

The ASIDE Project

The ASIDE project is the result of 10 years of close collaboration between the Institut Pasteur International Network (IPIN) and the US Department of Health and Human Services Assistant Secretary for Preparedness and Response (ASPR). The rapid, global spread of severe acute respiratory syndrome (SARS) coronavirus in 2003-2004, the detection of human infections with a highly pathogenic variant of avian influenza (H5N1) in 2003 and more recently the outbreaks of MERS-CoV, Ebola, and Zika, highlight the importance of implementing the International Health Regulations to reinforce global health security. To address those challenges and others, the IPIN and ASPR cooperative agreements have aimed at building and strengthening preparedness and response capacities in Sub-Saharan Africa and Southeast Asian countries.

The ASIDE project (2014-2019) aims at strengthening the national core public health capacities to prevent, detect, report, and respond to all public health emergencies of international concern. This project focuses mainly on the surveillance of respiratory viruses, but also includes other emerging or re-emerging viruses, in five Sub-Saharan African countries and one Southeast Asian country, accordingly to the respective public health priorities of each country.

Kick off meeting

Washington DC, March 22-23, 2016



The ASIDE project team in US DHHS offices in Washington DC

The ASIDE project was officially launched in Washington DC, during a meeting that took place in ASPR offices at the U.S. Department of Health and Human Services. Officials from ASPR and Institut Pasteur presented objectives of the ASIDE project:

- Strengthening preparedness for respiratory infectious disease epidemics, including influenza and other emerging and re-emerging infectious disease outbreaks;
- Detecting threats early, including real-time bio surveillance, detection, characterization and reporting of emerging influenza strains and other emerging/re-emerging infectious respiratory disease pathogens identified as priorities in each country;
- Responding rapidly and effectively to influenza and other emerging and re-emerging pathogens.

Local coordinators of ASIDE projects from Cameroon, Central African Republic, Côte d'Ivoire, Senegal, Madagascar and Cambodia discussed their specific objectives and activities.

Capacity-building mission

Côte d'Ivoire, May 12-14, 2015

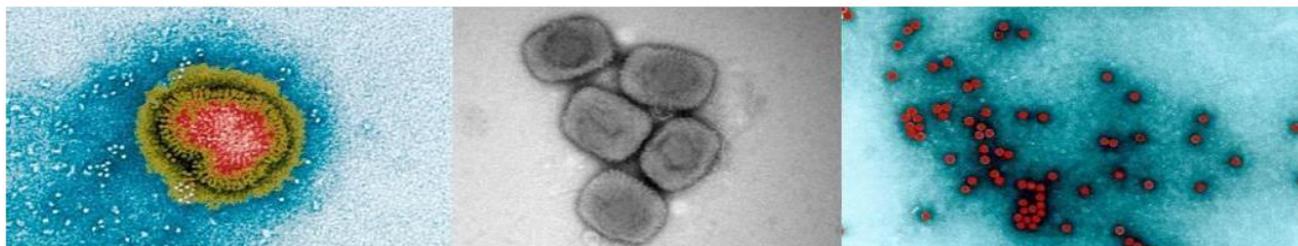
To strengthen preparedness, detection and response capacities in case of an outbreak, the ASIDE project supports Institut Pasteur de Côte d'Ivoire will to strengthen its ability to detect hemorrhagic fever and mosquito-borne viruses, as well as develop stronger laboratory biosafety systems.



Institut Pasteur de Côte d'Ivoire - Département des virus pandémiques

The mission had been organized to assess IPCI capacities and needs in order to design proper and adapted capacity building via laboratory trainings, expertise and equipment. Two experts, one from the Institut Pasteur's Laboratory for urgent response to biological threats (CIBU) and one from the French Agency for Food, Environmental and Occupational Health and Safety have performed this assessment with IPCI different heads of laboratories and technical staff.

A follow-up training is planned in 2016 in Institut Pasteur de Côte d'Ivoire.



Cambodia Influenza Surveillance in live bird markets

Training

The IPC influenza team continually engages with counterparts from the Ministry of Health and the Ministry of Agriculture, Forestry and Fisheries to improve the preparedness for infectious disease epidemics. The IPC have been engaged in improving the laboratory competencies of staff from the National Veterinary Research Institute (NaVRI) for the detection of influenza viruses.

Two IPC staff, Dr Sareth Rith and Ms Phalla Y, have been spending 2-3 mornings every week (between Aug-Oct 2015) conducting training of six staff from NaVRI for real-time RT-PCR detection of avian influenza viruses.



IPC staff conducting training in real-time RT-PCR screening for avian influenza viruses with staff from the National Veterinary Research Institute (NaVRI)



The real-time RT-PCR training with NaVRI has highlighted needs for molecular biology courses. IPC has therefore established a lecture series which teaches the fundamentals of molecular biology and the practical applications of PCR and sequencing.

This training has been further developed to collect duplicate samples from the live bird market study in October 2015.

Surveillance in Live birds markets

The 2015-2016 avian influenza virus surveillance targeted two markets, one in Central Phnom Penh (O Reussey) and the other in a provincial capital (Takeo). Serum samples were collected from a total of 138 participants (poultry sellers and slaughterers) during the baseline collection.



Staff from NaVRI and IPC collecting oropharyngeal and rectal swab samples from poultry at live bird markets



A poultry worker being bled for the seroprevalence study by a member of the IPC Epidemiology Unit

Detailed questionnaires were also completed by the participants to investigate the link between risk factors and exposure to avian influenza viruses.

Since the beginning of the surveillance in live birds, 660 samples (132 carcass wash water samples, 264 duck swabs and 264 chicken swabs) have been collected from two LBMs and analyzed for avian influenza viruses.

The samples were collected in collaboration with the National Veterinary Research Institute (NaVRI). All samples were screened for influenza A (M-gene) and A/H5N1 (HA5 and NA1) by real-time RT-PCR in the BSL3 laboratory at IPC.

We have observed intense circulation of avian influenza viruses in the two LBMs during the initial phases of this study. There is also evidence that other strains of avian influenza are co circulating with A/H5N1, particularly in the duck samples. Thanks to the sequencer purchase through ASIDE project, full genome A/H5N1 sequences have been generated from 12 strains collected from Life birds markets and isolated.



An IPC technician analyzing influenza sequence data on the AB Genetic Analyzer 3500xl

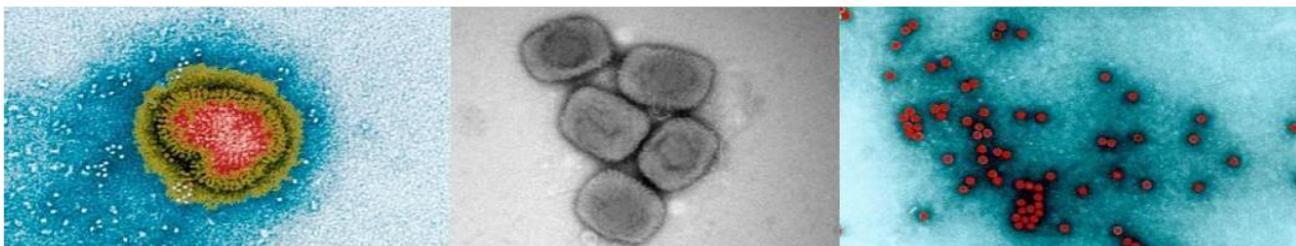
Training of Institut Pasteur Bangui (IPB)

In Central African Republic, both swine flu and avian flu are potential risks for human health, and some surveillance is already being done. The IPB starts the One Health approach, working closely with the National Animal Health Service. ASIDE project has supported knowledge transfer between IPC and IPB.



Dr Emmanuel Nakoune (IPB) & Dr Paul Horwood (IPC) in a Live Birds Markets

Dr Emmanuel Nakoune, Scientific Director of IPB participated to a two weeks training in Cambodia on Influenza A(H5N1) virus surveillance in Live Birds Markets. This mission allows IPB to learn different animal surveillance technics and laboratory methods and procedures and to develop an adapted strategy.



Surveillance Systems
Focus on Syndromic Sentinel Surveillance Network in Senegal

Three countries of ASIDE project: Cameroon, Senegal and Central African Republic develop and manage surveillance systems on: influenza, respiratory diseases and have recently widen the surveillance to emerging and re-emerging diseases.

Coordination meetings with health workers of sentinel sites, districts and regional authorities, Ministry of Health and WHO country office

Twice a year, a meeting of all surveillance system partners is organized by Institut Pasteur de Dakar. During this meeting, the surveillance system is assessed. Strengthens, weaknesses, challenge and opportunities are discussed.



Institut Pasteur de Dakar – Réseau 4S – Coordination meeting – PPEs – March 2015

To strengthen the surveillance system preparedness and response, trainings are organized on International Health Regulations (2005) and risk detection and assessment via case studies. In March 2015, all community health post managers have been trained to use Personal Protective Equipment and PPE's were distributed.



In August 2015, training was organized on emerging and re-emerging respiratory infections. All sentinel sites have presented their health center and their activities.

Training on surveillance and outbreak investigation – May 26 to June 12, 2016 – Institut Pasteur Dakar



An advance course for medical staff involved in the Senegalese Sentinel Surveillance System (4S Network) to enhance preparedness and response of those experts. The heads of medical districts of Matam, Saint-Louis, Thiès, Kédougou, Dakar, Guediawaye and Tambacounda attended to this meeting.

Week 1: Epidemiological surveillance

Research themes: Strengths and challenges of surveillance systems, Registers, passive surveillance, Alert systems, Incidence and prevalence environmental surveillance, risk assessment, RSI (2005), surveillance of medical consumption, One Health.



Presentations: Surveillance of highly pathogenic influenza A, Presentation of SEGA network, Syndromic surveillance in Senegal, Early Warning system tools.

Week 2: Biological surveillance

Research themes: Biological samples, hydric risks, entomological surveillance

Presentations: The laboratory role in microbiological resistance surveillance, impact of animal surveillance on human surveillance, Emerging pathogens and biological investigation, Global Influenza Surveillance Network



Week 3: Outbreak investigation

Based on **case studies:**

- Hemorrhagic Fever Outbreak in Africa
- Measles outbreak in Burundi
- Asthma outbreak in Barcelona



