



# NATIONAL VETERINARY LABORATORY

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## NEWSLETTER

### 1<sup>st</sup> International One Health Congress

Evelyn E. Zuckerman, Editor

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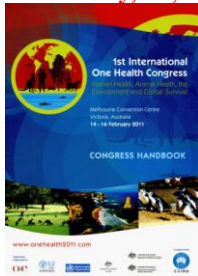
#### In This Issue:

The Summer, 2011 issue of the NVL Newsletter will review our participation in the 1<sup>st</sup> International One Health Congress, held in February of this year in Melbourne, Australia. The Congress brought together, veterinarians, public health workers, physicians and politicians in the year when we celebrate World Veterinary Year and commemorate the 250<sup>th</sup> anniversary of the founding of the first veterinary school in Lyon, France. The theme was human and animal health, the environment and global survival.

[www.onehealthinitiative.com](http://www.onehealthinitiative.com)

#### One Health Congress

William D. Hardy, Jr., V.M.D.



The 1<sup>st</sup> International One Health Congress was held in February 2011 in Melbourne, Australia. Melbourne is a vibrant city with a beautiful river waterfront with massive art pieces placed throughout the city.



The meeting venue was the sprawling Convention Center on the beautiful Yarra River.



Yarra River, Melbourne Australia

The One Health initiative seeks to promote, improve, and defend the health and well-being of all species by enhancing cooperation and collaboration between physicians, veterinarians, and other scientific health professionals and by promoting strengths in leadership and management to achieve these goals. Of the 1,415 microbes that are known to infect humans, 61

percent come from animals.<sup>1-3</sup> The figure below portrays the spirit of the One Health initiative.



Photo credit, Stephane Klein, Fotolia, Ceva Animal Health PTY LTD, Australia

The Congress was attended by over 300 health care professionals from around the world with veterinarians accounting for approximately one-third of the participants. The opening ceremony featured performances by native aboriginal peoples who honor their land and animals.



Native people's ceremony

The plenary session began with the keynote lecture "The one-world of infection and immunity" given by Dr. Peter Doherty, Laureate Professor in the Department of Microbiology and Immunology at the University of Melbourne. Dr. Doherty shared the Nobel Prize in Physiology or Medicine in 1996 for the discovery of how the immune system recognized virus-infected cells. He is the first veterinarian to win the Nobel Prize.



Nobel Laureate- Dr. Peter Doherty

Dr. Doherty spoke of the immune system in infectious diseases and warned of the growing dangers of the looming changes in infectious diseases due to anthropogenic climate changes.

#### The Congress Program:

The 3 day program was packed with sessions covering epidemiological surveillance methods of many diseases and sessions concerning disease modeling and prevention. Diseases such as influenza, SARS, hemorrhagic fevers, Rinderpest, bat lyssaviruses, rabies, Leptosirosis,

and others were discussed. Human environmental damage, global warming and responses to disease in various parts of the world were covered. Unfortunately, very few diseases of pet animals were covered, in fact there were only 2 canine and 2 feline diseases presented. However, we felt very fortunate to have been chosen to give an oral presentation at such an important international meeting.

#### Highlights of interest:

I have selected 2 presentations to discuss due to the familiarity with the authors, Dr. Steve Osofsky and Dr. Tracey McNamara. We worked with Dr. Osofsky on feline retroviruses in Botswana in the 1990's when Dr. Osofsky was just beginning his career. Although I had never met Dr. McNamara, I was aware of her seminal observations of the first outbreak of West Nile Virus in the United States when she worked a mere 25 miles from our laboratory. She observed crows and exotic birds dying at the Bronx Zoo in New York City.

#### Dr. Steve Osofsky:

Dr. Osofsky worked in Africa for the Botswana Government in the 1990s, and was able to have an active role in hands-on wildlife management as well as policy formulation. At that time we collaborated with Dr. Osofsky's team to determine the seroprevalence of feline retroviruses in large cats in Botswana.<sup>5</sup> Dr. Osofsky then did an AAAS Science & Diplomacy Fellowship at USAID for 2 years, and subsequently joined the World Wildlife Fund in 1998, serving as their Director, Field Support. In 2002, he left WWF to join the Wildlife Conservation Society's Field Veterinary Program (FVP), where he is currently the Society's first Director, Wildlife Health Policy.



Dr. Hardy and Dr. Osofsky

**One Health Policy Options for Biodiversity, Livelihoods and Transboundary Disease Management in Southern Africa.** Steven Osofsky, Mark Atkinson, David Cumming and Michael Kock. Wildlife Conservation Society, Virginia<sup>6</sup> <http://www.wcs-ahead.org>

The countries of southern Africa have set aside transfrontier conservation areas, areas for wildlife that span several countries. Nature-based tourism contributes as much to the overall GDPs of these countries as do agriculture, forestry and fisheries combined. Presently, large animal disease control fences are erected, which are not always effective and preclude transfrontier connectivity for wildlife. Dr. Osofsky's team is working with regional stakeholders towards a new paradigm to manage the transboundary animal diseases that occur in this region without a complete reliance on fences. If successful, this will help to prevent animal and zoonotic diseases while augmenting the economic vitality of the region with its unique and endangered animal species. These diverse species are a treasure for mankind.

### Dr. Tracey McNamara:

Dr. McNamara served as the veterinary pathologist at the Bronx Zoo in New York City. In the summer of 1999, New York City was plagued by an uncommon sight: dozens of dead crows, noted first at the Bronx Zoo and then throughout metropolitan New York. At the same time, in an apparently unrelated episode, elderly patients checked into area hospitals suffering from muscular weakness, fever, and confusion. Dr. McNamara's astute observations and persistence tied these disease episodes together when her exotic birds began getting sick. Her necropsy findings demonstrated that the birds were dying from viral encephalitis, eventually shown to be the West Nile Virus. Although she had a hard time convincing medical authorities, her persistence paid off and probably saved many human lives.<sup>7</sup> This episode was surely an excellent example of the "one health" concept.



Dr. Hardy and Dr. McNamara

### A Bird in hand: The Power of Zoo Sentinel.

Tracey McNamara, Dominic Travis and Yvonne Nadler. Western University of Health Sciences College of Veterinary Medicine, CA.<sup>8</sup> Reacting to the experience of the West Nile Virus outbreak at the Bronx Zoo in 1999, zoos around the country have recognized the importance of surveillance of exotic species for the emergence of infectious diseases. There is now the Zoo Animal Health Network (ZAHN) which has integrated with the USDA and APHIS as an early warning system which can serve as a model for other countries.

### Bartonella:

We continue to define the feline *Bartonella* diseases and the parameters responsible for the zoonotic transmission from pet cats to people. We will present our observations of the etiology of oral inflammatory diseases of cats at the upcoming Dental Forum Meeting in November, 2011 in Boston. Despite the *Bartonella* testing recommendations of the American Association of Feline Practitioners (AAFP), we continue to

observe the benefits of *Bartonella* testing and treatment of infected healthy cats or cats with *Bartonella*-induced inflammatory diseases. Our presentation at the Congress is given below.

### **Bartonella: The pet cat-human connection.**

William Hardy, Jr., and Evelyn Zuckerman, National Veterinary Laboratory, Inc., NJ<sup>9</sup>

**Background:** *Bartonella* cause identical diseases in cats and humans and cats are the major reservoir for human infection.

**Methods:** With the collaboration of numerous practitioners, we have defined the *Bartonella* diseases of cats and determined the parameters and routes of zoonotic transmission from cats to people. *Bartonella* infection of cats was determined by western blot serology and 186 cat owners, who developed a *Bartonella* disease, were interviewed by telephone.

### **Results:**

**Cats:** Serologic evidence of *Bartonella* infection was present in 38% of 49,921 healthy and 47% of 156,407 cats with inflammatory diseases.

**Zoonotic Transmission:** The offending cats were identified in 126 of 186 (68%) cases, where the route of zoonotic transmission was identified. All cats were serologically positive, 68% were healthy and 47% were kittens under 1 year of age. Routes of infection were: 57 scratches, 9 scratches/bites, 6 bites, 4 administering medication to cats, and 50 by unknown routes.

**Human Disease:** The *Bartonella* disease spectrum of 186 people was: 1) 151 (81%) developed classical CSD with a prodrome of lymphadenopathy (83%), fever (65%) and papule (26%) at the scratch or bite site. 106 of 151 (70%) had no sequelae after the prodrome, whereas 45 patients developed sequelae such as chorioretinitis, endocarditis, and encephalitis. 2) In contrast, 35 (19%) patients had no prodrome and only developed sequelae. Excluding 26 veterinary professionals, only 9 (6%) of the 160 patients were informed of the zoonotic potential of feline *Bartonella* by their veterinarian before their illnesses developed.

**Conclusion:** Our study demonstrates that veterinarians and physicians must become more aware (one-health) of *Bartonella* in order to prevent zoonotic transmission.

**JAVMA Commentary:** Last month, Dr. Primo Arambulo challenged the veterinary profession when he stated "We need veterinary leaders who will connect us with our past contributions, consolidate our present accomplishments, and open new frontiers in veterinary public health to move the concept of one health forward."<sup>10</sup> He concluded by saying that although the veterinary profession endorses the "one health" initiative, it must be more aggressive in asserting its rightful place at the formative and policy table.

**Personal Note:** As described in the Spring issue of our Newsletter, after participating and presenting a paper in 1<sup>st</sup> International One Health Congress, held in February in Melbourne, Australia, we were in the middle of a tour of New Zealand when a 6.3 earthquake struck at 1 PM on February 22, 2011. The quake devastated the center of the city of Christchurch where we had just arrived 24 hours earlier. Our hotel, The Heritage, a grand old hotel was at the center of

the destruction but, luckily, the newer portion of the hotel, with all of our belongings, survived undamaged.



Heritage Hotel, Christchurch, NZ

The older Hotel dining structure on the left collapsed while the newer residence structure in the background survived undamaged due to modern earthquake building specifications.

Due to the severe damage and the large numbers of people who lost their lives, the center of the city was off limits for 90 days. We, and many other tourists, were evacuated out of Christchurch by the Royal Air Force.



Royal Air Force plane for evacuation

As a credit to the wonderful people of New Zealand, and the staffs of the Heritage Hotel and DHL, we received all of our belongings without any loss or damage. Our 2 laptop computers, cameras, electronics and all of our Congress programs and notes were returned. Thus, we are now able to summarize the Congress and describe our participation which was only possible due to the collaboration of many of you, the practitioners, who helped us assemble the data on *Bartonella* infection of your clients, the cat owners and people in contact with the cats.

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