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Editorial
HOW EUROPE IS FACING UP TO ANTIBIOTIC RESISTANCE

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In this issue, Witte and colleagues report on the emergence, since 2002, of cases in Germany of infection with community-acquired methicillin-resistant *Staphylococcus aureus* (c-MRSA) producing the Panton-Valentine leukocidin (1). This report adds evidence to the rapid geographical dissemination of this emerging, hyper-virulent variant of an 'old pathogen' across Europe. First reported in the early 1990s among aboriginal populations in Western Australia, outbreaks of c-MRSA infections have more recently been described in population groups such as prison inmates, injecting drug users, sports teams and schoolchildren, in the United States and Europe. Current evidence from molecular studies points to the spread in each continent of a limited number of PVL-producing MRSA clones that are genetically distinct from epidemic nosocomial strains. This represents a public health threat, because these strains are associated with severe soft tissue and pulmonary infection and the outcome of MRSA infection is worse than with infection caused by beta-lactam susceptible *S. aureus*, especially if inappropriately treated with beta-lactams that are usually prescribed for these infections. We must, therefore, upgrade the diagnostic work-up for this kind of infection in the outpatient setting and adapt empirical therapy accordingly. Moreover, surveillance should be intensified to monitor the incidence of MRSA and detect and control outbreaks in the community. In this respect, the report by Witte et al underscores the important early warning role that reference laboratories can play by using high resolution molecular markers based on routine typing and susceptibility data.

This emerging threat of c-MRSA highlights the rapid and unpredictable evolution of human pathogens under the interplay of antibiotic selective pressure and changes in society. Antimicrobial resistance is a multifactorial phenomenon, requiring multidisciplinary study and multimodal control interventions. Also in this issue, Bronzwaer et al review progress achieved since the launch by the European Union in 2001 of the Community Strategy against Antimicrobial Resistance (European Antimicrobial Resistance Surveillance System, EARSS). A impressive number of national initiatives and Community actions have been implemented to enhance surveillance, prevention, research and product development, and international cooperation, and these will be expanded in the next few years.

The European Society of Clinical Microbiology and Infectious Diseases (ESCMID) (2) is contributing, together with other learned societies, to the international mobilisation of health professionals against antimicrobial resistance. Our society's founding principle is the close integration of laboratory and clinical science and practice in the study, prevention and treatment of infection. To disseminate professional and scientific excellence, we organise postgraduate training courses and a summer school. ESCMID supports several study groups investigating the antimicrobial resistance problem, and provides scientific advice to surveillance programmes funded under the Community public health programme like EARSS and European Surveillance of Antimicrobial Consumption (ESAC). This programme will also fund the European Committee on Antimicrobial Susceptibility Testing (EUCAST) that is operated by ESCMID to serve as an umbrella for all national standard committees within the EU. EUCAST is making much awaited progress in harmonising national guidelines across Europe on antimicrobial drug susceptibility testing methods and

interpretation criteria. The development of European standards of hospital surveillance and control practice is also on the agenda of ESCMID projects like the Antibiotic Resistance and Control (ARPAC) project funded under the Fifth Framework Program (FP5).

The European conference on the role of research in combating antibiotic resistance, organised in Rome by ESCMID and the Research Directorate-General of the European Commission (3), attracted 160 delegates from 30 countries, including biomedical scientists, microbiologists, clinicians, epidemiologists and representatives from the pharmaceutical and biotechnology industries. A partnership between all stakeholders is needed to find the right balance between public health needs for new antimicrobial drugs on the one hand, and the economic constraints of drug discovery and development on the other. Participants reviewed current knowledge and identified gaps in our understanding of antimicrobial resistance in human pathogens, and stressed the severe underfunding in this research area. The conference recommendations on research priorities will be published in *Clinical Microbiology and Infection*.

As highlighted by the SARS pandemic, control of communicable infections is a pressing public health challenge of global proportions. The control of antimicrobial resistance is part of meeting this challenge. In this light, the proposal by Commissioner Byrne to establish the European Centre for Disease Prevention and Control (ECDC) by 2005 must be commended as a timely step. Effective control requires close cooperation between laboratory scientists, epidemiologists and public health practitioners. ESCMID has published a position paper that recommends developing laboratory facilities at the ECDPC to support communicable disease surveillance (1). Furthermore, establishing European reference laboratories and integrating them with new centres of excellence in infectious diseases research would boost European research capacity and help to develop a sense of collective responsibility among biomedical scientists and healthcare professionals. In my view, the debate on the size and scope of the ECDC comes down to how much we, as European citizens, are prepared to invest in multilateral research and response capacity to protect the public against infectious disease.

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