ONE HEALTH
Đối tác Một sức khỏe Phòng chống Dịch bệnh từ Động vật sang Người
VIET NAM ONE HEALTH PARTNERSHIP FOR ZOONOSES

ONE HEALTH
NEWSLETTER - VIET NAM
Quarter III/2018

CONTENTS

UPDATED ASSESSMENT OF VIETNAM'S ONE HEALTH COORDINATION MECHANISMS

In order to help inform Viet Nam's prioritization and planning of activities under Global Health Security Agenda (GHSA) Phase II to 2024, the One Health Partnership (OHP) Secretariat in collaboration with USAID's Preparedness and Response (P & R) project organized an OH-APP workshop in Ninh Binh province from 14-15 August 2018.

The purpose of the two-day workshop was to assess the maturity of Vietnam's One Health coordinating mechanisms, provide data for decision-making that would enhance organizational capacity and One Health performance for the country, and determine how OHP may support One Health collaboration under different funding scenarios. The workshop was attended by 30 participants from the One Health Partnership, representing government and non-government stakeholders, including development partners.

Some pictures from the workshop:




The OH-APP is a country-led participatory process and a tool that helps monitor progress annually, identify capacity and performance gaps and informs action planning. The OH-APP is a revised version of the One Health Planning for Performance (P4P) tool which was conducted in Vietnam in June 2017 and which established the baseline for capacity and performance. The OH-APP complements existing global instruments (e.g., World Health Organisation (WHO) Joint External Evaluation (JEE)) and applies a 'One Health lens' to advance a multi-sectoral One Health approach and inform annual planning. Like the P4P, the OH-APP is administered in three modules over the course of a two-day workshop: organizational capacity assessment, organizational performance assessment, and prioritization and planning.

The overall assessment of the workshop participants indicated that the overall organizational capacity and performance of Viet Nam's One Health coordination mechanisms is developing to expanding maturity. The OH-APP results are in a comparable range with the WHO JEE scores for measures aligned with the work of the National Coordinating Mechanism. When asked to identify the most critical areas for One Health collaboration in the coming five-year period, participants selected the areas of coordination and collaboration, resources and resource mobilisation, and joint planning ■

ONE HEALTH COMMUNICATION NETWORK VISITS THAI NGUYEN PROVINCE

The Viet Nam One Health Communication Network (OHCN) quarterly meeting was held in the Thai Nguyen province on 13 September 2018. A total of 40 national and international members were in attendance.

The meeting provided a great forum for information sharing and knowledge exchange on communications for prevention and control of emerging infectious disease and related One Health topics. Updates were provided from representatives from Thai Nguyen Universities and the Thai Nguyen Centre for Agriculture Extension on activities occurring at a local level. While from country perspective, members shared their on-going and upcoming One Health research and activities.

Students from the Thai Nguyen One Health Student Club also provided information on the great activities that they are running. The Club takes a true collaborative One Health approach by bringing together students from both Thai Nguyen University of Agriculture and Forestry and Thai Nguyen University Medicine and Pharmacy. Their most

Assoc. Prof. Tran Van Dien – Dean of Thai Nguyen University of Agriculture and Forestry provided an opening address and explained how they have embedded a mandatory One Health program into their curriculum.

Mr Doan Quoc Khanh from the Department of Animal Health of Thai Nguyen University of Agriculture and Forestry provided an update on One Health communication activities in Thai Nguyen Universities.

Mrs. Nguyen Thi Van from Thai Nguyen Agricultural Extension Centre gave presentation on Safety Agricultural production activities in Thai Nguyen Province

Ms Tarni Cooper from ILRI provided an overview of her research on veterinary antimicrobial stewardship in Thai Nguyen.

Ms Nguyen Thi Thanh Huong from NIHE explained the current rabies control in Viet Nam and provided an overview of activities for World Rabies Day.

Dr Pham Duc Phuc briefed members on the SEAOHUN 2018 International Conference –One Health Academic Challenges – preparing todays workforce to combat tomorrow's infectious diseases.

Visit to the One Health student club with students from both Thai Nguyen University of Agriculture and Forestry and Thai Nguyen University Medicine and Pharmacy

Visit to a local chicken farm to learn about their experience and practice as a disease-free farm

successful activity to date was their field trip to On Luong commune, Phu Luong District where they interviewed local people about their knowledge on Rabies. Using the expertise of the University of Medicine and Pharmacy, they also helped to guide local people to do vaccinations for dogs and poultry to combat rabies and influenza respectively.

As part of the OHCN quarterly meeting, members also had the opportunity to visit a local chicken farm of Mr. Nguyen Thanh Luan in Cay Xanh hamlet, Quyet Thang commune, Thai Nguyen City to see how the One Health approach is being implemented on the frontline. The family farm has approximately 5000 broiler chickens at any one time. Thanks to good hygiene, appropriate fencing and vaccination program, the farm has been disease-free throughout their entire operations ■

FIRST NATIONAL STAKEHOLDERS' MEETING IN VIETNAM ON THE ECOMORE 2 PROJECT

The first National Stakeholders meeting for the Vietnamese component of ECOMORE2 project was held in Hanoi on 7 August 2018.

The meeting came just after the project received approval from the Ministry of Health. The National Institute of Hygiene and Epidemiology (NIHE) has also received approval from the National Ethic Committee, enabling the operational phase of the project to begin.

Professor Dang Duc Anh, Director of NIHE made an opening speech, placing the ECOMORE2 study in the context of the findings of ECOMORE1 project. Professor Anh also reminded participants that if neglected, Leptospirosis, which is still a poorly documented disease, can become a public health issue in Vietnam. This is due to likely effects of climate change increasing the emergence of disease and occurrence of epidemics.

Leptospirosis is a zoonotic bacterial disease with a worldwide distribution. In Vietnam, leptospirosis is considered endemic. A study conducted by the International Livestock Research Institute (ILRI) in 2013 found that there is a low awareness of leptospirosis in Vietnam. Leptospirosis stunts the growth of pigs and causes them to abort, leading to economic losses for pig owners and the pork industry as a whole. Leptospirosis can also spill over into human populations. People who develop the disease also suffer economic losses due to decreased productivity or missed work and the costs of seeking medical treatment. The prognosis for humans is mostly good, but a small proportion of cases may develop more severe symptoms including the risk of organ failure and even death.

Associate Professor Le Thi Phuong Mai, Head of Department of Public Health at NIHE and Project Manager of ECOMORE, explained Leptospirosis is still a neglected disease in Vietnam, with very limited reporting due to non-specific clinical signs and complex laboratory testing. She emphasised that Leptospirosis is a One Health concern.

There was active participation by key representatives from the Department of Livestock Production of the Ministry of Agriculture and Rural Development (Small Poultry and Livestock Division and Animal Epidemiology Department), from the National Institute of Veterinary Research (NIVR), and from the International Livestock Research Institute (ILRI), CIRAD and FAO. Associate Professor Mai presented the ECOMORE2 objectives and methodology and highlighted that the greatest challenge is to not miss a case. This presentation raised many questions and comments from the stakeholders.

The second technical presentation was made by Dr Nguyen Trung Cap, Head of the ICU at the National Hospital of Tropical Diseases in Hanoi. He has experience in Leptospirosis management from his hospital work. He noted that only two hours is allocated to Leptospirosis in the standard medical curriculum. The MoH has issued guidelines for surveillance and prevention, however, guidelines for diagnosis and management are still pending. There is a real need for updated and practical knowledge on Leptospirosis in Vietnam and the sharing of experiences from a project in Myanmar will also assist. Dr Nguyen Trung Cap will participate in a working group organized in Yangon (29-30 August 2018) on a clinical case definition and control case study.

This meeting gave also opportunity for Dr. Hu Suk Lee, a scientist from ILRI, to present research conducted on sero-prevalence of Leptospirosis in pigs in Vietnam and identification of sero-groups circulating in five selected provinces throughout the country. This presentation pointed to the need to evaluate the association between leptospirosis and potential environmental risk factors, and to evaluate the seasonal and temporal patterns of leptospirosis in humans and animals. The ECOMORE2 project will contribute to answering these key questions.

In addition to the participation of authorities, Heads of Communicable Disease Control Department of the Provincial Preventive Medical Center of the selected provinces and Hanoi city, the Deputy Director of the Provincial Department of Health in Thai Binh province, four key participants from the Institute of Hydrology and Meteorology Science and Climate Change (Deputy President, Director, Deputy Director and Head of Department), the event had the participation of representatives of WHO, USCDC, USAID, CENPHER (Center for Public Health and Ecosystem Research– Hanoi University of Public Health) and the One Health Partnership (OHP) Secretariat ■

NATIONAL LAUNCHING OF THE VIET NAM ANIMAL HEALTH INFORMATION SYSTEM (VAHIS)

Timely and accurate animal disease information is crucial for making informed decisions that can help to protect animal and human health, sustain farmers' livelihoods, ensure food security and safety and promote trade.

To contribute to these goals, the Ministry of Agriculture and Rural Development (MARD), the Food and Agriculture Organization (FAO) of the United Nations and the United States Agency for International Development (USAID) jointly launched the Viet Nam Animal Health Information System (VAHIS) on 28 August in Ha Noi.

VAHIS is an on-line animal disease reporting system that enables faster and more accurate flow of disease information to decision makers. It replaces the current paper-based reporting system and allows real-time analysis of the animal disease situation. VAHIS connects animal disease information from provincial and regional animal health authorities to decision makers.

"While launching VAHIS is a very important milestone, it is of course not sufficient. VAHIS success can only be achieved with strong commitment and effective implementation of the circulars and guidance." said by Mr Kamal Maholtra, the UN Resident Coordinator and the FAO Representative ad interim in Viet Nam.

The system plays an important role in supporting surveillance activities, analysis and reporting of animal disease situations and facilitating responses to animal diseases outbreaks including those transmittable to human.

"FAO Viet Nam would like to thank Ministry of Agriculture and Rural Development, provincial Departments of Agriculture and Rural Development and sub-departments of Livestock and Animal Health for their continued commitment to support VAHIS implementation nationwide." added by Mr Maholtra.

Effective VAHIS implementation will minimize economic loss and build trust in Viet Nam's livestock products with both domestic and global consumers in the long run ■

EXPERTS WORK TO UNDERSTAND THE LINK BETWEEN LIVESTOCK KEEPING AND VECTOR-BORNE DISEASES IN VIETNAM

On 5 July 2018, Vietnamese animal health and zoonoses experts met in Hanoi to explore ways of reducing mosquito-borne diseases in the urban areas of Hanoi, the capital of Vietnam. About 60 participants from the livestock, animal health, public health and agriculture sectors representing national institutes, government at both provincial and district levels, research and academia attended the meeting.

The event was hosted by the 'Metropolitan mosquitoes: understanding urban livestock keeping and vector-borne disease in growing tropical cities' or the 'Metropolitan Mosquito' project. The International Livestock Research Institute (ILRI) and Uppsala University, Sweden, are implementing the project in Vietnam together with the National Institute of Veterinary Research (NIVR), the Hanoi Sub-department of Animal Health, the Hanoi University of Public Health and the National Institute Hygiene and Epidemiology.

Johanna Lindahl, a veterinary epidemiologist with ILRI and Uppsala University, spoke about the role of livestock in improving human health and livelihoods. Ms Lindahl said that while urbanization is important to the livelihoods and prosperity of millions of people, it can also be the driver of diseases, especially mosquito-borne diseases like dengue fever, Japanese encephalitis and Zika virus.

A meeting between ILRI and partners was held on 5 July 2018 to explore the link between livestock keeping and mosquito-borne diseases (photo credit: ILRI/Hanh Le).

The ILRI research team in the project shared findings from a synthesis of different policies on rearing livestock in Hanoi including an initial survey of the link between livestock and the risk of dengue fever, a vector-borne disease which has been circulating in Hanoi in recent years.

The meeting discussed the livestock production pattern in Hanoi, the associated health-related problems and possible solutions. Participants shared data on mosquito-borne diseases and proposed ways of carrying out research activities including review of livestock policies and field research on the association between livestock keeping and mosquito-borne diseases under the project. The NIVR, the Hanoi Sub-department of Animal Health and ILRI are leading the field and laboratory research that will collect data from six districts of the city.

Launched in 2018, the Metropolitan Mosquito project seeks to fill the knowledge gaps regarding urban livestock keeping and the associated risks in terms of disease vectors and their pathogens in growing tropical cities. In cities that are densely populated because of rapid urbanization, proximity to animals may result in increased risks for transmission of zoonotic diseases, including vector-borne diseases. Hanoi has a large number of livestock which may increase disease risks for more than 7 million inhabitants of the city. This project will generate knowledge on mosquito-borne diseases and pilot the most appropriate interventions to reduce mosquitos in urban areas in Hanoi.■

NEWS IN BRIEF

VIETNAM NEEDS 1.2 MILLION DOSES OF RABIES VACCINE

The Drug Administration under the Ministry of Health has asked rabies vaccine suppliers and importers to ensure stockpiles are built up to meet increasing demand.

According to rabies vaccine importing facilities, the country needs about 1.2 million doses of the human rabies vaccine by the end of this year to address the current vaccine shortage. The administration has ordered vaccination facilities to maintain enough vaccine in stock to meet at least one month of demand.

The Ministry of Health has asked for detailed contracts to be signed between vaccine suppliers and vaccination facilities. Each contract must mention the quantity and price of each vaccine type as well as the date of vaccine delivery, and must clarify the responsibilities of each party. The ministry advised vaccination facilities to sign contracts with more than one suppliers in order to avoid dependence on only one source. Vaccination facilities should contact rabies vaccine importing facilities to order the vaccine.

There are four rabies vaccines qualified to be used in Vietnam, namely Abhayrab, Indirab, Speeda and Verorab.

In the first quarter of this year, it was reported that medical facilities were likely to face a shortage of rabies vaccine stockpiles to meet the increasing demand when summer came.

According to the health ministry, 18 people died of rabies in the first four months of this year. In 2017, rabies killed 62 people while the figure for 2016 was 91 people. The victims mostly were not vaccinated and lived in rural areas where locals have the habit of leaving dogs unleashed or do not have their dogs vaccinated.

To date, no drugs have been discovered that can treat rabies. Rabies vaccines and rabies immune globulin are therefore recommended for infection prevention.

The World Health Organisation estimates 59,000 people worldwide die from the disease each year ■

NEW TECHNICAL ADVANCES IN ANIMAL HUSBANDRY

On 16 August 2018, the National Center for Agricultural Extension in coordination with Hai Phong Department of Agriculture and Rural Development held a workshop on the "Introduction of new technical advances in animal husbandry sector enterprises" in Hai Phong.

More than 200 participants from enterprises, research institutes, universities and 100 farmers from Hai Phong, Quang Ninh, Ha Nam and Bac Ninh participated in the workshop.

Ha Thuy Hanh, Deputy Director of the National Center for Agricultural Extension, said that the application of technical advances in animal husbandry is a very important key to improving the value and quality of products and the sustainable development of the livestock sector.

Many large-scale producers who have a background in animal husbandry are able to access and apply technical advances to ensure fast and efficient production. For small scale producers involved in the agricultural extension channel at all levels, training courses will help improve their knowledge on raising livestock. It will also ensure the application and implementation of technical advances are made in each household and replicated in the local community.

The application of new techniques in raising livestock in Hai Phong has increased the productivity, quality and value of livestock products. This has improved the economic, social and environmental efficiency and further contributed to the improvement of value and creating momentum within the value chain ■

DEPUTY PM ORDERS DRASTIC MEASURES TO PREVENT AFRICAN SWINE FEVER (ASF)

Ministries, sectors, provinces and cities nationwide must take drastic measures to prevent animal diseases, particularly African Swine Fever (ASF), from entering Vietnam, said Deputy Prime Minister Trinh Dinh Dung.

He was speaking at an online conference held in Hanoi on September 14 by the Ministry of Agriculture and Rural Development to seek ways to prevent animal diseases for the coming autumn and winter seasons.

Requesting that cities and provinces nationwide strengthen inspection to detect hotbeds of diseases on poultry and livestock early on and prevent them from spreading, Deputy Prime Minister Dung underscored the importance of proper vaccinations for animals and the provision of prevention guidelines at local levels.

As there is no vaccine or cure for ASF, the most effective measure at present is to actively prevent it from entering the country, said Vice Minister of Agriculture and Rural Development Ha Cong Tuan.

To do this, relevant ministries and agencies need to tighten control on the transportation of pork and its products, and to promote safe pig farming, he added.

ASF is a type of infectious hemorrhagic fever which results in a 90-100 percent mortality rate for pigs. Although the disease is not dangerous to humans, it can cause great economic losses for farmers and can harm pork trading.

It is spread from pig to pig through various means, including animal feed contaminated with the pathogen, carriers such as ticks, or direct contact between infected pigs and healthy ones.

From the end of 2017 through to September 10, 17 countries and regions in Europe and Asia such as China and Estonia have had ASF outbreaks, with over 560,000 pigs culled, according to the World Organisation for Animal Health (OIE).

From the start of August to September 10, China reported 14 outbreaks in six provinces, with 38,000 pigs culled, according to the OIE and the Food and Agriculture Organisation of the United Nations (FAO). The disease is moving southward towards provinces near Vietnam.

There is a risk of ASF virus being brought into Vietnam through smuggling and the transportation of pork and pork products with unclear origin which is quite common in northern border provinces.

It is vital to protect pig farms from the virus by fostering biosafety and intensify pasteurisation in farms, said Dr Ken Inui from the FAO.

Dr Inui suggested the Ministry of Agriculture and Rural Development promptly draw up an emergency response plan and raise public awareness of the disease. He also urged for an immediate ban on the illegal trading of pigs from China to Vietnam ■

ILRI SUPPORTS CAPACITY DEVELOPMENT IN ADDRESSING EMERGING INFECTIOUS DISEASES IN SOUTH AND SOUTHEAST ASIA

Scientists from the Veterinary Public Health Centre for Asia Pacific (VPHCAP) in Chiang Mai University and the International Livestock Research Institute (ILRI) collaborated in a range of capacity development activities in July 2018. This collaboration is a reflection of their ongoing partnership in public health, food security and ecosystems health research.

The two organizations supported two courses on addressing antimicrobial resistance and risk analysis in food systems which were part of the Global Health Institute 2018 program (GHI 2018) in Chiang Mai University on 5–13 July. Public health, animal health and animal science students and researchers in South and Southeast Asia attended the courses.

Scientists from VPHCAP, ILRI, Hanoi University of Public Health (HUPH), and the SafePORK project led two courses as part of the training.

The participants learned how to perform advanced risk analysis to improve safety along the food production chain and how to carry out risk assessments and molecular epidemiology. The aim of the course was to strengthen the use of analysis tools and databases such as @Risk and ComBase in the national agricultural research systems and public health services in the region.

The participants also attended the 5th Food Safety and Zoonoses Symposium of Asia Pacific which was held during GHI 2018 from 6–7 July. It featured discussions such as the global agenda for antimicrobial resistance and the use of economic and systems approaches in animal health analyses.

The GHI symposium also gave participants an opportunity to discuss ongoing collaboration with researchers from the Free University of Berlin, who offered training in molecular epidemiology.

The training course on global health leadership was led by staff of VPHCAP and supported by ILRI scientist Karl Rich.

The GHI conference has been held annually by VPHCAP and international partners including ILRI since its inauguration in 2012. The program strengthens partners' technical skills and identifies opportunities for fostering collective action for the benefit of public health, food security and ecosystem health ■

HANOI SETS UP CENTRE FOR DISEASE CONTROL

Chairman of the Hanoi People's Committee Nguyen Duc Chung has approved the establishment of a centre for disease control based on the restructuring of the Centre for Preventive Medicine in Hanoi.

Under Decision 4016/QD-UBND signed on August 6, the Centre for Preventive Medicine will be renamed as Hanoi Centre for Disease Control (Hanoi CDC) and have a total of 540 staff members.

The Hanoi CDC, which is under the direct control of the municipal Health Department, will provide counselling and organise activities on disease prevention and health risk reduction. The centre is also tasked with managing community health.

Earlier, the Centre for Preventive Medicine was re-organised with the merger of nine units of the city's preventive medicine system.

In addition, the reproductive health care centre at the Hanoi Obstetrics and Gynaecology Hospital was moved to the Hanoi CDC.

Meanwhile, the division for medicine and cosmetics testing in the former Centre for Preventive Medicine was separated from the centre and upgraded to the municipal centre for medicine, cosmetics and food testing ■

RELEVANT LEGAL DOCUMENTS

DOCUMENTS ISSUED BY THE GOVERNMENT

Decree No. 115/2018/NĐ-CP dated 4 September 2018 (to be effective on 20 October 2018) by the Prime Minister on administrative penalties for food safety violations. https://thuvienphapluat.vn/van-ban/Vi-pham-hanh-chinh/Nghi-dinh-115-2018-ND-CP-quy-dinh-xu-phat-vi-pham-hanh-chinh-ve-an-toan-thuc-pham-360333.aspx

DOCUMENTS ISSUED BY MARD

List of enterprises from 23 countries qualifying for exporting meat and animal products in Vietnam.

http://cucthuy.gov.vn/Pages/danh-sach-cac-doanh-nghiep-cua-22-nuoc-du-dieu-kien-xuat-khau-thuc-pham-co-nguon-goc-dong-vat-tren-can-vao-viet-nam.aspx

DOCUMENTS ISSUED BY MOH

Decision No. 5433/QD-BYT dated 10 September 2018 promulgated by Ministry of Health on approval of the Rubella vaccination plan for 1-5 year-olds living in high risk areas in 2018.

https://thuvienphapluat.vn/van-ban/The-thao-Y-te/Quyet-dinh-5433-QD-BYT-2018-trien-khai-chien-dich-tiem-bo-sung-vac-xin-Soi-Rubella-393852.aspx

Decision No. 5071/QD-BYT dated 17 August 2018 by Ministry of Health on the application of information and technology on connecting medicine supplies for drug control.

https://thuvienphapluat.vn/van-ban/Cong-nghe-thong-tin/Quyet-dinh-5071-QD-BYT-2018-ung-dung-cong-nghe-thong-tin-ket-noi-co-so-cung-ung-thuoc-391571.aspx

Directive No. 746/CT-BYT dated 25 July 2018 by Ministry of Health on enhancing prevention, treatment and control of A/H1N1 and Rubella in public medical services.

https://thuvienphapluat.vn/van-ban/The-thao-Y-te/Chi-thi-746-CT-BYT-2018-tang-cuong-cong-tac-dieu-tri-phong-chong-lay-nhiem-cum-A-H1N1-soi-388746.aspx

ONE HEALTH UPCOMING EVENTS

October 2018

The 40th Meeting of the ASEAN Ministers on Agriculture and Forestry (40th AMAF) 18th Meeting of the ASEAN Plus Three Ministers on Agriculture and Forestry (18th AMAF+3) 6th ASEAN-China Ministerial Meeting on Quality Supervision, Inspection and Quarantine (6th ASEAN-China SPS Ministerial Meeting) and its Related Meeting
8 - 13 October 2018
Ha Noi, Viet Nam

World Health Summit 2018 (WHS 2018)
14-16 October 2018
Berlin, Germany

November 2018

5th Annual One Health Symposium – Resilient Solutions for Growing Populations
3 November, 2018
Gladys Valley Hall, UC Davis campus

The Global Health Security Agenda (GHSA)
6-9 November 2018
Bali, Indonesia

The 7th International Meeting on Emerging Diseases and Surveillance (IMED 2018)
9-12 November 2018
Vienna, Austria

One Health Academic Challenges: Preparing Today's Workforce to Combat Tomorrow's Infectious Diseases – SEAOHUN International Conference 2018.
12 - 15 November 2018
Hanoi Medical University | Hanoi, Vietnam

December 2018

ASEAN Tripartite Rabies Meeting
4-6 December 2018
Hanoi, Vietnam

Application of the One Health Approach to Global Health Centers
3-4 December 2018
Bronx, New York

RECENT PUBLICATIONS IN ONE HEALTH

Disease prevention and control in Fall 2018 and measures to prevent animal diseases, particularly African Swine Fever (ASF), from entering Vietnam,
http://www.cucthuy.gov.vn/PublishingImages/Van%20ban%20CTY/Dich%20te/5_180912_Baocao_Tomtat_DTLCP.pdf

Food safety challenges in traditional pork value chains and policy engagement in Vietnam and Laos. Published on Sep 25, 2018
https://www.slideshare.net/ILRI/pork-safety-vietnam-laos

Safer indigenous pork and healthier ethnic minorities in Vietnam through better management of parasitic pig-borne diseases. Published on Sep 25, 2018
https://www.slideshare.net/ILRI/pigborne-diseases-vn?ref=https://www.slideshare.net/ILRI/slideshelf

Identifying the constraints and/or opportunities in a One Health surveillance system for antibiotic resistance in Vietnam. Published on Sep 25, 2018
https://www.slideshare.net/ILRI/antibiotic-resistance-vn

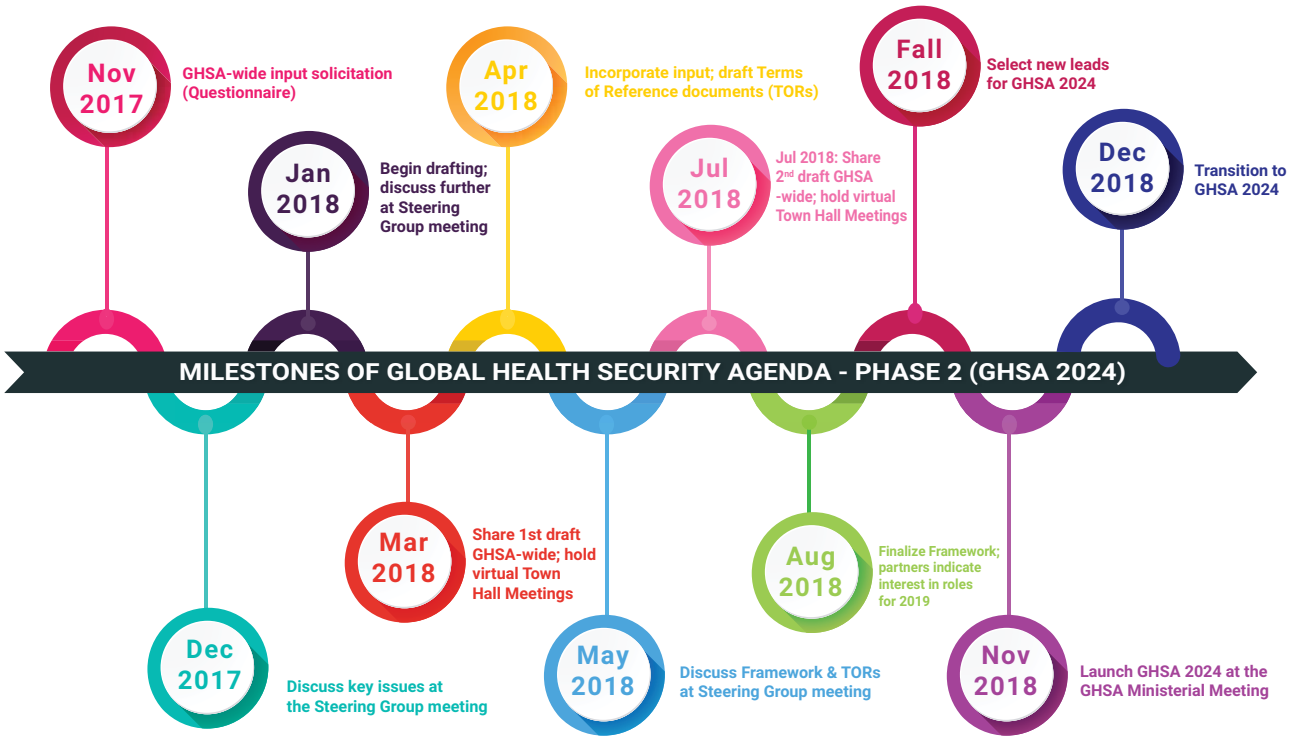
Global Health Security in South Asia. Gigi Kwik Gronvall, Brittany Bland, Thomas Inglesby, Anita Cicero. September 13, 2018.
http://www.centerforhealthsecurity.org/our-work/pubs_archive/pubs-pdfs/2018/180913-global-health-security-south-asia.pdf

Ten years in public health 2007-2017. Report by Dr Margaret Chan, Director-General, World Health Organization
http://apps.who.int/iris/bitstream/handle/10665/255355/9789241512442-eng.pdf?sequence=1

One Health and EcoHealth in Asia. Published on Sep 28, 2018
https://www.slideshare.net/ILRI/one-health-ecohealth-asia

Establishing research priorities to improve the One Health efficacy of Australian general practitioners and veterinarians with regard to zoonoses: A modified Delphi survey.
https://reader.elsevier.com/reader/sd/pii/S2352771418300235?token=E0BFEAC816FB27205D1CFAD376DB3EFE8441B57BFBDC68D627F972D5E5D1DC53A76FB3EAD64E80829BCEFEB293966612

Antibiotic resistance in Vietnam: moving towards a One Health surveillance system. Published on Sep 24, 2018
Marion Bordier, Aurelie Binot, Quentin Pauchard, Dien Thi Nguyen, Thanh Ngo Trung, Nicolas Fortané and Flavie Luce Goutard
https://bmcpublichealth.biomedcentral.com/articles/10.1186/s12889-018-6022-4



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