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Abstracts

1st International One Health Congress Abstracts

Plenary Abstracts

The following abstracts are listed by Theme and corresponding sub-Theme. Abstracts are organized within sub-Theme alphabetically by the last name of abstract presenter as of 01 December 2010.

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The One-World of Infection and Immunity

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Has there ever been the slightest doubt in the minds of those of us who research infection and immunity that we are part of one, related world comprised of the spectrum of higher vertebrates? From the likely crossover of bovine rinderpest to cause measles at the dawn of plant and animal agriculture some 10,000 years back, through the continuing toll of plague (rat/flea/human) that blighted much of the past millennium, to Jenner's use of cowpox as the first vaccine against variola, then the realization that the influenza A viruses that afflict us are primarily infections of aquatic birds, to the establishment of a chimpanzee virus that causes human HIV/AIDS, we have come to understand that the apparent barriers limiting this or that infection to a particular species can, at time, be very fragile. Also, ''though mice can lie and monkeys don't always tell the truth'', it is irrefutable that much of our conceptual understanding of human immunity, vaccine development and so forth has come from experimental studies with rodents and sub-human primates that cannot, for obvious reasons, be done in people. This equation has changed to some extent with the rise of modern molecular technology but, as with so many areas of science from cancer to neurobiology, the availability of mice that are transgenic for the expression of a particular protein, or proteins, or have those genes disrupted (knockout) to prevent their function, has driven biology forward in the most extraordinary way and provided insights that have led to the development of new vaccines and therapies. We are part of the animal kingdom. While we might celebrate that we are different from other species when it comes reasoning ability and the size of our frontal cortex, there is much to be learned from careful analysis of the full spectrum of life, particularly when it comes to growing dangers like the threat of anthropogenic climate change.

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One Health – An Australian Veterinary Perspective

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Animal health has an impact on all of us. It can directly affect our own health through exposure to zoonotic diseases; it can affect human health, welfare and security when it decreases food security (especially in developing countries) and it can affect national economies—especially those with a substantial agricultural base. Animal health can also affect our environment and, in turn, be influenced by the environment.

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An Empirical and Quantitative Approach to the Prioritization of Zoonotic Diseases of Public Health Importance in Canada

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Zoonotic diseases account for over half of all communicable diseases causing illness in humans. As resources are limited for the control and prevention of zoonoses, it is necessary to prioritize diseases to direct resources into those with the greatest needs. While there is consensus amongst medical and veterinary professionals for the need to prioritize zoonoses, there is no uniformity in methodological approaches. Despite methodological differences, experts recommend priority setting should be empirical and quantitative, founded on good science, informative to public policy and have the ability to be iterative for recurrent evaluations.

We used conjoint analysis, a well-established quantitative method satisfying these criteria, to identify the relative importance of key characteristics of zoonoses to be used for their prioritization. Relative importance weights were used to develop a point-scoring system to derive a recommended list of zoonoses for prioritization in Canada.

6 focus groups identified 29 characteristics for determining prioritization; this was used to construct a conjoint analysis. 1,500 health professionals and individuals from the public are currently participating in this study. Scoring based on the conjoint analysis were applied to 63 zoonoses of importance to Canada and internationally.

Our pilot data suggests conjoint analysis can be used successfully for the prioritization of zoonoses. Diseases recommended for prioritization include Nipah virus encephalitis, variant Creutzfeldt-Jakob disease and H1N1 influenza.

The priority list will help formulate a framework for policy development for the control and prevention of zoonoses in Canada. Additionally, conjoint analysis should be considered as a potential tool for priority setting.

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Promoting Human and Animal Health Through Early Humane Education: Perspectives and Future Directions Based on HAI Research

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One of the leading causes of injury in children and companion animals is interspecies violence. Animal violence against humans (e.g., dog bites) and human violence against animals (e.g., animal abuse) are prevalent problems worldwide. Many of these incidences may be preventable. Animal violence towards humans can stem from a lack of knowledge of safe and respectful human-animal interactions. Human violence towards animals, especially during childhood, is often indicative of psychological disorder. Data from the emerging field of Human Animal Interaction (HAI) research provides insight into the reduction of interspecies violence through early humane education.

Humane education generally refers to an effort to educate humans about how to interact with and care for non-human species with empathy and compassion. It has been utilized as a means of educating children about safe interactions with animals to prevent human and animal injury, as well as to promote psychological health and reduce psychological disorder. For example, new data will be presented from a sample of children with Autism Spectrum Disorder in Australia, indicating that an 8-week animal-assisted intervention in the classroom can ameliorate core social symptoms of the disorder and educate children on how to engage in safe and respectful human-animal interactions. Future cross-disciplinary research bridging the fields of public health, veterinary science, animal behavior, psychology, and education will be necessary in order to improve human and animal health by reducing interspecies violence through research-based humane education programs.