



Dr. James Kile is a Veterinary Medical Officer with the U.S. Centers for Disease Control and Prevention (CDC). He serves as Chief of the Animal-Human Interface Initiative within the Influenza Program at CDC Vietnam. In this position, he supports surveillance and research of influenza and other zoonotic diseases through cooperative agreement One Health partnerships with both the Vietnam Ministry of Health and the Ministry of Agriculture and Rural Development.

Before joining the U.S. Government, Dr. Kile was a veterinary medical practitioner and a college educator. With the U.S. Department of Agriculture, he held positions as a food-borne disease epidemiologist, a developer of food safety policy, and a food safety program manager and division director. He also served at CDC Atlanta as an Epidemic Intelligence Service Officer.

Dr. Kile holds a DVM from the University of Tennessee, and a MPH from the University of Washington. He is board-certified as a Diplomate with the American College of Veterinary Preventive Medicine, and in Public Health with the National Board of Public Health Examiners. Dr. Kile has presented at international conferences related to One Health activities, and has publications related to outbreak investigations of vector-borne and zoonotic diseases.

## **JAMES KILE**

Veterinary Medical  
Epidemiologist

*U.S. Centers for Disease  
Control and Prevention  
Vietnam*

# ONE HEALTH COLLABORATIVE MECHANISMS

at the International Level in Vietnam

## James C KILE

Veterinary Medical Epidemiologist  
Chief, Animal-Human Interface Initiative Influenza Program  
U.S. Centers for Disease Control and Prevention  
U.S. Embassy, Hanoi, Vietnam

---

## BACKGROUND

Promoting and implementing One Health collaborative activities, between governments and/or across government sectors, can be both challenging and rewarding.

The concept of the interaction of humans, animals, and the environment affecting the health of all has, from a Western medicine perspective, been around since the ancient Greeks or earlier (1). In his treatise on "Airs, Waters, and Places", Hippocrates suggested that to investigate medicine properly, one must first consider the seasons, and then the wind, the water, and the ground.

In the mid-1800s, the term "zoonosis" has been credited to a German physician, who indicated there should be no dividing line between human and animal health (2,3). In the mid-1940s, a U.S. veterinarian further promoted this concept by establishing the field of veterinary public health at the CDC (2).

In the 1960s, a veterinary epidemiologist spoke of "one medicine", calling for a unified human and

veterinary approach to combat zoonotic diseases, and providing a modern foundation for the concept of One Health (2,4).

While the term One Health had already been in use by 2004, in that year, the Wildlife Conservation Society held a meeting of health experts from many fields, and referring to "One World-One Health" (5).

In 2007, a Joint Task Force including the American Veterinary Medical Association (AVMA) and the American Medical Association (AMA) adopted a vision, definition, and scope in support of One Health (6). This definition, "The collaborative effort of multiple disciplines - working locally, nationally, and globally - to attain optimal health of humans, animals, and our environment", was also referenced in a 2008 document on One Health by a joint United Nations' organizational consultation that included FAO, OIE, and WHO (7).

Also in 2008, WHO, FAO, and OIE published a zoonotic diseases guide for establishing collaborations between animal and human health sectors (8). The guide identifies establishing a sustainable

coordinating mechanism for collaboration in three areas, 1) surveillance and information sharing, 2) coordinated response, and 3) risk reduction.

In 2010, FAO, WHO, and OIE developed a Tripartite Concept Note that further identified the “sharing of responsibilities and coordinating global activities to address health risks at the animal-human-ecosystems interface” (9). This concept note was shared with the international community at the International Ministerial Conference on Avian and Pandemic Influenza in Hanoi, Vietnam.

The Tripartite Concept Note provides a background, strategic alignment, collaborations and joint actions, and the way forward that partners may consider when conducting One Health activities. This includes identifying complementary animal-human agendas, and a strategic alignment identifying collaborative needs. Finally, the Concept Note identifies a number of collaborative and joint actions that may occur to meet these agendas and needs.

These One Health references and others form a background of information on what is One Health, as well as how to provide support and assistance domestically or internationally to conduct One Health surveillance and research activities with cross-Ministry partners.

This report describes the background and steps to a One Health collaborative mechanism at the national level in Vietnam, with international support, and used as a platform for cooperative public and animal health surveillance and research activities between the U.S. Centers for Disease Control and Prevention (CDC) and the Vietnam Ministries of Health (MOH) and of Agriculture and Rural Development (MARD).

## **INFLUENZA PROGRAM, US-CDC VIETNAM:**

CDC began collaborative activities with MOH in 1997. CDC further established an Influenza Program (IP) in 2005, providing technical assistance and funding support for a national influenza surveillance system with the MOH National Institute of Hygiene and Epidemiology (NIHE).

Additional program expansion occurred in 2007 with MOH General Department of Preventive Medicine (GDPM) support for influenza pandemic preparedness and response. In 2009, CDC IP expanded again with a NIHE cooperative agreement for research of influenza and other infectious diseases, as well as the establishment of the Animal-Human Interface (AHI) Initiative for influenza and other zoonotic diseases.

The AHI Initiative established its first activities in 2010 and in 2011 through both the NIHE surveillance and research cooperative agreements. The activities included collaboration with the animal health sector. In 2012, CDC established a unique cooperative agreement with the MARD Department of Animal Health (DAH), for surveillance and research at the animal-human interface of influenza and other zoonotic diseases in Vietnam, and which also called for collaboration with the human health sector.

Mechanisms are in place at the human health and animal health sectors to conduct joint cross-Ministry surveillance and research activities of influenza and other zoonotic diseases.

## **COLLABORATIVE MECHANISMS:**

While discussions of One Health concepts and approaches continue at international levels, implementation of One Health activities occurs in many countries. The international partners and inter-Ministry sectors that develop and implement these activities must each identify and address their own mechanisms for achieving cross-sector One Health approaches to surveillance, response, control, and communication of zoonotic diseases.

Vietnam MOH and MARD already have experiences working cross-Ministry on a number of occasions, including continued zoonotic disease outbreaks in poultry and human cases of Highly Pathogenic Avian Influenza since 2003, and cases of Severe Acute Respiratory Syndrome (SARS) in 2003. CDC provided assistance and support during these periods, to both MOH and to MARD.

Using existing bi-lateral U.S. Government and Government of Vietnam relations and framework, and developing more specific bi-lateral and multi-sector formal agreements, technical assistance support, and cooperative agreement funding mechanisms cross-Ministry, we designed and are implementing surveillance and research activities at the animal-human interface of influenza and other zoonotic diseases in Vietnam.

These activities supported cooperation and collaboration between both the animal (MARD) and human (MOH) health sectors. The mechanisms also work both ways, with MOH supporting and funding activities with MARD, and with MARD supporting and funding activities with MOH.

Following is a brief overview of the steps to develop a CDC-MOH-MARD One Health collaborative mechanism in Vietnam. Many of the steps occurred concurrently with other steps.

1. 2009-2010: Introduce AHI program in-country, with funding support and technical assistance from CDC.
2. 2009-2010: Meet with Ministerial partners of existing IP platforms; introduce and establish AHI activities through this platform.
3. 2010-2011: Meet with Ministerial partners of proposed IP/AHI platform.
4. 2010: Develop for signatures a Letter of Intent at the Ministerial level of both countries.
5. 2010-2011: Two AHI studies supported through established MOH cooperative agreements with CDC.
6. 2010-2012: Develop proposed program with funding support and technical assistance from CDC.
7. 2011: Conduct a workshop with cross-Ministerial Department level partners that would be participating in AHI activities with CDC.
8. 2011: Develop for signatures a Letter of Agreement at the Department level of cross-Ministerial partners.
9. 2012: AHI cooperative agreement awarded by CDC to Vietnam Department of Animal Health (MARD).
10. 2012-2015: Implement program activities at international partner level and at cross-Ministerial level.

## **ACCOMPLISHMENTS:**

Since 2009, there have been a number of accomplishments in developing and implementing One Health CDC-MOH-MARD collaborative activities in Vietnam. First, using the CDC-NIHE cooperative agreement, in 2009-2010, NIHE and DAH conducted a pilot AHI cross-section study of the sero-prevalence and subtypes of Influenza A viruses in people, pigs, and poultry in a northern province.

In 2010, representatives of MARD and DAH signed a Letter of Intent, along with representatives of U.S. Department of Health and Human Services and CDC, for research of influenza viruses and other zoonotic diseases in Vietnam. In 2011, representatives of the main MOH and MARD sectors that would be working together on CDC cooperative agreement projects, signed a Letter of Agreement for an inter-agency and intra-agency partnership for influenza and other zoonotic diseases projects and activities in Vietnam.

Also in 2011, NIHE conducted along with DAH, a 4-month extension of the AHI pilot study to further look over time at Influenza A virus subtypes and sero-prevalence in people, pigs, and poultry. Results of both the 2010 and 2011 studies identified a number of influenza viruses in humans and animals, although at low levels in the community. There was also a potential reverse zoonotic transmission of Influenza A/H1N1 2009 from humans to pigs. Results of these studies have been presented at international conferences.

With both NIHE and DAH cooperative agreements in place in 2012, CDC plans a number of AHI

surveillance and research studies with our MOH and MARD partners, through both mechanisms and with both sectors conducting the study activities together. The studies will be concentrating on the prevalence and subtypes of Influenza A viruses of people, pigs, and poultry in rural communities, the risks and transmission factors, and the phylogenetic co-evolution of the influenza virus in both humans and animals in Vietnam.

## **DISCUSSION:**

Building upon existing bi-lateral government relations and in-country CDC programs with MOH, the AHI Initiative has enhanced and added to the existing cooperative partnerships. This occurred through both funding support and technical assistance. The AHI Initiative added One Health activities to the MOH cooperative agreement platform, and added a new cooperative agreement platform with MARD. The AHI Initiative established cross-Ministry agreements at appropriate organizational levels to provide for MOH and MARD collaborative One Health surveillance and research projects and activities. Collaborative mechanisms are in place with both Ministries to allow for activities from either sector, while utilizing the other sector for operations in their respective health areas.

Establishing and conducting One Health collaborative mechanisms and activities at the international level is both challenging and rewarding; with potential benefits to human, animal, and environmental health, at the national, regional, and global levels.

## REFERENCES

The Internet Classics Archive. Hippocrates. "On Airs, Waters, and Places". 400 BCE. Translated by Francis Adams. Available at, <http://classics.mit.edu/Hippocrates/airwatpl.html>; accessed 14 Dec 2012.

Kahn LH, Kaplan B, Steele JH. "Confronting zoonoses through closer collaboration between medicine and veterinary medicine (as 'one medicine'). *Veterinariaitaliana* 2007; 43(1): 5-19. Available at, <http://www.onehealthinitiative.com/publications/01%20Kahn%20et%20al%20%205-19%208Mar07.pdf>; accessed 14 Dec 2012.

One Health Initiative. Available at, <http://onehealthinitiative.com/endorsements.php>; accessed 14 Dec 2012.

JAVMA News. AMA adopts one-health policy - Physicians' association supports ties with AVMA. *JAVMA*; August 1, 2007. Available at, <https://www.avma.org/News/JAVMANews/Pages/070801b.aspx>; accessed 14 Dec 2012.

Wildlife Conservation Society. "One World - One Health". Available at, <http://www.wcs.org/conservation-challenges/wildlife-health/wildlife-humans-and-livestock/one-world-one-health.aspx>; accessed 14 Dec 2012.

The American Veterinary Medical Association. One Health Initiative Task Force. "One Health: A New Professional Imperative". July 15, 2008. Available at, [https://www.avma.org/KB/Resources/Reports/Documents/onehealth\\_final.pdf](https://www.avma.org/KB/Resources/Reports/Documents/onehealth_final.pdf); accessed 14 Dec 2012.

OIE 2008. Contributing to One World, One Health: A Strategic Framework for Reducing Risks of Infectious Diseases at the Animal-Human-Ecosystems Interface, 14 October 2008. Available at [http://www.oie.int/download/AVIAN%20INFLUENZA/OWOH/OWOH\\_14Oct08.pdf](http://www.oie.int/download/AVIAN%20INFLUENZA/OWOH/OWOH_14Oct08.pdf); accessed 14 Dec 2012.

WHO 2008. Zoonotic Diseases: A Guide to Establishing Collaboration between Animal and Human Health Sectors at the Country Level. WHO – FAO – OIE; 2008. Available at <http://un-influenza.org/files/Zoonoses02.pdf>; accessed 14 Dec 2012.

The FAO-OIE-WHO Collaboration. A Tripartite Concept Note. April 2010. Available at, [http://web.oie.int/download/FINAL\\_CONCEPT\\_NOTE\\_Hanoi.pdf](http://web.oie.int/download/FINAL_CONCEPT_NOTE_Hanoi.pdf); accessed 14 Dec 2012.