APEIR NEWSLETTER

ASIA PARTNERSHIP ON EMERGING INFECTIOUS DISEASE RESEARCH

January 2017

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EDUCATIONAL POST

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WILD LIFE TRADE VIETNAM

APEIR RESEARCH & SUCCESS STORY

APEIR

Asia Partnership on Emerging Infectious Diseases Research

HAPPY CHINESE NEW YEAR 2017

SURVEILLANCE OF EIDS IN WILDLIFE TRADE IN LAO PDR

Watthana Theppangna, Sithong Phiphakhavong, and Bounlom DouangNgeun

EDUCATIONAL POST

METHOD

The wildlife trade was observed in:
24 places
14 markets in 14 districts
7 provinces
5 road side small markets.
A total of 5,750 kg from 11,664 wildlife of 108 different species were observed during 145 surveys
4443 blood and swab samples from 530 wildlife animals were collected and tested at the National Animal Health Laboratory for zoonotic disease.

RESULT

Listed diseases that are serious threat to human health

- 18 Corona viruses found in bats, rodents and civets
- 44 Leptospira species were found in rodents
- 6 Rickettsia species were found in rodents
- 1 Lactococcus garvieae
- 1 Kurthia species were found in a squirrel,
- 1 Ehrlichia spp. TC2151-2 was found in a rat

BACKGROUND

East and Southeast Asia is the center of legal and illegal trade in wildlife, which are operating as suppliers, consumers and general import-export wildlife emporiums. The illegal hunting of wildlife is common in local communities living in close proximity to the forests. Significant numbers of wild mammals, birds and reptiles move through trading centers, where they are in daily contact with humans and dozens of other species prior to shipment to other markets, sale in local markets, or bought for religious customs of merit release, or become unwanted pets. This may not only result in serious outbreaks of human disease, but also threaten the health of domestic and wild animal populations, impacting agricultural production, tourism, trade and rural livelihoods. From 2013, APEIR supported the surveillance of emerging infectious diseases in wildlife trade to increase awareness for zoonosis prevention and wildlife conservation in Lao PDR.

RECOMMENDATION

The wildlife trade in Lao PDR is still high and some species of wildlife have potential to spread zoonotic diseases to humans. Further study could identify risk factors for zoonotic disease spread and emerging infectious diseases coming from the wildlife trade.

Surveillance of EIDs in Wildlife Trade to Increase Awareness for Zoonosis Prevention and Wildlife Conservation in Vietnam

Hung Lee and Team

RESERCH SUCCESS STORY

PERIOD:

September 2013 to August 2016

RESEARCH TEAM

- Vietnam National Park and Protected Area Association (VNPPA)
- Institute of Ecology and Biological Resources (IEBR)
- Vietnam Academy of Science and Technology (VAST)
- National Institute of Hygiene and Epidemiology (NIHE)
- Biodiversity Conservation Agency of Vietnam Environment Administration (VEA)
- Vietnam's CITES office of Ministry of Agricultural and Rural Development (MARD)
- Vietnam Mammal Association (VMA).

RESULT

- 26,40% positive with AIV (327/1.240 samples).
- 58 samples infected with high pathogenic avian influenza H5N6 (4.7%)
- 96 samples infected with low pathogenic avian influenza A (H6N6) (7.7%)
- The first record of new emerging avian influenza virus H5N6 as well as A (H6N6) from wild bird trade in Vietnam.

LOCATION: Hanoi city and Quang Tri province

SAMPLE

1.827 samples, including:

- 1.240 Aves
- 461 Mammals
- 126 Reptiles
- Tested avian influenza virus for 1.240 samples.

SUCCESS STORIES

- The connections between researchers from academy institutions, universities, management
- 12 young researchers from both central and local level has been trained, joined and obtain knowledges from project
- Almost 1.000 local people joined the training courses, seminars which highly help to raise awareness of endanger of infectious diseases in wildlife trade as well as importance of wildlife conservation
- The result and recommendation contributed to the new Vietnam penal code number 241 relating to the illegal wildlife trade in Vietnam.

Lunar New Year and Preparedness for H7N9 in China

During the Luna Year, typically the demand for poultry and ramps up travel for family celebrations. Chinese researchers said the country had experienced an early sudden increase in cases, with 106 infections reported for the month of December.

China's surge of H7N9 avian influenza cases is growing, with 111 cases already reported in the first half of January, topping December's sudden which was 106 cases and steep rise and prompting a global call from the WHO's top official to keep a close watch on outbreaks in birds and to report human cases promptly.

According to the WHO Director-General, the world is better prepared for the next influenza pandemic, because of the rapidly expanding scope of the outbreaks and the number of strains, such as highly pathogenic H5N8 and H5N6, that are co-circulating. Until now, the country has already recorded 225 cases in the fifth wave, a number that rivals the largest (second) wave of illness activity in the winter of 2013-2014, when the virus was confirmed in 304 people .It's unclear how many H7N9 cases have been reported from China since the novel virus was first detected in humans in 2013, but Chan said in her address today put the number at more than 1,000 cases, adding that 38.5% were fatal.

Source: http://www.cidrap.umn.edu/news-perspective/2017/01/chinas-h7n9-total-climbs-whos-chan-warns-threat

Antiviral drug Sofosbuvir for ZIKV

Carolina Q. Sacramento, Gabrielle R. de Melo [...] Thiago Moreno L. Souza in the Scientific Report early this year published a journal article under title “The clinically approved antiviral drug sofosbuvir inhibits Zika virus replication”. According to the abstract, antiviral drugs are necessary since ZIKV causes neurological disorders during fetal development and in adulthood. Zika virus (ZIKV) is a member of the Flaviviridae family, along with other agents of clinical significance such as dengue (DENV) and hepatitis C (HCV) viruses. Sofosbuvir is clinically approved for use against HCV and targets the protein that is most conserved among the members of the Flaviviridae family, the viral RNA polymerase. The researchers found that sofosbuvir inhibits ZIKV RNA polymerase, targeting conserved amino acid residues. Sofosbuvir inhibited ZIKV replication in different cellular systems, such as hepatoma (Huh-7) cells, neuroblastoma (SH-Sy5y) cells, neural stem cells (NSC) and brain organoids. In addition to the direct inhibition of the viral RNA polymerase, it was observed that sofosbuvir also induced an increase in A-to-G mutations in the viral genome. Together, the data highlight a potential secondary use of sofosbuvir, an anti-HCV drug, against ZIKV.

Read the full version at http://www.nature.com/articles/srep40920. This article refers to Sacramento, C. Q., de Melo, G. R., de Freitas, C. S., Rocha, N., Hoelz, L. V. B., Miranda, M., ... & Abrantes, J. L. (2017). The clinically approved antiviral drug sofosbuvir inhibits Zika virus replication. *Scientific Reports*, *7*, 40920.

GRANT OPPORTUNITIES

FOOD SECURITY

PUBLIC ENGAGEMENT FUND

BIOSECURITY

MRC NIHR METHODOLOGY STATE OF THE ART WORKSHOP ON MEASUREMENT REACTIVITY

EMERGING INTER-DISCIPLINARY AGENDA

BASIC SCIENCE

ECOLOGICAL SCIENCE

TROPICAL DISEASE

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COMING SOON

APEIR STEERING COMMITTEE MEETING

JAKARTA, MARCH 2017

APEIR SECRETARIAT

INDONESIA ONE HEALTH UNIVERSITY (INDOHUN)
G BUILDING, 3RD FLOOR ROOM G316,
FACULTY OF PUBLIC HEALTH
UNIVERSITAS INDONESIA
DEPOK, WEST JAVA,
INDONESIA - 16424
PHONE/ FAX: +62(21)29302084
EMAIL:
APEIR.SECRETARIAT@GMAIL.COMWEBSITE:
WWW.APEIR.NET