Canadian Cooperative Wildlife Health Centre

National Workshop for Wildlife Health Professionals

One World One Health™ Session Report

February 24, 2010 – Ottawa, Ontario, Canada

Public Health Agency of Canada
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Introduction

The Canadian Cooperative Wildlife Health Centre (CCWHC) is an organization encompassing Canada's five veterinary colleges. Its purpose is to reduce the ecological and socio-economic costs of diseases in Canadian wildlife, and to foster the integrated management of human, animal and environmental health.

The CCWHC coordinates Canada's national wildlife health surveillance program and provides educational programs, information, and consultation to both government and non-government agencies, as well as to the public. The CCWHC also coordinates targeted surveillance programs of wildlife diseases, such as West Nile Virus, Avian Influenza Virus, and Chronic Wasting Disease. In 2007 the CCWHC was designated an OIE (World Organisation for Animal Health) Collaborating Centre dedicated to wildlife disease surveillance and monitoring, epidemiology and management.

The CCWHC's National Workshop for Wildlife Professionals was held in Ottawa, February 23 and 24, 2010. A session on One World One Health™[1] (OWOH) was held on the morning of the second day. Its objectives were:

- To inform participants on the Public Health Agency of Canada (PHAC) perspective on OWOH;
- To learn how the OWOH framework can be applied in the work of Canada's wildlife health professionals; and
- To elicit advice on how OWOH can be utilized by the federal government.

[1] One World One Health is a registered trademark of the Wildlife Conservation Society

Setting the Context

Dr. Rainer Engelhardt, Assistant Deputy Minister, Infectious Disease Prevention and Control Branch, PHAC, provided an overview of the OWOH approach and how it is being incorporated into the work of PHAC. The OWOH approach recognizes the linkages among human, animal and ecosystem health domains. It proposes an international, interdisciplinary, cross-sectoral approach to surveillance, monitoring, prevention, control and mitigation of emerging diseases, as well as to environmental conservation. The concept that animal, human and environmental systems are intricately linked has been evolving since the 1850s.

The modern concept of OWOH was put forward by the Wildlife Conservation Society at a symposium in New York in 2004. The concept was developed by six international organizations who released their joint Strategic Framework, "Contributing to One World, One Health: A Strategic Framework for Reducing Risks of Infectious Diseases at the Animal-Human-Ecosystems Interface" at the International Ministerial Conference on Avian and Pandemic Influenza (Sharm el-Sheikh, Egypt, Oct. 2008). Since there was insufficient time to discuss the Framework at the meeting in Egypt, Canada agreed to host an international expert consultation. This was held from March 16 – 19, 2009, in Winnipeg.

The concept of One World One Health can be applied to many of the challenges affecting human health. One such issue is emerging infectious diseases (EIDs). EIDs are having an increasing effect on human health and economies, with roughly 60% of emerging pathogens being zoonotic. Of these, more than 71% have wildlife origins. Recent examples include pandemic H1N1, SARS, West Nile Virus, Ebola, and Avian Influenza. While the connection between human health, animal health and ecosystem health has long been recognized, the approach has not been fully integrated across disciplines and sectors. OWOH provides the needed conceptual and strategic linkages for a holistic, integrative, and interdisciplinary approach.

Traditional approaches to infectious diseases focus on responding to outbreaks when they occur and on understanding the human health and scientific aspects of disease. In contrast, with OWOH, the focus is on preventing outbreaks, which includes engaging communities and understanding the social and cultural determinants of health as well as the scientific aspects of disease. Additionally, OWOH requires collaboration and international cooperation for effective prevention of diseases, whereas traditional approaches tend to be national in scope.

The economic impact of zoonotic diseases worldwide is measured in the billions of dollars. SARS, a disease that originated in wildlife, cost the world economy an estimated $40- 50 billion dollars and had a significant effect on Canada's economy. Other Canadian examples include West Nile Virus (direct cost $155 million) and Lyme disease (direct cost $2.7 – 4 million per year in BC and Ontario). Even when there are no known human cases in Canada, such as with Bovine Spongiform Encephalopathy (BSE), a disease of production animals, the economic cost is substantial ($6.3 billion in indirect costs).

Wildlife is important to Canada's economy; fish and wildlife related recreational activities contribute more than $10 billion annually to the GDP. Wildlife is also important to Canadians, as 70% of the population participate in wildlife related activities. From a human health perspective, understanding wildlife health is important for a number of reasons including that wildlife can spread disease to people (vectors of disease, consumption of animals) and can act as sentinels of disease or environmental degradation. Preserving wildlife is also important as it can have positive health benefit (mental health, physical activity). Since the potential for exposure to wildlife is high, protecting wildlife health is important to protecting human health.

PHAC is using a whole-of-government approach to integrate OWOH concepts into policy. This includes drafting of a policy/position paper, establishing a core inter-departmental working group, engaging health portfolio members, and preparing a compendium of global case studies on OWOH. Next steps will include engagement with provinces/territories and international partners, such as the World Health Organization (WHO), Pan American Health Organization (PAHO), and OIE. Key areas for upstream, preventative activities include surveillance, research, education and communication.

Partnership between the public health and wildlife communities will be important to increase our understanding of the dynamics between wildlife, the environment and human health. This workshop provides the opportunity to further develop OWOH concepts and to strengthen relationships.

Panel Presentation & Open Forum Discussion

Barry Stemshorn, Senior Fellow with the Jarislowsky Chair in Public Sector Management and the Graduate School of Public and International Affairs, University of Ottawa, moderated the panel presentations and discussion. He noted that organizations such as the CCWHC provide a valuable and cost-effective way for government policy makers to obtain scientific information and advice. The federal government is entering a significant period of decision-making related to health, environment, and other issues and their associated resource allocations. Access to the best scientific knowledge will be critical to ensuring that those decisions are sound.

Craig Stephen, Director, Centre for Coastal Health, Nanaimo, BC, noted that the concept of OWOH is not new; rather, it is based on long-standing good veterinary practice. The *Ottawa Charter for Health Promotion* recognizes that the "inextricable links between people and their environment constitute the basis for a socio-ecological approach to health." A key principle of the Charter is "reciprocal maintenance," that is, taking care of each other, our communities and our natural environment.

OWOH's practitioners should not limit their attention to emerging infectious diseases. A broader, more robust approach is needed to encourage continued investment in prevention. Socio-cultural issues need to be on the OWOH agenda. For example, a focus on reducing poverty, a key driver of zoonotic diseases, may be more effective than focusing on pathogens. Keeping animals healthy is another area for increased OWOH activity. Healthy animals reduce the burden of infection and thus zoonosis risk, protect biodiversity and provide economic, social and cultural value.

Major impediments to implementing OWOH approaches continue to be a lack of collaboration within and across professional disciplines, conflicting policy goals, and a centralized rather than local approach. A sense of community needs to be created and passionate champions need to be identified. Improved data collection, analysis, and sharing are also essential.

What is most important is that the Ottawa Charter principle of reciprocal maintenance of animal, human and environmental health is embraced. An evidence-based approach to wildlife disease including contact, prevalence, and epidemiology information, will be required, along with recognition of healthy wildlife as a public health asset. Management, interventions and prevention also are required to ensure wildlife is resilient to introduced pathogens, changing ecosystems, and the impacts of disease.

Cameron Mack, Director, Science and Information Branch, Ontario Ministry of Natural Resources, noted that the OWOH model is a "wildlife idea," launched in 2004 by the Wildlife Conservation Society (WCS) using insights from wildlife, domestic animal and public health experts. OWOH recognizes the need to work across traditional organizational structures to establish a holistic approach to preventing disease and for maintaining ecosystem integrity for the benefit of humans, domestic animals and the world's biodiversity.

Canada's National Wildlife Disease Strategy (2004)[2] , which includes goals of prevention, early detection, rapid response, effective disease management, education and training and communication, is aligned with many OWOH principles. However, adequate resources for infrastructure and capacity to implement the strategy have not been forthcoming.

CCWHC demonstrates the value of an integrated, partnership approach to the delivery of wildlife health services. It provides a national approach that promotes consistent and coordinated efforts across multiple jurisdictions and sectors (federal/provincial/territorial government, private sector, veterinary colleges and NGOs) and a common national platform for wildlife health science, data and information collection and sharing. As such, the CCWHC is also strongly aligned with OWOH principles. There are, however, challenges related to working nationally across traditional organizational structures (lack of clarity of roles and responsibilities; information and operational silos; leadership) and sustainability challenges (long-term funding; appropriate strategic positioning).

In Ontario, there has been successful horizontal integration across ministries responsible for wildlife, environment, agriculture and public health to address disease control concerns.

The CCWHC and the *National Wildlife Disease Strategy* are excellent foundations for moving forward on an OWOH approach. Continued collaboration with public health agencies and agricultural/veterinary colleagues is important, as well as engagement of stakeholders and the public on OWOH issues.

Paul Sockett, Science Advisor, Communicable Disease Control Division, First Nations and Inuit Health Branch, PHAC, noted that there are approximately 1 million First Nations and Inuit people living in Canada, many of whom live in rural and semi-isolated or isolated communities and are dependent on the environment for their livelihood and their food, especially traditional foods. Environmental contamination (e.g. chemically or biologically contaminated water) and direct contact with infected animals (e.g. food, bites, insect vectors) are a few of the risks related to interaction with the environment that can affect the health of indigenous people.

With the increased availability of non-traditional foods and contamination concerns (e.g. mercury in fish), consumption of traditional foods has decreased. This and other factors have contributed to the overall poor health status of many indigenous people.

[2] available at http://www.cws-scf.ec.gc.ca/cnwds/index_e.cfm (accessed March 14, 2010)

There is an increasing recognition among First Nations and Inuit people that, even though wild food is more contaminated today than in the past, traditional foods are able to provide a healthier diet than foods in the grocery store. Additionally, there are other benefits to increasing dependence on the environment, including preservation of indigenous knowledge of animals, plants and ecosystems (e.g. taxonomy, sustainable management practices).

Indigenous knowledge is also important for monitoring the impact of climate change, which may facilitate the importation and establishment of diseases and disease vectors into Canada.

There is a need for improved understanding on disease risk factors and the impact of diseases in order to identify priorities, develop policy and implement surveillance and prevention activities. There are significant knowledge gaps related to First Nations and Inuit health, including data on food-borne illness, waterborne illness and specific risk factors influencing exposure.

Open Forum Discussion

Panel members continued to share their perspectives and insight related to OWOH in an open forum session. Key messages included:

- The economic, agricultural and human health advantages of OWOH need to be continually woven into discussions at the political level. There is a need to strategically identify and make known the relevance of OWOH to the political agenda, such as the benefits of collective action, especially during the coming budget-cutting exercises.

- A powerful way to raise the profile of OWOH would be through a champion who would "shout loud and hard" about the issues.

- The federal government should be a strong partner in OWOH, but it is not required to provide leadership or direction. The leadership to drive the agenda forward and influence policy needs to come from the academic community, NGOs and animal health, human health and ecosystem health professionals. There is an opportunity to create an innovative inter-jurisdictional and multidisciplinary partnership model.

- Industry needs to be included in OWOH discussions and a partner in implementation. It will be important to engage innovative industry leaders who can bring their sectors to the table, and who can communicate to their colleagues the value and benefit to industry of their participation.

- It is important to continue building the networks and the capacity to work collaboratively and holistically. Creating and maintaining open, trusting relationships with colleagues across disciplines and regions does not require significant funding.

- To better engage the public health community on OWOH, there is a need to broaden the focus from zoonotic diseases to include the value of healthy wildlife populations and biodiversity, prevention, health promotion, and poverty reduction. These are the issues that will resonate with the public health sector.

- There is a need to change public perception so that there is recognition of the link between the environment and personal health. The work that has already been done and the science that exists can be used as springboards to develop this awareness.

- A broader perspective that considers the economic, social and cultural value of biodiversity needs to be applied when assessing risk versus benefit of changes in ecosystem health.

- The linkages between culture, lifestyle, risk, and the environment and how they impact a community needs to be demonstrated. First Nations and Inuit communities can provide a living model of OWOH.

- Legislative and policy reforms will be required to address roles and responsibilities and ensure regulatory tools are in place.

- Science priorities and collaborative opportunities need to be identified.

- OWOH needs to be quantified in terms of real costs; both the cost of action and the cost of inaction need to be articulated.

Discussion and Feedback

In small groups, participants described some of the activities currently underway by Canadian wildlife experts that demonstrate OWOH approaches related to surveillance, research, communication, education and control/regulatory actions. Participants also discussed the activities and strategies that should be undertaken by wildlife experts and governments at national and international levels to further the implementation of OWOH approaches.

The following section provides an overview of plenary reports and table notes.

Selected Current Activities

Surveillance

- CCWHC National Disease Surveillance Program
- North American Avian Influenza surveillance
- Rabies in Quebec
- West Nile Virus
- Ongoing monitoring of Northern water supplies
- Northern contaminants program
- Marine populations monitoring
- Chronic Wasting Disease (CWD) monitoring
- Dead and live bird collection and diagnostics

Research

- Zoonotic disease research
- International Polar Year projects
- Antimicrobial resistance
- Traditional food safety and security
- Specific wildlife disease research, including trichinellosis in marine mammals, avian cholera
- Waterborne diseases

Communication
- Canadian Animal Health Surveillance Network (CAHSN)
- Federal Parasitology Network
- CCWHC website, database and newsletter
- PHAC website includes OWOH

Education
- Some schools of public health and some veterinary curricula cover OWOH concepts
- Strong zoonotic focus in veterinary medicine education
- Hunter training
- Raptor education program in Quebec
- CCWHC related graduate programs
- Education program to build agency personnel by CCWHC
- Information sheets for medical officers

Control/Regulatory Action
- Rabies control in Eastern provinces
- CWD, interprovincial movement of deer
- Food safety (CFIA, DFO)

Future Activities
Engagement of Key Players
- There is a need to find a better way to engage all three areas – human health, animal health, ecosystem health – in participating on collaborative efforts.
- The involvement of veterinarians in public health and wildlife health agencies should be increased, especially at the provincial level.
- Roles, responsibilities, mandates and leads of partners need to be shared and clarified.
- An "outside of government" organization/agency is needed to lead and integrate OWOH implementation and participation.
- Hold a national conference/workshop.

Professional Training and Education:
- There needs to be an integrated approach for training inter-disciplinary scientists. The trend toward specialists has led to a lack of "generalist" scientists.
- OWOH concepts need to be integrated into veterinary curricula and extension programs.
- Succession planning is needed to ensure knowledge exchange (e.g. to ensure research of students is maintained).
- There should be more support (funding, resources) for veterinary students to be involved in wildlife management.
- Create networking opportunities (through curricula) to bring together students in veterinary and human medicine colleges.

Research and Surveillance:

- Research (not only scientific, but also social, political, etc.) needs to focus on integrated, inter-disciplinary questions and applied projects. Experience with antimicrobial resistance could provide a model.
- Mechanisms are needed for integrating research that is already being done into an "OWOH framework."
- Databases need to be created to collect information and facilitate information sharing; jurisdictional and confidentiality issues will need to be addressed.
- Improvements are needed on the collection and dissemination of agricultural data.
- Improved wildlife monitoring is needed, especially in the North.
- A national, integrated and coordinated surveillance system is needed.
- More and improved diagnostic tests need to be developed for identifying disease in wildlife populations.

Policy Development and Implementation:

- Inter-jurisdictional (federal-provincial/territorial) roles and responsibilities need to be clearly defined and understood; need to avoid overlap, duplication, and gaps.
- The *National Wildlife Disease Strategy* needs to be implemented, moving from theory to action.
- Better targets need to be implemented to reduce climate change impacts.
- Policy needs to be developed to address human population and food security issues, nationally and globally.
- Risk assessments for specific diseases, including economic impacts, will help direct decision-making.

Funding:

- Complex issues are complex to fund.
- Funding organizations need to recognize and value the effectiveness of multi/inter-disciplinary, collaborative research.

Communication:

- Ongoing public education to increase awareness of OWOH (e.g. the impacts of environmental change on health). Focus less on disease and more on health.
- Introduce OWOH concepts into public school curricula at the elementary level and continue through to secondary level to build understanding in the next generation of citizens.
- Better linkage of science, policy and the community/public for better exchange and application of knowledge, and to build trust within the community.
- More communication at the community level.
- National communication strategy that includes mechanisms for coordinating data collection and reporting.
- Improved networks/communication mechanisms to link disciplines (two-way communication, vertical and horizontal communication).

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