

## CONTENTS

- 1** GLOBAL COLLABORATION AND TECHNICAL EXCHANGE TO ADDRESS HEALTH THREATS POSED BY ZOOBOTIC DISEASES

---

- 2** PREDICT - WILDLIFE DISEASE SURVEILLANCE IN VIET NAM

---

- 4** STRENGTHENING COUNTRY COLLABORATION IN THE IMPLEMENTATION OF THE GLOBAL HEALTH SECURITY AGENDA

---

- 5** NEWS IN BRIEF  
TECHNICAL AND FINANCIAL SUPPORT TO BE GIVEN IN VIETNAM TO KEEP HUMANS AND ANIMALS SAFE FROM DISEASES

---

- 6** TRANSITION OF PARTNERSHIP ON AVIAN AND HUMAN INFLUENZA INTO THE NEW ONE HEALTH PARTNERSHIP FOR ZOOBOTIC DISEASES

---

- 7** RELEVANT LEGAL DOCUMENTS  
UPCOMING ONE HEALTH EVENTS

---

- 8** RECENT PUBLICATIONS IN ONE HEALTH

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## GLOBAL COLLABORATION AND TECHNICAL EXCHANGE TO ADDRESS HEALTH THREATS POSED BY ZOOBOTIC DISEASES

On 25 and 26 August 2015, an International Conference on Zoonotic Disease Prevention and Control: Addressing Health Threats Posed by Zoonotic Diseases - Global Collaboration and Technical Exchange was taking place in Ha Noi, Viet Nam. The international conference was hosted by the Ministry of Health, Ministry of Agriculture and Rural Development of Vietnam and Ministry of Health of Indonesia.

The conference brought together more than 190 participants, including representatives from countries in Asia – Pacific region, countries in Steering committee of Global Health Security Agenda (GHSA), and contributing countries on Zoonotic Disease Action Package as well as representatives from international and regional organizations. Vice Minister Nguyen Thanh Long, the Ministry of Health of Viet Nam; Vice Minister Vu Van Tam, the Ministry of Agriculture and Rural Development; Dr. Mohammad Subuh, Director General of Disease Control and Environmental Health, Ministry of Health of Indonesia and Head of Indonesia Delegation; Ms. Pratibha Mehta, United Nations Resident Coordinator in Viet Nam; and Mr. Ted Osius, United States Ambassador to Viet Nam attended and provided opening remarks at the opening session.



MOH Vice Minister Nguyen Thanh Long delivering opening speeches (Photo: PAHI)

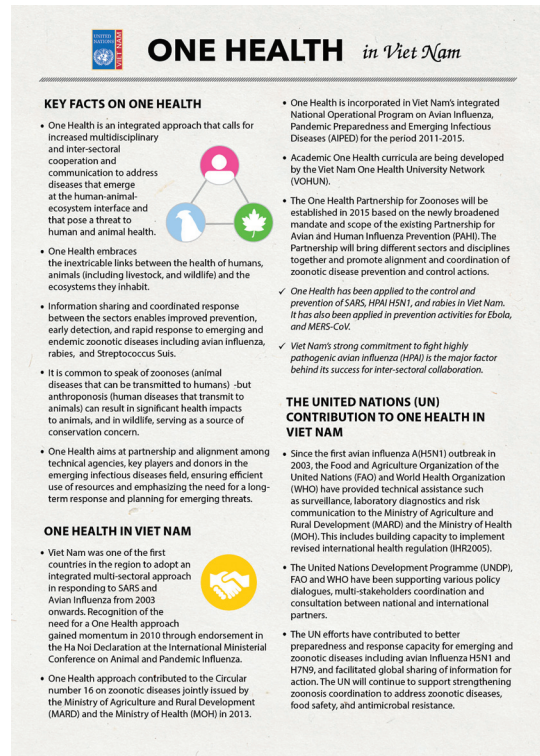
“The Global Health Security Agenda is considered to be an important global initiative to advance implementation of the International Health Regulations (IHR), and to help countries prevent, detect and respond effectively to infectious disease outbreaks in humans and animals, mitigating human suffering and the loss of human life, and reducing

economic impact. As active participants in the GHSA initiative, both Viet Nam and Indonesia have committed to work as leading countries on the Zoonotic Disease Action Package (ZDAP), contributing to global efforts in zoonotic disease prevention and control.” Said Vice Minister Nguyen Thanh Long, Ministry of Health of Viet Nam.

The conference aimed to accelerate regional and international collaboration in support of the Prevent-2 Zoonotic Disease Action Package; specifically through the development of milestones and examples of activities that countries could adapt and adopt to tangibly foster behaviors, policies and/or practices that minimize disease risk and the spillover of zoonotic diseases from lower animals into human populations.

During the conference, participants coming from different countries and organizations had the opportunity to share their experiences, best practices, and challenges in addressing Zoonotic Disease in both the animal and human sectors, to identify opportunities for strengthening regional and international collaboration, and to develop an action plan setting out activities and milestones for achieving the 5-year GHSA Prevent-2 Zoonotic Disease targets.

The key contents and outcomes of the conference were summarized to report at the GHSA meeting in Seoul in September 2015. ■



**ONE HEALTH in Viet Nam**

**KEY FACTS ON ONE HEALTH**

- One Health is an integrated approach that calls for increased multidisciplinary and inter-sectoral cooperation and communication to address diseases that emerge at the human-animal-ecosystem interface and that pose a threat to human and animal health.
- One Health embraces the inextricable links between the health of humans, animals (including livestock and wildlife) and the ecosystems they inhabit.
- Information sharing and coordinated response between the sectors enables improved prevention, early detection, and rapid response to emerging and endemic zoonotic diseases including avian influenza, rabies, and *Streptococcus*.
- It is common to speak of zoonoses (animal diseases that can be transmitted to humans) - but anthroponosis (human diseases that transmit to animals, and in wildlife, serving as a source of conservation concern).
- One Health aims at partnership and alignment among technical agencies, key players and donors in the emerging infectious diseases field, ensuring efficient use of resources and emphasizing the need for a long-term response and planning for emerging threats.

**ONE HEALTH IN VIET NAM**

- Viet Nam was one of the first countries in the region to adopt an integrated multi-sectoral approach in responding to SARS and Avian Influenza from 2003 onwards. Recognition of the need for a One Health approach gained momentum in 2010 through endorsement in the Ha Noi Declaration at the International Ministerial Conference on Animal and Pandemic Influenza.
- One Health approach contributed to the Circular number 16 on zoonotic diseases jointly issued by the Ministry of Agriculture and Rural Development (MARD) and the Ministry of Health (MOH) in 2013.
- One Health is incorporated in Viet Nam's Integrated National Operational Program on Avian Influenza, Pandemic Preparedness and Emerging Infectious Diseases (AIPED) for the period 2011-2015.
- Academic One Health curricula are being developed by the Viet Nam One Health University Network (VOHUN).
- The One Health Partnership for Zoonoses will be established in 2015 based on the newly broadened mandate and scope of the existing Partnership for Avian and Human Influenza Prevention (PAHI). The Partnership will bring different sectors and disciplines together and promote alignment and coordination of zoonotic disease prevention and control actions.
- One Health has been applied to the control and prevention of SARS, HPAI H5N1, and rabies in Viet Nam. It has also been applied in prevention activities for Ebola, and MERS-CoV.
- Viet Nam's strong commitment to fight highly pathogenic avian influenza (HPAI) is the major factor behind its success for inter-sectoral collaboration.

**THE UNITED NATIONS (UN) CONTRIBUTION TO ONE HEALTH IN VIET NAM**

- Since the first avian influenza A(H5N1) outbreak in 2003, the Food and Agriculture Organization of the United Nations (FAO) and World Health Organization (WHO) have provided technical assistance such as surveillance, laboratory diagnostics and risk communication to the Ministry of Agriculture and Rural Development (MARD) and the Ministry of Health (MOH). This includes building capacity to implement revised international health regulation (IHR2005).
- The United Nations Development Programme (UNDP), FAO and WHO have been supporting various policy dialogues, multi-stakeholders coordination and consultation between national and international partners.
- The UN efforts have contributed to better preparedness and response capacity for emerging and zoonotic diseases including avian influenza H5N1 and H7N9, and facilitated global sharing of information for action. The UN will continue to support strengthening zoonosis coordination to address zoonotic diseases, food safety, and antimicrobial resistance.

One Health Factsheet of UN Viet Nam.

## PREDICT - WILDLIFE DISEASE SURVEILLANCE IN VIET NAM

The rate of infectious diseases emergence, especially zoonotic pathogens that are transmitted between humans and animals, is rising. Human activities such as handling of bush-meat and wildlife trade, as well as land use change and human encroachment into wildlife habitat, are pushing humans and animals in closer contact and making opportunities for disease spillover from wildlife to human populations. Of 1,415 human pathogens listed, approximately 60% are known to be zoonotic and multiple pathogens are related to a human emerging infectious disease (Taylor et al., 2001). The origin of HIV virus has been shown to be associated with hunting and consumption of non-human primates (Gao et al., 1999) and studies of transmission of Ebola virus to human populations indicate an association with contact between infected great apes and humans via hunting and consuming primates (Leroy et al., 2004). The SARS pandemic was associated with the wild carnivore trade and demonstrated a link to the farming and trading of civets in markets in Southern China (Tu et al., 2004). Identifying pathogens of pandemic potential in wildlife and understanding and mitigating the risks of spillover into humans or domestic animals is critically important to the global effort to reduce the emergence of pandemic threats.

The PREDICT project was designed to build a global early warning system of zoonotic disease at wildlife/livestock/human interfaces. The project is one of multiple components of the Emerging Pandemic

Threats Program funded by the United States Agency for International Development (USAID). In Viet Nam the extensive study identified potential high-risk interfaces for zoonotic disease spillover from wildlife to humans performed by Wildlife Conservation Society in partnership with Department of Animal Health (DAH), Ministry of Agriculture and Rural Development; Vietnam National University of Agriculture (VNUA); provincial wildlife management and animal health departments; national rescue centers and NGOs. The project also established the local capacity to conduct disease surveillance and pathogen detection in wildlife at high-risk interfaces for disease transmission, many of which are linked to domestic and international trade of wildlife.

### WILDLIFE DISEASE SURVEILLANCE



Figure 1: Collecting samples from fruit bats in Soc Trang Province (Photo: Boripat Siriaroonrat)

Through the collaborative effort with Vietnamese research, academic and government institutions, PREDICT performed 90 sampling events across Viet Nam, collected nearly 7,000 samples from over 2,054 individual wild animals. The sample collection targets at high-risk disease transmission interfaces where live animals are sold, restaurants serving bush-meat, wildlife farms, wildlife rescue centers and sanctuaries, and wildlife in/around human dwelling.

Over 16,300 family conventional PCR assays were implemented in national and international laboratories to screen for unknown and known viruses from 10 virus families (Arenaviruses, Flaviviruses, Paramyxoviruses, Hantaviruses, Bunyaviruses, Coronaviruses, Henipaviruses, Filoviruses, Herpesviruses and Rhabdoviruses). The positive suspect samples were confirmed by cloning and sequencing to identify the viruses. In Viet Nam, during 5 years of the project, 24 novel viruses (2 Corona, 2 Herpes, 5 Paramyxo and 15 Rhabdoviruses) and 3 known viruses (1 Corona, 1 Paramyxo and 1 Influenza) were detected. Further work will be focused on understanding the biological and behavioral factors influencing the spillover, amplification and spread of pathogens at these high-risk interfaces to mitigate the risk of pandemic disease emergence.

### CAPACITY BUILDING FOR WILDLIFE PATHOGEN DETECTION

PREDICT project provided methods of wildlife identification, safe handling, and sample collection to provincial-level and district-level animal health officers and wildlife management officers through



**Figure 2: Practicing DNA electrophoresis methods during the PREDICT Molecular Diagnostics Training at the Vietnam National University of Agriculture (Photo: WCS Viet Nam)**

their participation in sampling events in the field. Participants joined the sampling trip as members of the sampling team for practical training and the participants were trained in the relevant theory before practicing collecting samples with wildlife experts of Wildlife Conservation Society. New sampling

techniques from around the world were applied and optimized to collect samples in Viet Nam, such as non-invasive techniques for the collection of saliva samples from non-human primates. These techniques were also provided to staff of Department of Animal Health and Forest Protect Department during the wildlife farm sampling trips in Dong Nai Province.

PREDICT also provided molecular diagnostic protocols for wildlife samples to laboratory technicians with training provided by PREDICT laboratory experts from the University of California, Davis, and Wildlife Conservation Society. The participants were provided protocols of conventional PCR assays to screen for a range of viral families and taught laboratory biosafety through hands-on trainings organized at the Vietnam National University of Agriculture laboratory. The use of appropriate sample storage equipment, laboratory equipment and the PREDICT positive control was also covered in laboratory trainings.



**Figure 3: Wildlife Health Training for wildlife management officers and animal health officers in Dong Nai Province**

During the 5 years of the project, a total of 561 participants from different agencies from the fields of wildlife conservation, animal health, human health, wildlife management, law enforcement and research/academic institutions were involved in PREDICT trainings. These participants were not only taught methods of sample collection and sample diagnosis, but also introduced to the One Health approach to understanding and preventing the emergence of disease of pandemic potential. The approach was combined into PREDICT and WCS Viet Nam trainings in collaboration with partner agencies and institutions. ■

(PREDICT – WCS Viet Nam)

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## STRENGTHENING COUNTRY COLLABORATION IN THE IMPLEMENTATION OF THE GLOBAL HEALTH SECURITY AGENDA

On September 7th – 9th 2015, the Government of Republic of Korea hosted a High Level Meeting on Global Health Security Agenda in Seoul, Korea with the participation of more than 300 delegates from over 50 countries. The conference aims at strengthening international collaboration and encouraging engagement of governments, non-governmental organizations and international organization in the development and implementation of GSHA's 11 action packages in order to achieve GSHA goals.

President Park GeunHye represented the Government of Republic of Korea to deliver opening remarks and announce the commitment to contribute 100 million USD to global health security activities. US President Barack Obama, Finland President Sauli Niinisto also gave video opening speeches. Conference speeches highlighted the importance of GSHA in health security as well as economic, politic security at global and country level; inter-sector collaboration under Government direction and collaboration across countries were also emphasized as essential for ensuring global health security. In July this year, the United States announced the assistance to at least assist at least 30 countries to achieve the GSHA targets by 2020, including 17 countries and \$1 billion and additional focus countries to be announced soon. More than half of this

investment will focus on African countries. G-7 countries also reiterated their pledge to match our commitment by assisting a collective total of at least 60 countries.

Representatives from participating countries delivered presentations and joint developed the Seoul Declaration which promotes international cooperation for global health security; countries signaled commitments in the GSHA's 11 Action packages and called for engagement of non-governmental organizations and international agencies in GSHA activities in 5 years.

Seoul Declaration was adopted, which highlighted the linkage among countries in diseases prevention "infectious diseases are not solely a public health problem for developing countries. These public health problems have major impacts on economy, society, and politic security at country and global level". Seoul Declaration motivated countries, non-governmental organizations, international organizations to cooperate and develop a detailed plan for implementation of 11 GSHA Action Packages, filling in the gaps and strengthening countries capacity to attain GSHA sustainable targets.

Moving forward, Indonesia will take the reins from Finland to lead the GSHA in 2016, and Netherlands will host next year's next High Level Event to keep our feet to the fire. ■



(Photo: <http://ghsa2015seoul.kr/>)

## News in brief

Veterinary Law was official announced by the President Truong Tan Sang via the Order No. 03/2015/L-CTN dated 3 July 2015. The President's Office organized a press conference to announce the Order on 17 July 2015. The Veterinary Law will take effect from 1 July 2016 and become an important legal basis in order for Vietnam's Animal Health sector to be more effective, contributing to the society development and international intergration. ■

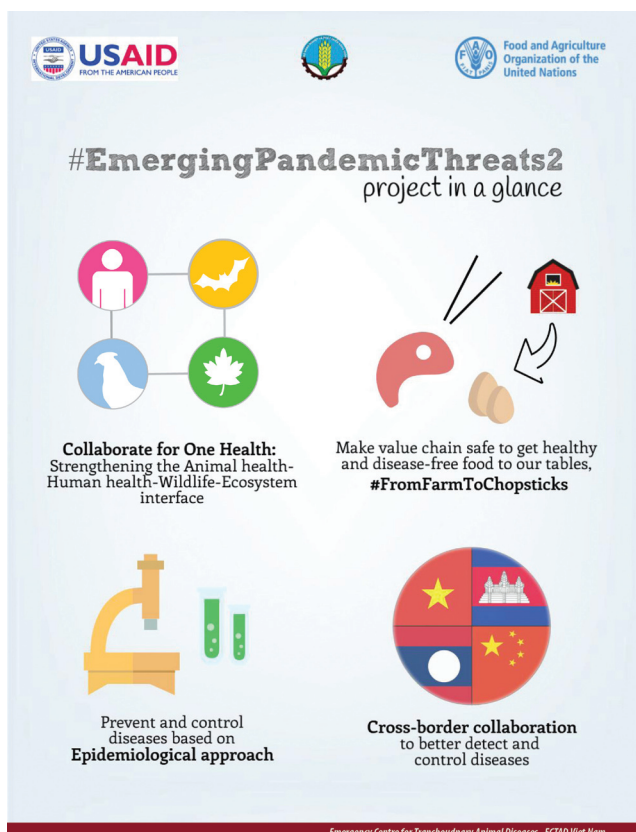
On the occasion of the Communist Party of Vietnam General Secretary Mr. Nguyen Phu Trong's official visit to the United States, a Memorandum of Understanding (MOU) between Viet Nam Ministry of Agriculture and Rural Development (MARD) and United States Agency for International Development (USAID) was signed on July 7, 2015. The purpose of this MOU is to express the intent of the Participants to implement the Emerging Pandemic Threats 2 (EPT-2) Program, to support the Global Health Security Agenda (GHSA), and to help improve the technical capacity of relevant Government of Viet Nam entities and partners for the prevention, early identification, and response to dangerous pathogens in animals that may pose significant threats to human health. ■

Toward developing a One Health oriented training program for International Master of Public Health, Hanoi Medical University and VOHUN National Coordinating Office co-organized a conference from 11-13 September 2015 in Phu Quoc, Kien Giang. International and national experts reviewed the active curriculum of the training program for One Health in the International Master of Public Health. They came up with training objectives, criteria, form of recruitment, and the length of training. The curriculum will include seven compulsory courses (24 Credits); 3 out of 6 selected courses (8 Credits); and steps toward graduation aimed toward completing a final thesis (8 Credits). The training program will be taught in English and the contents of One Health will be integrated and emphasized in each subject. ■

## TECHNICAL AND FINANCIAL SUPPORT TO BE GIVEN IN VIETNAM TO KEEP HUMANS AND ANIMALS SAFE FROM DISEASES

The Food and Agriculture Organization of the United Nations (FAO) Viet Nam and the Government of Viet Nam are joining hands in making both livestock and people in Viet Nam safer from potential diseases thanks to the 2,1 million USD of funding provided by the United States Agency for International Development (USAID).

A signing ceremony to celebrate the commencement of the project "Emerging Pandemic Threats 2 (EPT2): Risk Mitigation and Management of Human Health Threats along Animal Value Chains" is taking place in Hanoi with the presence of FAO Viet Nam, Ministry of Agriculture and Rural Development (MARD), and USAID Viet Nam. The Emergency Centre for Transboundary Animal Diseases (ECTAD) Programme within FAO Viet Nam will support MARD, specifically with the Departments of Animal Health (DAH), Livestock Production (DLP), National Agriculture Extension Centre



(Figure: FAO Viet Nam)

(NAEC) and CITES Management Authority of the Viet Nam Administration of Forestry to implement this new project.

The four main components of the project include: 1) One Health Mechanisms and Collaboration; 2) Disease Risk Reduction Along Livestock Value Chains from Farms to Chopsticks; 3) Surveillance for Disease Prevention and Control; and 4) Cross-border collaborations in the Lower Mekong and Red River Deltas to Prevent Disease Spread. While this project focuses largely on disease prevention and control, it will also contribute to food safety, food security and improved livelihoods for livestock farmers.

“Our new project will be built upon a long standing successful Avian Influenza emergency response programme previously implemented by the ECTAD country team and they will once again play an important role in carrying out FAO

collaboration and support in Viet Nam.” stated Mr. Jong Ha Bae, the Country Representative of FAO Viet Nam.

“Past collaborations between MARD and FAO have resulted in drastically reducing the impacts of avian influenza virus on poultry and people by improving capacity to detect and respond to avian influenza. However, after surviving the crisis surrounding the emergence of highly pathogenic avian influenza (H5N1), the need for a fundamentally sustainable approach to fight against not only avian influenza, but also other livestock and zoonotic transboundary diseases has emerged. Success of this program will also depend on collaboration with public health partners as some diseases of concern can transmit to people” said Dr. Scott Newman, the Senior Technical Coordinator of FAO ECTAD Viet Nam. ■

(FAO Viet Nam)

## TRANSITION OF PARTNERSHIP ON AVIAN AND HUMAN INFLUENZA INTO THE NEW ONE HEALTH PARTNERSHIP FOR ZOOSES

**O**n 12th August 2015, the Government Office has officially approved on transitioning the Partnership for Avian and Human Pandemic Influenza (PAHI) into One Health Partnership for Zoonoses as per Official Letter No. 6334/VPCP-QHQT.



(Photo: PAHI)

PAHI Partnership was established in 2006 with a mission to facilitate avian and human pandemic influenza prevention and control (OPI 2006 – 2010), later was extended to cover AIPED 2011 – 2015. At the inter-ministerial conference for avian and human influenza prevention (IMCAPI) in 2015, Vietnam committed on its leading role in the application of One Health approach through the development of “Vietnam Integrated National Operational Program on Avian Influenza, Pandemic Preparedness and Emerging Infectious Diseases” (AIPED), 2011-2015. It is proposed in the AIPED as well as recommendations of the National One Health Conference (April 2013) to

revise PAHI into One Health Partnership for Zoonoses, in order to comprehensively and sustainably respond to recent diseases situation in Vietnam.

The transition of PAHI into One Health Partnership for Zoonoses is essential for prevention over avian influenza and

emerging infectious diseases through a One Health approach, which reflects shared intention of national stakeholders and international donors. The revised Partnership would bring together relevant One Health stakeholders, including Government of Vietnam agencies, international organizations, non-governmental organizations and private sector under Government of Vietnam’s leadership.

The Ceremony for Launching and Signing the revised Partnership Framework is expected to be soon organized by the Project “Strengthening Capacity for the Implementation of One Health in Vietnam” funded by USAID through UNDP. ■

## RELEVANT LEGAL DOCUMENTS

### DOCUMENTS ISSUED BY GOVERNMENT OFFICE

Order No. 03/2015/L-CTN dated 03/7/2015 by the President on promulgation of the Veterinary Law

Official Letter No. 6334/VPCP-QHQT dated 12/8/2015 by the Government Office approving on re-launching the Partnership on Avian and Human Pandemic Influenza as Vietnam One Health Partnership for Zoonoses

Official Telegraph No. 1632/CĐ-TTg dated 11/9/2015 by the Prime Minister on enhancing dengue prevention and control

### DOCUMENTS ISSUED BY MARD

Directive No. 7124/CT-BNN-TY issued on 31/8/2015 by Ministry of Agriculture and Rural Development on handling livestock and poultry slaughtering facilities class C reported in Circular 45/2014/TT-BNNPTNT

Directive No. 7285/CT-BNN-CN issued on 07/9/2015 by Ministry of Agriculture and Rural Development on enhancing control over prohibited chemicals in livestock production

Official Letter No. 1690/TY-TYCD issued on 07/9/2015 by Department of Animal Health guiding the implementation of the Directive No. 7124/CT-BNN-TY dated 31/8/2015 by Minister of Agriculture and Rural Development

### DOCUMENTS ISSUED BY MOH

Decision No. 2369/QĐ-BYT issued on 16/6/2015 by Ministry of Health categorizing Middle East respiratory syndrome coronavirus (MERS-CoV) into Class A - extremely dangerous infectious diseases as per the Law on Prevention and Control of Infectious Diseases

Official Letter No. 4901/BYT-TT-KT issued on 09/7/2015 by Ministry of Health requesting provincial Department of Health to direct local Center of Communication and medical service facilities to access 6 lectures on MERS-CoV prevention and to train local health staff

## UPCOMING ONE HEALTH EVENTS

### October 2015

#### 3rd GRF One Health Summit 2015

Fostering interdisciplinary collaboration for global public and animal health  
4 - 6 October 2015, Davos, Switzerland

#### Conference on beef cattle production

8 October 2015, Hanoi

#### Developing a One Health field based training program for professionals (human health and animal health)"

Hanoi School of Public Health, VOHUN  
Da Nang, 16-18 October, 2015

#### Conference on minization the use of antibiotic for growth stimulation

MARD, MOH and relevant stakeholders  
Tentatively October 2015

#### Conference on swine and cattle production

Tentatively October 2015, Hanoi

#### Conference on high-quality rabbit production

Tentatively October 2015, Ninh Binh

### November 2015

#### GHSA Meeting

Conference theme: "Strategic Approach to Global Health Security through One Health Innovation: Vision 2035"  
Kampala, Uganda, 16-20 November, 2015

#### WVA/WMA Global Conference on One Health

VOHUN NCO  
November, 2015

### December 2015

#### The second workshop on development of curriculum for International Masters of Public Health (OH-oriented): meeting with other universities

Hanoi Medical University, VOHUN  
Hue, 4-6 December, 2015

<p><b>Fifth International Conference on Infectious Disease Dynamics</b>          Clearwater Beach, FL, December 1-4, 2015  <a href="http://www.epidemics.elsevier.com">http://www.epidemics.elsevier.com</a></p>
<p>Department of Livestock Production's 10th Anniversary          Tentatively 15 December 2015, Hanoi</p>
<p><b>March 2016</b></p>
<p><b>17th International Congress on Infectious Diseases (ICID)</b>          International Society for Infectious Diseases          Hyderabad, India, March 2-5, 2016</p>
<p><b>December 2016</b></p>
<p><b>Một sức khỏe – Sức khỏe Sinh thái 2016</b>          Trung tâm Hội nghị &amp; Triển lãm Melbourne, Úc          4-7/11/2016  <a href="http://oheh2016.org">http://oheh2016.org</a></p>
<p style="text-align: center;"><b>RECENT PUBLICATIONS IN ONE HEALTH</b></p>
<p><b>One Health – an overview of best practices. Report and Briefing Paper for the Government of Viet Nam and related stakeholders on current global and regional One Health initiatives.</b> Leslie D. Sims. Commissioned by SCOH Project. September 2015</p>
<p><b>One Health surveillance - more than a buzz word?</b>          K.D. Stärk, M. Arroyo Kuribreña, G. Dauphin, S. Vokaty, M.P. Ward, B. Wieland, A. Lindberg. Preventive Veterinary Medicine. June 2015. 120(1):124-130.  <a href="http://www.sciencedirect.com/science/article/pii/S0167587715000355">http://www.sciencedirect.com/science/article/pii/S0167587715000355</a></p>
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<p><b>Barriers to, efforts in, and optimization of integrated One Health surveillance: a review and synthesis.</b>          N. Uchtmann, J.A. Herrmann, E.C. Hahn III, V.R. Beasley. EcoHealth. April 2015. <a href="http://link.springer.com/article/10.1007%2Fs10393-015-1022-7">http://link.springer.com/article/10.1007%2Fs10393-015-1022-7</a></p>
<p><b>One Health: more than just collaboration.</b> Veterinary Record. April 2015. 176(15):375-376. <a href="http://www.ncbi.nlm.nih.gov/pubmed/25858988">http://www.ncbi.nlm.nih.gov/pubmed/25858988</a></p>
<p><b>Emerging viral diseases: the One Health connection: workshop summary.</b> Forum on Microbial Threats; Board on Global Health; Institute of Medicine. Washington DC: National Academies Press. March 2015. <a href="http://www.ncbi.nlm.nih.gov/books/NBK280057/">http://www.ncbi.nlm.nih.gov/books/NBK280057/</a></p>
<p><b>Emerging infectious diseases of wildlife: a critical perspective.</b> D.M. Tompkins, S. Carver, M.E. Jones, M. Krkošek, L.F. Skerratt. Trends in Parasitology. April 2015. 31(4):149-159. <a href="http://www.ncbi.nlm.nih.gov/pubmed/25709109">http://www.ncbi.nlm.nih.gov/pubmed/25709109</a></p>

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