K. Naber, et al. on behalf of the European Society for Infection in Urology

Two internet-based surveys were carried out in 2003 and 2004 respectively involving 152 hospitals and 6033 hospitalised urology patients screened for nosocomially-acquired urinary tract infections (NAUTI). The principal pathogen causing NAUTI was resistant to the most commonly used antibiotics in 60-90% of cases. The prevalence of asymptomatic bacteriuria was about 30% in most regions, while the prevalence of urosepsis varied between 2-27% in the regions studied. Urology sections should be encouraged to monitor the susceptibility of pathogens causing NAUTI in order to tailor a better empirical antibiotic treatment. The high prevalence of urosepsis after urological surgery is a cause of concern and urologists need to work out guidelines on when to take blood cultures after urological surgery to obtain a more uniform reporting of urosepsis between regions.

Update on prevention and infection control

A. Widmer (Basel, CH)

There has been very little new data in this field in the last 20 years. 50% of catheter-related bacteraemias occur after >1 week of catheterisation and the risk of bacteraemia increases by 3.6% per day. The urinary tract is the most common site of ESBL isolation. Unnecessary catheterisation should thus be avoided, e.g. in urinary incontinence without obstruction. Suprapubic catheters are associated with lower infection rates but more frequent mechanical complications. Antiseptic coated catheters (silver oxide, etc.) remain of unproven value and antibiotic coated ones may be associated with higher bacterial resistance rates. Cranberry juice has shown a dose-response relationship with reduced *E. coli* adherence to uro-epithelium (as well as a bonus reduction in gastric *H. pylori*!) but at least a half litre must be consumed each day (44.67 kcal/dl). Finally there is a need for routine assessment of: the need for catheterisation, proper maintenance and replacement interval. Intermittent catheterisation is a good alternative for the long-term catheterised, e.g. those with spinal injuries.

Treatment options in nosocomial urosepsis

F. Wagenlehner (Straubing, DE)

Urosepsis accounts for approximately 25% of all sepsis cases and may develop from a community- or nosocomial-acquired UTI. Although most antibiotics achieve high urinary concentration, there are several unique properties in complicated UTI, and thus in urosepsis that influence the activity of the antibiotic substances: i) The renal pharmacokinetics in unilateral and bilateral renal impairment and in unilateral and bilateral renal obstruction differ. ii) Varations in pH may influence the activity of certain antibiotics. iii) Biofilm infection is frequently found under these conditions, which may increase the MIC of the antimicrobials at the site of infection by several 100-folds. Antibiotic pharmacodynamic properties important here are not only the MIC and the plasma concentrations of the free (unbound) drug, but also the actual renal excretion and the urinary bactericidal activity. In the treatment of urosepsis it is important to achieve optimal exposure to antimicrobials both in plasma and in the urinary tract.

Clostridium difficile-associated disease: underdiagnosed, underreported, undertreated – how to overcome the challenges

Optimer symposium

CDAD epidemiology within Europe: a growing problem

E. Bouza (Madrid, ES), E. Kuijper (Leiden, NL), F. Barbut (Paris, FR), J. Brazier (Cardiff, UK)

CDAD, the most common form of hospital-acquired diarrhoea, affects more than 500'000 people in the United States and one out of every 1'000 patients hospitalised in Europe since 2005. The increased incidence and severity of the disease, coupled with an increase in treatment failures with standard therapies, is a growing concern among public health officials, infectious diseases physicians, gastroenterologists, microbiologists and epidemiologists.

In 2005, outbreaks of CDAD due to NAP1/PCR ribotype 027/toxinotype III were detected in two medium large hospitals in the Netherlands. Ed Kujiper and colleagues initiated a national surveillance which found that type 027 was present in 21 (18.3%) of 109 hospitals. Outbreaks were observed in ten hospitals and one nursing home. A comparison of patients with diarrhoea due to 027 with non-027 types revealed an association with older age and fluoroqinolone use. Although not significant, a trend was observed for a higher mortality, a more severe course and more recurrences than other types.

Emilio Bouza from the University of Madrid, Spain, also confirmed the association between CDAD and the use of quinolones (circa 50%) followed by cephalosporins (circa 30%).

Frédéric Barbut, at the Infection Control Unit at Hôpital Saint-Antoine in Paris, France, and his colleagues also confirmed the emergence and spread of the new epidemic strain *North America Phenotype 1/027* (NAP1/027) in France. In 2006, 37 outbreaks involving 37 healthcare facilities (438 cases) were reported. 71% of 198 isolates typed were 027. A national surveillance of CDAD will be launched in France in 2007 to complete the targeted surveillance of outbreak and severe CDAD.

Johnathan Brazier covered the UK perspective where over 75% of CDAD sampled in England are caused by PCR ribotypes 106, 027 and 001. Type 106 is virtually a UK-only strain. Type 027 has spread rapidly (>85 hospitals in England, four in Wales and one in Scotland but none in Northern Ireland yet).

Accurate diagnosis and testing for CDAD

E. Nagy (Szeged, HU)

The 'gold standard' for laboratory diagnosis is still isolation on CCFA medium. Toxinotyping is too complicated for routine laboratories. In sporadic cases, direct detection of toxin A+B by a suitable ELISA is adequate. In outbreaks, however, isolation of the strain and molecular typing is needed. Elisabeth Nagy, described how molecular typing methods help track the spread of *C. difficile* in hospitals and the community, including real-time PCR to detect the tcdB gene directly from faeces in symptomatic patients and asymptomatic carriers. Ribotyping and PFGE are also useful.

Clinical aspects and therapies in the new era of CDAD diseases

D. Gerding (Hines, US)

Patients prescribed metronidazole experienced poor response to therapy (13% failure) and high rates of recurrence (20%) following treatment. Treatment failure is not due to metronidazole resistance. Patients prescribed vancomycin, the only FDA approved product to treat CDAD, had lower failure rates (4%) but also experienced high rates of recurrence (19%) following treatment. Further, the time to resolution of diarrhoea is longer with metronidazole than vancomycin. New agents, such as antimicrobials and monoclonal antibodies, are under development and show promise for the treatment and prevention of CDAD. Among the promising therapies under evaluation are gastrointestinal flora-sparing antibiotics (difimicin, ramoplanin and rifaximin), toxin-binding monoclonal antibodies (tolevamer) and an absorbable antibiotic (nitazoxanide). Also under development is a toxin A&B toxoid vaccine (Acambis) and the use of non-toxogenic *C. difficile* as a biotherapeutic agent. Of the above, difimicin has shown good response and low recurrence rates in mild- to moderately-ill patients. Metronidazole is not inferior to vancomycin for treatment of first recurrence of CDAD. In patients with multiple recurrences, biotherapy is ineffective; immunoglobulin is moderately effective, while faecal reconstitution (via NG tube or colonoscope) is very effective. Sequential vancomycin (10 days) followed by rifaximin (14 days) for recurrent CDAD has shown promising results in a small uncontrolled trial. Patients with fulminant CDAD (toxic megacolon, perforation, etc.) may be treated with vancomycin PO + metronidazole IV and colectomy may be life-saving.

Economic costs of CDAD to the European healthcare system

P. Davey (Dundee, UK)

Finally, *C. difficile* results in significant economic consequences for hospitals, healthcare providers and patients, including increased costs and prolonged hospital stays. The association between CDAD and mortality, however, remains unproven after correction for co-morbidities. Peter Davey presented data showing that patients in the ICU who contracted CDAD stayed in ICU for 6.1 days as compared to 3 days for patients with no CDAD. ICU costs increased to USD 11'353 versus USD 6'028 for patients with no CDAD.

Tales of the unexpected: issues in infection management

AstraZeneca symposium

Right first time antibiotic treatment – new data from Europe

E. Ludwig (Budapest, HU)

Getting it right first time in antibiotic therapy minimises inadequate treatment in terms of timing, dose, duration and development of resistance. Aminoglycosides and vancomycin are peak level dependent (ideally 8-10xMIC) while beta-lactams and ciprofloxacin are dependent on time above MIC (ideally 40-60% of dosing interval), thus prolongation of length of infusion should deliver better activity. However, a loading dose must still be given and the stability of the drug over time should be taken into consideration. Taking the pharmacokinetics and pharmacodynamic properties of antibiotics into account (the PK/PD approach) is exemplified by the Monte Carlo simulation. This calculates the statistical probability of antibiotic effectiveness using

MIC data as well as kinetic parameters of a volunteer population. In a recent study, MICs for 180 non-duplicate P. aeruginosa isolates collected from 14 hospitals in Hungary were determined by E-test. A 5000-subject Monte Carlo simulation was performed to calculate the bactericidal cumulative fraction of response (CFR) for standard dosing regimens of cefepime, ceftazidime, ciprofloxacin, imipenem, meropenem and piperacillin/tazobactam. Ciprofloxacin achieved significantly lower bactericidal CFRs than any beta-lactam. Prolonged infusion regimens improved the CFR for cefepime, imipenem, meropenem and piperacillin/tazobactam. Overall, the highest CFR (88.1%) was achieved by a 3-h infusion of meropenem 2g q8h. However, in severe sepsis pathophysiological changes have a profound impact on PK and results cannot be predicted based on population data. Given the poor CFR predicted with standard dosage regimens against these isolates, it seems prudent to consider alternative dosage strategies such as increasing doses, frequencies or infusion times as well as combination therapy when empirically treating infections caused by *P. aeruginosa*. The 'getting it right first time' approach improves survival, results in shorter hospital / ICU stays and is thus cost-effective.

New clinical and molecular targets for antifungal therapy

Keynote lecture

D. Denning (Manchester, UK)

Asthma

Thunderstorm asthma was linked to *Alternaria* spp. Asthma deaths in Chicago, New Orleans, California and Canada were linked to high spore counts. Mouldy housing and exposure to *Cladosporium* spp. were also to blame. Pillows (especially old ones!) may harbour *Aspergillus* spp. and other fungi. Fungal and dog allergy is more common in those with severe asthma requiring hospital admission as severe asthmatics are more likely to have positive skin hypersensitivity to any of multiple different fungi.

SAFS

Severe asthma with fungal sensitisation is now recognised as a distinct entity. In Europe there are estimated to be 17 million adults with SAFS (20% severe) and 20-50% of severe asthmatics have SAFS. Itraconazole is significantly better than placebo in corticosteroid-dependent allergic bronchopulmonary aspergillosis (ABPA) with asthma, but prolonged therapy is required. In SAFS, a placebo-controlled randomised clinical trial showed itraconazole therapy greatly improves quality of life scores. 25% of patients with SAFS were sensitised to only one fungus, 75% to multiple fungi.

Discovering new drugs

Most new antifungal drug discoveries were based on experiments with *Candida* and *Saccharomyces* spp. F2G worked with *Aspergillus* spp. which is phylogenetically middle of the road but harder to work with than yeasts (www.f2g.com). Gene knockout experiments revealed 104 knockouts of essential genes affecting most cell functions. The selected knockout should probably be >50% dissimilar to human genes to avoid serious adverse events. Oxidoreductase 2031 seems to be a good candidate as it is absent in mammals but present in many other mycelial fungi and yeasts.

Tools for accelerating clinical development programme

We need better, faster, well studied, standardised diagnostics and biomarkers for response. There was recent FDA approval for *Aspergillus* galactomannan tests with a decreased cut-off. Also in the US, beta 1, 3-D-glucan testing of blood was introduced. A kit for diagnosis of *Aspergillus* and pneumocystis DNA being developed by Myconostica will shortly be available (www.myconostica.co.uk). Much additional information is available on the *Aspergillus* website (www.aspergillus.org.uk).

Building successful strategies to manage invasive fungal infections

Merck Sharp & Dohme symposium

Treatment strategies in the ICU: state-of-the-art

P. Eggiman (Lausanne, CH)

The incidence of candidaemia is 5-10/100,000, i.e. circa 10% of positive blood cultures and invasive infection is usually documented 1-2 weeks after hospital admission. Early treatment is essential as the mortality rises from 10% if Rx is given on day 1 to 40% if given on day 2 or later. Suitable agents include the echinocandins (parenteral only, 5-10% side-effects) and the azoles (oral & parenteral, 10-15% side-effects / interactions). The author uses the following algorithm to aid the choice of agent:

Action	fluconazole	caspofungin
Haemodynamics	Stable	Unstable
Neutropenia	No	Yes
Previous azoles	No	Yes
C. glabrata / *krusei* isolated	No	Yes

Differentiating colonisation from infection is still problematic; while 40-50% of patients may be colonised at a given time, only 2% develop infection. The risk factors for infection are presence of a CVC for >2 days, TPN, haemodialysis, major surgery, pancreatitis, systemic steroids and immunosuppression. These constitute indications for prophylaxis. Mouth colonisation is common one week before invasive infection.

Addressing the 'hotspots' in the management of invasive aspergillosis

D. Kontoyiannis (Houston, US)

Invasive aspergillosis is a frequently missed diagnosis, often only confirmed at post-mortem examination. However, the rate of autopsies has drastically decreased from 65% in 1989 to just 20% in 2003. Further, the sensitivity of bronchio-alveolar lavage (BAL) decreases time, from 35% on day 1 post-symptoms, to with 2% on day with 14. Multi-triazole resistance is increasing; there is no clonality amongst resistant strains but there is a unique mechanism of resistance (mutations in the cyp51A gene). Voriconazole exhibits inter-patient pharmacokinetic variability (non-linear pharmacokinetics) in up to 80% of patients on the PO dose. Posaconazole is a newer triazole promising more favourable pharmacokinetics and resistance profiles. The response

to caspofungin in febrile neutropenic patients is 44-56%, increasing to 86% in those with white cell recovery. As regards the polyenes, amphotericin B lipid complex (ABLC) is rapidly taken up by the reticulo-endothelial system while liposomal Amphotericin B (LAB) is not and thus has persistently higher blood levels. However, the significance of these findings is unclear. High dose LAB (10 mg/kg *vs* 3 mg/kg) for 14 days, followed by 3 mg/kg for a total of 12 weeks, showed no particular advantage over the lower dose. Few objective clinical data are available supporting the routine use of combination antifungal regimens in patients with invasive aspergillosis. However, combination therapy is warranted in disseminated aspergillosis in immunocompromised patients. The combination of triazoles + polyenes may be antagonistic and the author recommends voriconazole + caspofungin for amphotericin B failures. Surgery for the debulking of large lesions may be of value. The use of immune enhancement, e.g. with cytokines, is of unproven value. Early diagnosis and immune restoration together with newer drugs are the keys to success.

Treating the paediatric patient

A. Groll (Munster, DE)

Invasive candidiasis (in speaker's region) is roughly 50/50 *C. albicans* and non-albicans. The latter (especially *C. glabrata*) are more likely to be fluconazole resistant. Local primary therapy for invasive candidiasis in children is a combination of amphotericin B + 5-fluorocytosine. Secondary or salvage therapy is voriconazole + caspofungin.

Invasive aspergillosis in children is caused in 80% of cases by *Aspergillus* spp. and 20% in other mycelial fungi. Of the latter *A. terreus* is resistant to Amphotericin B. Caspofungin is inactive against non-aspergillus / zygomycetes. In preliminary studies, caspofungin was associated with no serious adverse reactions in children. Dosing at 50 mg/m^2 achieves the target serum concentration of 1 μg/ml, while dosing at 1 mg/kg does not. The maximum dose is 70 mg / day. Children aged 2-11 have faster clearance than adults due to accelerated hepatic metabolism. In a recent retrospective study there was a 67% response amongst 62 patients with no drug-related discontinuation and side-effects were mainly GI symptoms.

Local primary therapy for invasive aspergillosis in children: voriconazole is associated with 71% survival at 3 months *vs* 58% with amphotericin B. However LAB is preferable in cases of prior azole therapy. In secondary or severe disease, combination therapy with voriconazole + caspofungin is recommended. Amphotericin B still has a role in cryptococcal meningitis and premature children.

Current trends in parasitology

Official symposium

Developments towards a malaria vaccine

R. Sauerwein (Nijmegen, NL)

Malaria kills three children every minute in Africa. It is responsible for 20% of 'all cause' mortality in children under five. It is further responsible for 40% of all hospital admissions and a USD 10-12 billion loss in Africa annually. Most severe disease is found in children under five and most deaths in those under eight years in endemic areas.

Vaccines can be categorised as follows:

1. Asexual blood-stage vaccines block merozoite invasion using an antibody directed against MSP-1 & AMA-1 antigens.
2. Transmission (Sporogony) blocking vaccines prevent fertilisation in the mosquito; directed against Pfs48/45, 230, 25 and 28 antigens.
3. Pre-erythrocytic vaccines generate an antibody response that will neutralise sporozoites and prevent them from invading the hepatocyte. The most advanced vaccine candidate is pre-erythrocytic and derived from the circumsporozoite protein (CSP) that is found at the surface of the sporozoite and of the infected hepatocyte. This candidate vaccine, RTS,S/AS02, developed by GSK and The Walter Reed Army Institute of Research (WRAIR) will enter Phase 3 during 2008 and comprises the antigenic C-terminus (amino acids 207–395) of the CSP from *P. falciparum* fused to the hepatitis B surface antigen and expressed in the form of virus-like particles in *Saccharomyces cerevisiae*. Recent field testing on 2022 children in Mozambique showed that efficacy of three doses of RTS,S/AS02 in preventing a first malaria attack in 1–4 year-old children was about 30%, with a 37% decrease in blood parasitaemia frequency at six months, and a 58% overall decrease of severe disease incidence. 18-month follow-up showed that there was durability of this protection (Alonso Pl et al. Lancet. 2005;366:2012-8).

In summary, there are 50 target antigens, 50-60 clinical trials, two-thirds pre-erythrocytic, one-third other, 90% are Phase 1 and none are in Phase 3 yet (www.who.int/vaccine_research/).

Novel solutions include:

1) Whole parasite immunisation: using irradiation-attenuated, metabolically-active sporozoites. It provides 90% protection in humans lasting over 10 months (Hoffman Sl et al. J Infect Dis. 2002;185:1155-64) but is technologically problematic.
2) Also new is a genetically attenuated parasite through gene deletion: P36p gene knockout (P36pKo) (Van Dijk MR et al, Proc Natl Acad Sci USA. 2005;102:12194-9).

Molecular diagnostics

Oral session

Full abstracts for this conference are available on the ESCMID website and only brief conclusions will be given here.

Characterisation of *Neisseria meningitidis* B causing invasive disease in the Czech Republic

P. Kriz, J. Kalmusova, M. Musilek, et al.
(Prague, CZ; Oslo, NO; Oxford, UK)

Detailed characterisation of *N. meningitidis* B isolates from invasive meningococcal disease in the Czech Republic in the period from 1993-2006 showed their high heterogeneity and low coverage by currently available vaccines.

Detection by DHPLC of 23S rDNA mutations responsible of clarithromycin resistance in *Helicobacter pylori*

C. Coulon, C. Lascols, S. Pissard, et al. (Créteil, FR)

Denaturing high performance liquid chromatography (DHPLC) method is a reliable way to detect 23S rDNA mutations predictive of clarithromycin resistance.

Comparison of a molecular screening method with traditional culture for the detection of *Salmonella* spp. and *Campylobacter jejuni* in faeces

R. de Boer, T. Schuurman, E. van Zanten, et al. (Groningen, NL)

The molecular screening method (MSM) has a great potential for rapid detection of *Salmonella* spp. and *C. jejuni* in feces. Time to generate final results for negative samples was reduced dramatically to less then 24 hours. Automation of the extraction and detection procedures will further speed up the process and improve standardisation of the MSM.

Staphylococci speciation and Panton-Valentine leukocidin Zetection by matrix-assisted laser desorption ionisation time-of-flight mass spectrometry

D. Dare, H. Li, H. Sutton, et al. (Manchester, UK; Nashville, US)

Matrix-assisted laser desorption ionisation time-of-flight (MALDI-TOF) mass spectrometry provides a rapid and relevant system for clinical identification of staphylococci. Detecting PVL protein directly from clinical isolates provides a bacterial identification system that is desirable in clinical diagnostic services. However, the database should be based on validated strains.

Development of a multiplex PCR assay for enterotoxigenic *Bacteroides fragilis* and detection of this emerging pathogen in cases of community-acquired diarrhoea in the UK

L.R. Macfarlane-Smith, K.G. Kerr, A.M. Snelling (Bradford, Harrogate, UK)

The multiplex PCR assay was highly specific for enterotoxigenic *B. fragilis* (ETBF) and allowed detection without the need for culture. This is the first report of ETBF in community-acquired diarrhoea in the UK. The distribution of isoforms in the clinical samples was similar to earlier reports from Europe, but the occurrence of two different *Bacteriodes fragilis* toxin (BFT) isoforms in a faecal sample has not been described before. The finding of ETBF in a high proportion (13%) of samples for which there was no other bacterial explanation for the diarrhoea merits further investigation of this pathogen.

Recently identified viruses contribute significantly to acute respiratory infections in children

A. Pierangeli, C. Scagnolari, S. Trombetti, et al. (Rome, IT)

Detection of the recently characterised metapneumovirus, coronaviruses NL63 and HKU1, and bocavirus contributed a significant proportion (17.5%) of all positive samples. This study is a confirming report of NL63 and hBoV circulation in Italy, reported in late 2006. Interestingly, bocavirus was a frequently detected respiratory agent and was associated with clinically important illnesses.

Implementation of a real-time RT-PCR assay to improve dianostics of dengue virus infections

A. Dumoulin, H.P. Marti, M. Panning, et al. (Basel, CH; Hamburg, DE)

There are four serotypes of dengue virus, serotype 1 being the most common and there is no cross-protection between strains. Viral load is higher in the early phase of infection before IgM production. A combination of serological and RT-PCR are required for rapid and reliable dengue virus diagnostics at all stages of infection.

RespiFinder-kit: simultaneous detection of 15 atypical viruses commonly involved in respiratory tract infections

M. Reijans, G. Dingemans, G. Simons (Maastricht, NL)

The RespiFinder-kit is based on a new multiplex PCR technology which enables simultaneous amplification of up to 40 fragments. The kit enables simultaneous detection of 15 viruses commonly involved in respiratory tract infections within 6 hours and with the same sensitivity and specificity as singleplex QPCR reactions.

High prevalence of *Legionella pneumophila* in severe community-acquired pneumonia as determined by a commercially available PCR assay

N. Poblet-Mas, M. De la torre, J.M. Sirvent, et al. (Girona, ES)

The PCR assay used in this work enables a rapid and sensitive diagnosis using as little as 200 µl of urine. Prevalence of *L. pneumophila* is significantly higher when analysed by PCR as compared to the urine antigen test (P=0.01), suggesting that the prevalence of this pathogen in severe CAP is higher than suspected so far. Since urine antigen test is restricted to serogroup 1 of L. pneumophila, the fact that the PCR kit detects serogroups 1 to 15 by the PCR kit may help to explain this difference. The use of this PCR as a complement of conventional techniques is recommended to improve the detection of *L. pneumophila* in clinical laboratories.

Cost-effective method for differentiation between Salmonella species and other members of the Enterobacteriacae referred to the national *Salmonella* reference laboratory in England and Wales

T. Peters, C. Maguire (London, UK)

The RespiFinder-kit is based on a new multiplex This PCR assay provides a cost-effective rapid means of distinguishing between routine specimens that have been misidentified as *Salmonella* strains and those that do actually require further selection and typing.

Norovirus Infections on Cruise Ships – A Medical Challenge

Hermann Feldmeier, Charité University Medicine Berlin, hermann.feldmeier@charite.de

In November 2006, just two days after the 'Freedom of the Sea', the largest luxury ship in the world, was at sea, the first passengers reported to have taken ill. They all had signs of an acute gastrointestinal infection with vomiting and diarrhoea. The following day the number of patients had already doubled. When the cruise ended at the beginning of December, the shipping company had to report 384 cases of gastroenteritis that had occurred on board to the authorities. Because of the self-limiting course of the disease – after two days most of the passengers were feeling better – it was clear that one was dealing with a noroviral epidemic.

Under the supervision of hygiene experts the ship was cleaned thoroughly, surfaces were decontaminated, and water lines and storage containers were disinfected. The success was modest: during the next cruise 97 passengers and eleven crew members became ill with acute diarrhoea and vomiting, such that the captain had to interrupt the cruise and search for a port.

For cruise ship tourism, a rapidly growing recreation industry with two-digit yearly growth rates, noroviruses are a new plague. According to statements from Eurosurveillance, during the first half of the past year there were 42 outbreaks alone with approximately 1'500 illnesses on 13 ships that crossed European waters. The Centers for Disease Control (CDC) in Atlanta counted 34 epidemics for the entire year 2006 in its control area, significant increase as compared to the four outbreaks reported to the American authorities ten years ago. In the least severe situation only a dozen passengers were affected, but there were also infectious catastrophes with more than 700 victims.

Not only the number of outbreaks, but also the number of ill per thousand passengers has increased during the past year. The figures rose from 0.6 in 2001 to 5.5 in 2004. Since then the norovirus has been responsible for more than 95% of all intestinal illnesses on cruise ships. In comparison, bacteria-related outbreaks are only of secondary significance.

Particularly notable is that in about 70% of all cases, the same ship was plagued several times with norovirus epidemics. Often a second epidemic occurred during the next cruise; on one ship a medical emergency was cited on six consecutive trips – a sign that the pathogen had stayed on board as a 'blind passenger' despite extensive disinfection measures. Even the *crème de la crème* of luxury liners was not immune to the gastroenteritis epidemic: in February of 2006 Queen Mary 2 and in January of this year Queen Elizabeth 2 were both affected.

The worldwide increase and rapid spread of noroviruses are due to a remarkable resistance to environmental factors, a high contagiousness (indicated by an extremely low infective dose), different ways of transmission (oral and airborne droplets),

Worldwide noroviruses (family caliciviridae) lead to approximately 300 million cases of gastroenteritis yearly. Still unexplained is the seasonal variation with a peak during the winter months – in contrast to the peak in bacterially-caused gastroenteritis during the warm season. In Germany, for example, the Robert Koch Institute records a 200-fold increase in incidences during the winter months.

In hospitals, and especially in geriatric departments, in homes for the elderly and nursing institutions, but also in boarding schools, the pathogens typically lead to epidemics with an explosive course, seeming to appear from nowhere. The last great outbreak in German-speaking countries occurred in the fall of 2006 in Eisenstadt in Austria. Over 100 students at a polytechnic institute took ill as well as 50 students at a neighboring business school. A large increase in norovirus outbreaks in Hungary and Germany was reported to European national health authorities by the end of 2006. The norovirus isolates causing 108 outbreaks which started in October and November 2006 have been characterised, and 87 (81%) belonged to genotype G.II4, which has been the predominant genotype in recent years. 21 (19%) belonged to the other genotypes.

As an imported pathogen, noroviruses are also of epidemiological significance. For example, an epidemic developed in 2006 in Oregon (in the northwestern part of the US). A batch of oysters was identified as the infectious source, which had been imported from South Korea. The ECDC has reported cases after the ingestion of contaminated imported raspberries. Between 1995 and 2006 there were only few known cases of noroviral episodes on board US aircrafts, with altogether 1'335 illnesses.

as well as – last but not least – the emergence of new genetic variants. Within the two genogroups I and II, which have been circulating globally for several years, new variants continually emerge, particularly in group II. According to the European Centre for Disease Control (ECDC) in Stockholm, during the last half year the genotypes GGII.7 and GGII.b dominated, and previously it was GGII.4. A new variant of these genotypes has been observed since the end of the previous year with an increasing occurrence in the Netherlands, France, Denmark and England, which was responsible for at least two of the outbreaks on European cruise ships.

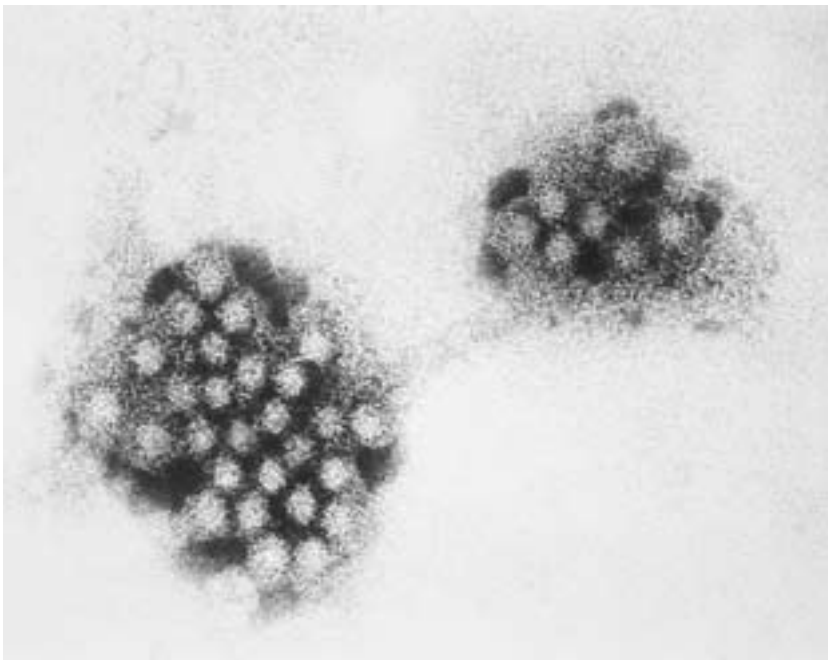
A group of infectious disease epidemiologists from the CDC examined a series of Norovirus epidemics on a cruise ship, in order to explain why the attack rate is so high and why it is so difficult to eliminate the microorganism from a ship. According to E. T. Isakbaeva and her colleagues, the rapid spread of the disease during a cruise is connected with the biological characteristics of the pathogen and not with lack of hygiene on the ship. Noroviruses were rarely found on food, but regularly found on objects of differing composition, such as wall coverings, door handles, mirrors, guardrails or buttons in elevators. They were equally efficiently passed on by direct contact (a handshake with a sick person suffices) as well as through inhalation, such as when a droplet of infectious material remained in the air following vomiting. Typically, less than 100 virus particles were sufficient to make a healthy person sick within twelve to 72 hours. The typical crowding on cruise ships – up to 2'800 passengers and 1'100 crew members – and the numerous contacts between passengers can turn one single case of illness into an epidemic within a few days.

About 50% of the infected individuals develop symptoms. After a short incubation period, an acute gastroenteritis develops with watery diarrhoea, nausea, vomiting and abdominal body cramps. As a general rule the symptoms subside after twelve to 60 hours. Afterwards the pathogen can be excreted with stool for up to two weeks, and possibly longer with persons infected asymptomatically.

There is a high possibility that an epidemic on a ship begins with one passenger bringing the pathogen unnoticed on board. It could be shown by molecular biological examinations of pathogens isolated from stool samples that generally an identical viral variant had caused a subsequent epidemic to occur on the same ship. The high resistance of the pathogens to many disinfectants and the immense surface area that can be contaminated on a ship explain the failure of the disinfection measures.

Since for a shipping company there is hardly anything more damaging to its reputation than a series of norovirus epidemics on a cruise ship, in case of an outbreak numerous shipowners go beyond the specifications that the CDC defined in the year 2002 in a so-called Vessel Sanitation Program: patients and their family members are advised to stay in their cabin for two days, self-service buffets are discontinued, and cruise ship doctors are supplied with medical laboratory infrastructures, in order to be able to diagnose a noroviral infection on site. The disinfection measures do not even stop at the bible in every cabin, the TV remote control, the chips in the casino or the money in the ship's cash register.

Since there are neither safe methods of prevention nor a specific therapy against noroviruses, despite all hygienic diligence this pathogen will continue to find ways and means to torpedo all infectious disease security measures.



An electron micrograph of the Norovirus, with 27-32nm-sized viral particles. Norwalk viruses (and related caliciviruses) are important causes of non-bacterial gastroenteritis throughout the world. Image courtesy of CDC, Atlanta.

Paradigm Shifts and Advances in Oral Health for Populations

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A fundamental feature of personal hygiene is the simple daily act of cleaning one's teeth and mouth. This process repeated world-wide a few billion times daily can be traced to the earliest records of human history. History since the reign of the Pharoahs (1) describes a large number of devices and formulations to cleanse the mouth. While most individuals agree on the critical role of the human mouth for everyday activities, recent evidence has unraveled the unique health-related benefits of oral hygiene. In the human body, the human mouth is the only site with both shedding and non-shedding teeth sites. With food intake, it forms an excellent site for the growth of diverse microorganisms in the different niches – tongue, and as dental plaque both above and below the gum line. Together, these factors play a significant role to influence oral health. A symposium at the ECCMID / ICC 2007, *The medico-dental health interface – paradigm shifts and advances in oral health for populations*, discussed recent advances in oral health, its relationship to systemic health, the oral care needs for special populations such as geriatric, immunosuppressed and cancer patients to highlight common approaches to control oral conditions widespread amongst populations.

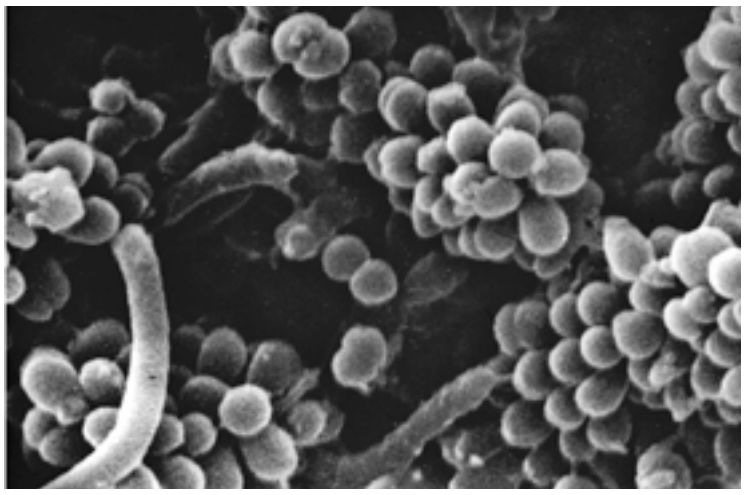

Figure 1:
Scanning electron microscopy of dental plaque consisting of coccal and rod-shaped bacteria

A primary trigger for common oral disease conditions is dental plaque, a complex microbial biofilm. Estimates reveal that dental plaque can comprise more than 300 layers of oral bacteria and can harbour in excess of 10^{10} organisms per milligram. Clinical studies confirm that the unrestricted accumulation of dental plaque (Figure 1) leads to gingivitis, an inflammation of the gum tissue (Figure 2). Gingivitis afflicts almost entire populations worldwide. A primary and cost-effective means for routine oral hygiene is effective brushing to remove the accumulated dental plaque. However, it is clear that despite education, tooth brushing habits in the developed world remain variable. For instance, a recent survey of 5000 adults from Denmark revealed that 32% brushed their teeth once-a-day or less (2); only 7.7% had healthy periodontal conditions (3) and about one-third of pregnant women indicated signs of gingival inflammation (4). Similarly, about 20% of Swedish teenagers and 25% of UK adults brushed their teeth once daily (5, 6). Thus, it comes as no surprise that visible dental plaque was observed amongst 33% of teeth of dentate adults (6). These surveys demonstrate that few brush their teeth twice daily in accordance with general recommendations (2-3 minutes). Furthermore, most individuals have poor brushing techniques that leave behind significant amounts of dental plaque. Whereas poor oral hygiene due to inadequate brushing is common, even fewer use dental floss to clean between the teeth. Clear evidence for the lack of optimal oral hygiene is reflected in the greater than 80% incidence of gingivitis and gingival bleeding amongst European populations with similar reports from the USA (7, 8). Poor oral hygiene is compounded by the fact that less than 70% of individuals undergo annual dental exams in the developed countries (9, 10), an aspect that reaches substantial magnitude in less developed countries (11). Together, these constitute some of the reasons for progression of gingivitis to periodontal disease (Figure 2), a widely prevalent chronic and irreversible condition that afflicts about 30% of the population (12). World-wide, these oral conditions represent one of the most prevalent diseases mediated by microorganisms.

An important advance for the general population is the routine use of oral hygiene formulations with antimicrobial agents to mitigate the effects of dental plaque. A primary rationale for the inclusion of antimicrobial agents is their ability to control dental plaque and related gingivitis. These agents include chlorhexidine, triclosan, essential oils, metal salts and other ingredients with a sig-

nificant history of effective use. Their use in routine oral hygiene formulations is supported by results from a large number of clinical studies demonstrating significant clinical benefits at reducing dental plaque and gingivitis. For example, over 50 clinical studies have been reported for the triclosan/copolymer toothpaste. Three separate meta-analyses (13,14,15) and reviews (16) by independent groups demonstrate the significant efficacy of this formulation at reducing dental plaque and gingivitis. Clinical studies (up to five years in duration) document the efficacy of this formulation at preventing the onset and progression of periodontal disease. Microbiological monitoring indicates the substantial clinical effects of triclosan/copolymer on oral health without alterations in the oral microflora or the development of dental plaque bacteria with altered susceptibilities to antimicrobial agents.

The benefit of effective oral hygiene has been the subject of extensive recent research. These efforts point to emerging relationships between periodontal disease and systemic health. A recent paper demonstrated that treatment of periodontal disease can improve endothelial function and potentially decrease the risk for cardiovascular events and stroke (17). The significance of these associations represents an area requiring greater interactions between dental and medical professionals. Current data indicate associations of periodontal disease with systemic conditions such as coronary heart disease and stroke, higher risk of delivering preterm, low birth weight babies and threats of chronic disease such as diabetes, respiratory diseases and osteoporosis. Further, developments in medical science and technology have led to significant gains in reducing morbidity while managing patients with life-long diseases such as cancer, HIV infection and organ transplantation as well as residents of long-term care facilities and ICUs. Many of the patients suffer from xerostomia (dry mouth) due to long-term prescription of medications for high blood pressure or anticoagulant therapy or other medical interventions. They reflect a growing population with special oral care needs due to their antecedent medical needs. Adverse oral manifestations such as xerostomia, oral infections and sensory alterations are frequent in these groups, placing them at higher risk for oral mucosal infections, caries and periodontal diseases. Together, these patients constitute a growing group requiring greater interactions between dental and medical professionals for optimal oral and systemic health care.

Figure 2:
Bacterial biofilms forming dental plaque are the main cause of gingivitis.

Healthy gingiva

Gingvitis

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Handwashing – still an Important Factor in Preventing HAI?

Letter to the Editor

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As member of the ESCMID Study Group on Nosocomial Infections (ESGNI) and as someone involved in hand hygiene, I am sorry to say that in ESCMID News 1-2007 a non-optimal picture was printed, which unfortunately happens much too frequently when articles on HAI and hand hygiene are accompanied by 'editorial art work'.

As we all know, alcohol-based hand rubs are the mainstay of hand hygiene and not hand washing. While hand washing is still necessary in certain situations (e.g. visibly soiled hands), the recently published WHO guideline on hand hygiene leaves no doubts by its readers that hand rubs are the way to go to prevent cross-transmission of nosocomial pathogens and consequent infections (see ESCMID News 3-2005, page 13).

Furthermore, the 'editorial art work' that was inserted to 'improve the layout', regrettably can only be seen as an example of: 'how not to do hand hygiene'. Next to the use of hand washing over hand rub, the depicted healthcare worker is wearing a long-sleeved white coat and a nice watch, both ensuring that hand hygiene in general (either washing or hand rub) will not be adequately done.

Response from the Editors

The editors would like to thank Andreas Voss for alerting us to the above and fully agree with the comments regarding alcohol rubs and the wearing of jewellery. However, concerning wearing long sleeved clothing, we would like to point out that this issue has still not been proven (see e.g. *Lancet Infec Dis*, 2007, May issue).

Forthcoming Events

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 Courses & Workshops, ECCMIDs & Conferences, or Calendar of Events, respectively.

ESCMID Events

15 September 2007
3rd GRACE Postgraduate Course
From Cough to Asthma: the Role of Infection
Stockholm, Sweden

7 – 11 October 2007
3rd FEMS / ESCMID Conference
New Frontiers in Microbiology and Infection:
Streptococcus pneumoniae
Villars-sur-Ollon, Switzerland

22 – 24 October 2007
1st GRACE Workshop
LRTI – Current Concepts in Pathogenesis, Microbiology, Epidemiology and Economic Impact, *Prague, Czech Republic*

7 – 9 November 2007
43rd ESCMID Postgraduate Technical Workshop and International Symposium: **Bacterial Adaptation Mechanisms: Biofilms, Hypermutability and Antibiotic Resistance**
Palma de Mallorca, Spain

8 – 9 November 2007
46th ESCMID Postgraduate Education Course
Update on Invasive Fungal Infections: Epidemiology, Therapy, Diagnosis and Antifungal Susceptibility Testing, *Innsbruck, Austria*

10 – 13 November 2007
44th ESCMID Postgraduate Education Course
ESCMID-SHEA Training Course in Hospital Epidemiology
Prague, Czech Repubic

18 – 20 November 2007
2nd ESCMID Conference on *Pseudomonas aeruginosa*
Barcelona, Spain

2 – 5 March 2008
47th ESCMID Postgraduate Education Course
EMESG Workshop on Gene Expression during Infection
Siena, Italy

14 – 15 March 2008
48th ESCMID Postgraduate Education Course
Infections with Multiresistant Pathogens: Microbiological, Clinical and Therapeutic Aspects
Berlin, Germany

19 – 22 April 2008
18th European Congress of Clinical Microbiology and Infectious Diseases (ECCMID)
Barcelona, Spain
Contact: AKM Congress Service
Phone: +41 61 686 77 11
Email: info@akm.ch
Internet: www.akm.ch/eccmid2008

16 – 19 May 2009
19th European Congress of Clinical Microbiology and Infectious Diseases (ECCMID)
Helsinki, Finland
Contact: AKM Congress Service
Phone: +41 61 686 77 11
Email: info@akm.ch

Endorsed by ESCMID

20 – 22 September 2007
XX International Workshop of the EHSG
Istanbul, Turkey
Contact: European *Helicobacter* Study Group
Email: francis.megraud@chu-bordeaux.fr
www.helicobacter.org/

7 October 2007
Joint ESCMID/IDSA Symposium on Extensively Drug-resistant Tuberculosis during IDSA Annual Meeting
San Diego, USA
Contact: IDSA
Phone: +1 703 299 0200
Fax: +1 703 299 0204
www.idsociety.org/me/prelim_program_07.pdf

18 – 19 October 2007
5th Scheveningen Meeting on Molecular Diagnostics
Scheveningen the Haag, the Netherlands
Contact: Wens Reizen
Phone: +31 35 542 9333
Email: info@molecularmeeting.com
www.molecularmeeting.com/

14 – 17 May 2008
8th International Meeting on Microbial Epidemiological Markers
Zakopane, Poland
Contact: Waleria Hryniewicz
Internet: www.immem-8.org

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: One of the worst nightmares of a cruise ship company is having a visit by noroviruses, which are extremely difficult to get rid of by decontamination. Equally the virus, like the influenza virus, is very treacherous. The RNA mutates so that every year or two a new virus emerges that escapes host defence even of previously immune individuals. It could have a life span forever; mutating slightly, and infecting a new group of people. Currently there is no available vaccine against norovirus.

Below: Newly-formed ESCMID Executive Committee with outgoing Past President, Marc Struelens, after the annual Assembly of Members 2007 on 1 April in Munich .

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