Preface

Brucellosis: recent developments towards ‘One Health’

The study of zoonotic brucellosis served as a basis for some of the great early advances in epidemiology, yet the disease remains the most common chronic bacterial infection in the world. It continues to cause important medical, veterinary, socioeconomic and conservation problems, mainly because its overall burden remains underestimated and often neglected. Brucellosis manifests anywhere and knows no borders, moving liberally amongst humans, livestock, and terrestrial and aquatic wildlife. There is a need, therefore, for critical deliberation of its epidemiology, pathogenesis, diagnosis, and prevention and management. In responding to this need, the global scientific and technical community has recently made several advances: it has increased our understanding of molecular determinants and cell internalisation mechanisms; improved molecular characterisation techniques (leading to a better understanding of evolution, host specificity, and pathogenicity); developed more accurate multivariate empirical models of disease transmission and persistence probabilities; made progress in the integration of spatial epidemiology techniques; designed and implemented long-term adaptive risk management systems; developed new approaches to applying ecological principles to wildlife brucellosis in large landscape-scale environments; made innovative advances in vaccinology; and gained insights into emergent strains and novel hosts. Yet, despite these notable advances, there remain important challenges in the areas of risk assessment and management, the adoption of sustainable control interventions, and capacity building for improved epidemiological and economic decision-making. In line with the emergence of the information age, exciting advances in brucellosis are being witnessed through the increasing global integration of brucellosis science and management communities. Indeed, one of the purposes of this issue of the OIE Scientific and Technical Review is to further encourage enterprising outreach amongst the human, wildlife, and livestock brucellosis communities, and thus deliberately nurture this continuing integration towards a One Health approach involving disease prevention and control programmes at the animal source.

This issue of the OIE Review presents a comprehensive overview of current knowledge on the ecology of brucellosis, a clearer understanding of the current situation and a summary of the outlook for the future, so as to allow the disease to be neglected no longer, or at least to be recognised as neglected. I am pleased that the foremost authorities of these communities agreed to share their insights into these challenges and opportunities, and sincerely thank the authors for their contributions. Special thanks and congratulations are offered to Drs Glenn Plumb, Steven Olsen and Georgios Pappas for their innovative vision in coordinating this exceptional state-of-the-knowledge resource on brucellosis.

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