

## Foreword

The pattern of infectious diseases is constantly changing and the risks associated to pathogens, especially those that have a potential impact on public health, need to be assessed on a permanent basis in order to increase our awareness and help us design effective strategies of control and prevention. According to the World Health Organization (WHO) about 60% of the pathogens discovered in the last 30 years are agents of zoonoses, roughly half of them being bacteria. Among these zoonotic bacteria one has to mention: *Campylobacter jejuni* (1977), *Escherichia coli* O157:H7 (1982), *Borrelia burgdorferi* (1982), *Bartonella henselae* (1992). During the same period, a number of classical, and even historic, bacterial zoonoses regained attention due to major alterations in the epidemiological or medical traits of the disease (plague, leptospirosis, tularemia, mycobacteriosis, Q fever), the genetic evolution of the causative agent, especially the acquisition of multidrug resistance (*Salmonella*, *Campylobacter*), the recognition of new species or variants (*Brucella*, *Rickettsia*) or because they were pointed out as potential agents of bioterrorism (anthrax, tularemia). In this context, the objective of the editors of this special issue of *Veterinary Research* has been to make a comprehensive account of the major novelties associated with the above-mentioned bacterial zoonoses, which have been considered as emerging or re-emerging in the last 20 years, with the exception of anthrax, leptospirosis and Lyme disease, as several recent review papers have been published on these zoonotic bacteria. The different papers are written by top-rank specialists for each of the bacterial agents concerned. We think that this update may be of interest for a wide readership from epidemiologists and public health risk managers to molecular bacteriologists. This special issue of *Veterinary Research* is also timely, as a special expert committee on emerging zoonoses was organized in May 2004 in Geneva by the WHO, the Food and Agriculture Organisation (FAO) and the Office International des Epizooties (OIE) to define guidelines on the control and prevention of these zoonotic diseases\*.

We fully acknowledge that the notion of emergence is too often ambiguous and that no unique definition of the terms “emerging” and “re-emerging” is agreed upon. Most often the broad acceptance of the Centers for Disease Control and Prevention (CDC) is used, i.e. “diseases of infectious origin whose incidence in humans increased within the past two decades or threatens to increase in the near future”. From a strict epidemiological standpoint, this definition lacks rigour as the measurement of incidence can only be applied over a specified range of spatial and temporal scales, short term, local increases in incidence being not necessarily indicative of long term, global trends. Other factors can also bias the objectivity of our perception of emergence, such as our level of awareness for specific pathogens or the rapid improvement in diagnostic methods. At the WHO/FAO/OIE meeting, the participants agreed on the following definition of an emerging zoonosis: it “is a zoonosis that is newly recognized or newly evolved, or that has occurred previously but shows an increase in incidence or expansion in geographical, host or vector range”. Therefore, keeping in mind that the actual status of emergence is difficult to assess accurately for some diseases, we have selected for this review bacterial diseases that are generally considered or suspected to be emergent or re-emergent according to the informal consensus of the scientific community. To improve the objectivity of the notion of emergence, we have invited the authors, among other recommendations, to critically review the data that authorize the qualification of emergent or potentially emergent for each specific case.

As appears in the table of contents, most of the papers are in the form of monographies for each specific disease, a format that may appear conventional but that we nonetheless consider essential to collect relevant new information and expect authorized viewpoints from authoritative experts. Besides monographies, we also present two crossover papers dealing respectively with emerging bacterial zoonoses that are particularly severe in immunocompromised patients, with a special emphasis on food-borne and air-borne pathogens, and with the general patterns of disease emergence, the methods of surveillance and control of these infections.

We have adopted a disease classification based on the type of animal reservoir or the means of transmission. This classification illustrates the emphasis that we have sought to place on the new epidemiological aspects of the diseases, whether they reflect changes in the biology of the pathogen, the demography and behaviour of the animal or human hosts, the ecology of potential reservoirs or the mode of transmission. The authors were also invited to analyse how new patterns of disease occurrence and renewed knowledge on pathogens impinged on diagnostic methods and control strategies. They were not expected to write an exhaustive monography, especially as other recent reviews can be referred to nor to get into the medical or clinical aspect of the diseases, except if emergence implies new clinical aspects, which is the case for *Bartonella* infections.

Hoping that this special issue will fulfil the expectations of the readership of Veterinary Research, we would like to express our gratefulness to both the authors for contributing to this issue and the referees who commented on the original drafts.

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and Bruno Chomel, Co-Editor in Chief  
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\* Report of the WHO/FAO/OIE joint consultation on emerging zoonotic diseases in collaboration with the Health Council of the Netherlands, 3–5 May 2004, Geneva, Switzerland, 65 p.