From: predict-request@ucdavis.edu on behalf of "Bambang Heryanto"

 bheryanto@usaid.gov>

Sent: 08/17/2017 5:26:36 PM (-07:00)

To: "Joko Pamungkas" ← REDACTED

Cc: "David McIver" <dmciver@metabiota.com>; myintk@eijkman.go.id; "Damien Joly"

<djoly@metabiota.com>; "Dodi Safari" REDACTED ; "William B. Karesh, D.V.M"

<Karesh@ecohealthalliance.org>; "YING M" < REDACTED "Mathur, Sarah L" <MathurSL@state.gov>; "jusuf kalengkongan" REDACTED "; "EHA Alice Latinne" <latinne@ecohealthalliance.org>; "Kevin Olival, PhD" <olival@ecohealthalliance.org>; "Suryo SAPUTRO" < REDACTED "; "Timothy Meinke" <tmeinke@usaid.gov>;

Subject: [predict] Re: PREDICT Quarterly Update Y3Q3

Dear pak Joko

Thank you very much for sharing your quarterly up date Y3Q3. It is a great news for us that your activities in North Sulawesi has closely engaged Provincial Environment and Forestry Office, Health Office and Assistant of Secretary Governor for Social Welfare as coordinator for health issues in this province

Furthermore, we also have excited from your sharing information addressed in our coordination meeting last July that your project also has covered West, Center Sulawesi, and Gorontalo in addition to North Sulawesi. We wish your best practices in coordination with the sub national institutions in North Sulawesi also be applied in these provinces.

Under PRESTASI Scholarship program for master degree, USAID Health Office also have provided scholarship some of the local universities, for illustration, one lecture from Faculty of Public Health, Tadolako University, Central Sulawesi. Therefore with this investment of human resources, there will be an opportunity for your project to engage the local universities for your activities. Further, in collaboration with FAO, under PRESTASI Training Program we also have introduces/trained to some local forest officers for surveillance and reporting. One of participants (vet) is from North Sulawesi. Data of this training are available in FAO (POC-pak Gozali/mbak Rei).

Should you need to extend this training with specific skill required to support your activities for engagement of local university(ies) and local forest officer and other related officer, please let us know and discuss with FAO which has established training module for introducing surveillance for wildlife

As you mentioned that PREDICT Global Team of the viral sequences from samples collected during EPT1 (421 additional samples tested). Reports will send the report to the GOI's related authority, we are looking for this report, as our internal document.

Thank you for your attention

Regards Bambang Heryanto EIDs Specialist USAID Indonesia

On Wed, Aug 16, 2017 at 5:34 PM, Joko Pamungkas < REDACTED wrote

Dear EPT-2 Indonesia Partners;

Please, find enclosed the PREDICT Quarterly Update report for Y3Q3 to cover the summary of activities conducted from April to June 2017. If you need further information, please do not hesitate to contact me.

Warmest regards,

Imung.

Dr.drh. Joko Pamungkas, MSc.

Assoc.Professor (Microbiology), Fac. of Veterinary Medicine at IPB

Director, Primate Research Center at IPB



Skype ID: REDACTED

From: REDACTED on behalf of "Jonna Mazet" <jkmazet@ucdavis.edu>

Sent: 01/28/2017 6:36:43 PM (-08:00)

To: "William B. Karesh" <karesh@ecohealthalliance.org>

Subject: Re: [predict-outbreak] Histopatholgy - White winged black terns

Very good! You can also connect with Kirsten (in Rwanda now) if you want more intel. Thanks for everything today,
J

On Sat, Jan 28, 2017 at 3:40 PM, William B. Karesh < <u>karesh@ecohealthalliance.org</u> > wrote: Just FYI, I have a phone call planned for Monday morning with Rob and Serge from P&R to get some insights on the how the one health "system" is working.

On Jan 28, 2017, at 4:03 PM, Alisa Pereira <apereira@usaid.gov> wrote:

Thanks. Lindsay and Andrew are also working with FAO on a possible plan.

Let me talk to my colleagues and get back to you.

Sent from my iPhone

On Jan 28, 2017, at 2:30 PM, Jonna Mazet < jkmazet@ucdavis.edu> wrote:

Looks like the Uganda National Task Force doesn't intend to release their plan until next week (and that they'll be looking for \$\$\$).

We are also expecting a letter of request for technical support from the Tanzanian Prime Minister's office -- presumed for planning & preparedness.

Heads up that we will need a strategy, especially on the financial side. So far we're doing fine and are prepared to provide technical assistance and even support for limited sample collection and testing, where possible. If financial assistance starts to be requested to support the ministries, we will forward to you, but it would be nice to have guidance for what is appropriate or to whom those requests are most appropriately directed (P&R?).

Thanks,

Jonna

Begin forwarded message:

From: Patrick Atimnedi

REDACTED

Subject: Re: Histopatholgy - White winged black terns

Date: January 28, 2017 at 2:28:46 PM GMT+2

To: Benard Ssebide REDACTED

Cc: Kirsten Gilardi < kvgilardi@ucdavis.edu>, Patrick Atimnedi

REDACTED Mike Cranfield
REDACTED Robert Aruho

REDACTED Dr. Robert Aruho"

REDACTED

Thanks Benard, at NTF, we developed a road map/response plan and budget to address the outbreak. We will be meeting next week and will do a formal communication to PREDICT2 as guided.

On 28 Jan 2017 12:51 p.m., "Benard Ssebide"

REDACTED

wrote:

Dear Patrick,

Ideally we (PREDICT) and other EPT2 partners are open to support the National Response Plan to the current AI outbreak but the procedure is such that if there is a formal and specific request from the Govt of Uganda for technical assistance probably through the NTF's Response Plan, we can forward this to USAID for review and permission.

Kind regards,

Dr Benard Jasper Ssebide **Country Head Veterinarian** GORILLA DOCTORS - UGANDA

www.gorilladoctors.org Saving a Species One Gorilla at a Time

Uganda Country Coordinator

USAID Grantee | PREDICT-2 Project | Emerging Pandemic Threats (EPT) Program

Wildlife Department, College of Veterinary Medicine, Makerere University Campus

REDACTED

On Fri, Jan 27, 2017 at 4:34 PM, Patrick Atimnedi

REDACTED wrote:

Thanks Benard, we are currently in the field. Will read through and get back. Our regards to MGVP. Is there a window through EPT2-PREDICT to support wildlife component of this response?

On 27 Jan 2017 11:11 a.m., "Benard Ssebide"

REDACTED

wrote:

Dear Patrick and Robert,

Dr Mike Cranfield and our consultant pathologist Linda Lowenstine examined the histology sections prepared by CDL at COVAB on the pathology samples you submitted from the White winged Black terns during your field investigations of the current HPAI outbreak in Uganda.

Find attached the histopathology report for the same. The histopathology findings are consistent with AI infections but the pathologist however advised that a complete set of samples be collected whenever possible especially including the brains as that is usually the target organ in AI infections.

Hope you find this information useful. Also attached are some reference papers on AI infections in wild birds.

Kind regards,

Dr Benard Jasper Ssebide

Country Head Veterinarian

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Wildlife Department, College of Veterinary Medicine, Makerere University Campus



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To view this discussion on the web visit

 $\frac{https://groups.google.com/a/usaid.gov/d/msgid/predictmgt/CAO5tDrGPMufmqFs5}{KsC\%2BOrxM-fr8B1DrLq5fVg-8aqGD3XTOeA\%40mail.gmail.com}.$

UCDUSR0015716

From: predict-request@ucdavis.edu on behalf of "Zimmerman, Dawn" <ZimmermanD@si.edu>

Sent: 03/10/2017 5:21:44 PM (-08:00)

To: "David J Wolking" <djwolking@ucdavis.edu>; "William B. Karesh"

<karesh@ecohealthalliance.org>

Cc: "Elizabeth Leasure" <ealeasure@ucdavis.edu>; "predict@ucdavis.edu" <predict@ucdavis.edu>;

"Murray, Suzan" < MurrayS@si.edu>

Subject: [predict] FW: JEE report

Attachments: JEE Report Summary.docx, EPT_2 Revised WP_JEE_Kenya_07032017.docx

Hi All,

Please find the Kenya JEE report attached along with the revised FAO workplan which we were given permission to share. Comments from USAID (Sarah Paige) on the EPT-2 coordination call this week indicated good representation / engagement from EPT-2 partners. The full report is to be out in 4 weeks, and I will forward when received. Many thanks Billy, Jonna, and David for your help in preparation.

Please let me know if any questions / comments / suggestions at this time.

Best, Dawn

----Original Message----

From: REDACTED

Sent: Wednesday, March 08, 2017 8:21 AM To: Zimmerman, Dawn <ZimmermanD@si.edu>

Subject: Re: JEE report

Hi Dawn,

Attached is summary of JEE report touching all packages according to GHSA. The scores indicated are internal ones but doesn't vary much from the external evaluation.

In brief, JEE workshop found Kenya to be doing relatively well and the scores were much higher than what internal team had scored themselves. Gaps were identified that needed to be addressed such as wildlife surveillance (to complete the animal part), Antimicrobial residues (AMR) that needed to capture environment part. Biosafety and Biosecurity had a couple of gaps will require attention. In the attached document it highlights the gaps/challenges that needs to be given priority for the country to move to higher score of 4 or 5 which sustainable.

NB: Attached too is FAO revised work plan based on JEE to align with the GHSA requirements. In the revised work plan there are areas of partnership which we can work together with FAO. Workforce development, zoonotic diseases surveillance in wildlife, and development of national laboratory capacity to detect viral pathogens of importance.

Thanks, Joseph

Revised work plan for the FAO component of the USAID GHSA -JEE

KENYA

Emergency Centre for Transboundary Animal Diseases (ECTAD)

Food and Agriculture Organization (FAO)

1.1 Country Profile

1.1.1 Geography and Population

Kenya is an East African county covering an area of 587,000 km² of which 576,076 km² is land and 11,230 km² is covered by water. It borders Ethiopia to the North, South Sudan to the Northwest and Uganda to the West, Tanzania to the South and Somalia and the Indian Ocean to the East. Kenya lies between 5° N and 5°S latitudes and 34°E and 43°E longitudes. Only 20% of the total land area is arable, the rest is arid or semi-arid land (ASAL).

In 2016, Kenya's human population was projected at 47,251,449 from 38,610,097 in 2009 housing and population census. The annual population growth rate is estimated to be 2.27%; Approximately 36% of the population lives in ASAL areas.

1.1.2 Economic Activities

Kenya's 2015 Gross Domestic Product (GDP) was estimated at KES 5.6 trillion (Kenya National Bureau of Statistics-KNBS, Economic Survey, 2016). The main economic activities being agriculture, industry and services including tourism. Arable land is mainly used for subsistence and commercial farming.

Of the total GDP, Agriculture contributed KES 1.8 trillion (representing 32% of the GDP) while livestock contributed KES 314 Billion (representing 5.5% of the GDP). The Agriculture sector supports 80% of the rural population while livestock directly employs 50% of the agriculture labour force. Seventy six percent of the human population lives in rural areas.

About 60% of Kenya's livestock herd is found in the arid and semi-arid lands (ASALs), which constitute about 80% of the country. Substantial proportions of Kenyans live in the ASALs and derive their livelihood largely from livestock. Livestock play important roles in Kenya's socioeconomic development and contribute towards household food and nutritional security. Main livestock species in Kenya include cattle (18 million), sheep (18 million), goats (28 million), camels (3 million) pigs (334,689) and poultry (31 million). Kenya boasts of diverse wildlife species which are a major attraction to tourists from all over the world.

The country is a regional hub for trade and travel, with millions of people transiting through the airports, seaports and land crossing sites annually. The country is the gateway to the landlocked countries in Eastern and Central Africa.

1.1.3 Prioritization of Zoonotic Diseases

Using a semi-quantitative tool developed by the US Centers for Disease Control and Prevention, the country conducted a systematic prioritization of zoonotic diseases in 2016 and developed a

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ranked list of 36 diseases/pathogens that would guide allocation of resources to enhance their surveillance, prevention, and control. Overall, the top five priority diseases in descending order were anthrax, trypanosomiasis, rabies, brucellosis and Rift Valley Fever. Viral and bacterial zoonoses made up 60% of zoonotic pathogens at 36.1% and 25% respectively; zoonoses caused by helminths were 13.9%, protozoan and fungi 8.3% each, ecto-parasites 5.5% and others 2.8%. (Munyua et al 2016)

The work plan has been revised based on the GHSA internal assessment report and GHSA/IHR Joint External Evaluation (JEE) to took place from 27th February – 3rd March, 2017.

AP Zoonotic Diseases

P.4.1. Surveillance systems in place for priority zoonotic diseases/pathogens Current status - Level 3:

- Country has identified zoonotic diseases/pathogens of greatest national public health concern (Rift Valley Fever, Rabies, Brucellosis, Anthrax and Q Fever / HAT), and strengthens existing surveillance systems for prioritized zoonoses.
- Country has a coordination mechanisms between the Ministry of Health (MoH) and the Ministry of Agriculture, Livestock and Fisheries (MoALF) and other stakeholders through the Zoonotic Disease Unit (ZDU)

Target – Level 4: Zoonotic surveillance system in place for 5 or more zoonotic diseases/pathogens of greatest Public Health Concern

Planned Activities:

- Update national guidelines for investigating and confirming zoonotic disease outbreaks and other public health events
- Profile risk factors and develop risk maps/hot spots to support effective surveillance of priority zoonotic diseases (Rift Valley Fever and Brucellosis)
- Conduct simulation exercises (table top simulation) to strengthen the response capacity to infectious disease threats (RVF and HPAI outbreaks)
- Support the Directorate of Veterinary Services (DVS) to conduct livestock sentinel surveillance for Rift Valley Fever (RVF)
- Support Rapid Response Teams (RRTs) at the national and sub-national levels to conduct outbreak investigation to unusual events/diseases in livestock

P.4.2. Veterinary or Animal Health Workforce

Current status - Level 4:

• There is One Health (OH) workforce capacity (with animal health experts) within the national public health system and more than half of sub-national levels

Target – Level 5: Animal health workforce capacity within the national public health system and at all sub-national levels. This includes a plan for animal health workforce continuing education

Planned Activities:

- Develop a database subject matter experts (SMEs) and trainees trained under the FAO GHSA-JEE project
- Train the-Trainers on One Health Systems Mapping and Analysis Resource Tool (OH-SMART) in collaboration with OHW
- Conduct advocacy and awareness for Rabies and Brucellosis using the Kenya Veterinary Association (KVA) platform

P.4.3. Mechanisms for responding to infectious zoonoses and potential zoonoses are established and functional

Current Status - Level 3. A mechanism for coordinated response to outbreaks of zoonotic diseases by human, animal and wildlife sectors is established

Target – Level 4: Timely and systematic information exchange between animal/wildlife surveillance units, human health surveillance units and other relevant sectors in response to potential zoonotic risks and urgent zoonotic events

Planned Activities:

- Facilitate and participate in quarterly multi-sectoral stakeholder One Health Technical Working Group meetings
- Provide support towards establishment of epidemiological units in five selected counties to strengthen disease surveillance and reporting for zoonoses
- Sponsor and participate in Kenya Veterinary Association (KVA) Annual Scientific Conference and AGM to support information sharing on OH health issues
- Establish Kenya Animal Health Network (KAHN) and facilitate its linkage to National One Health Platform (NOHP)
- Support participation in the Regional Animal Health Networks in Eastern Africa to facilitate cross border information sharing and harmonization of disease strategies
- Train national and sub-national veterinary staff on Participatory Epidemiology (PE) and field epidemiology training programme for veterinarians (FETPV) short training course

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 Participate in relevant partners meetings (IGAD, EAC, AU-IBAR, CDC, USAID, OIE, WHO, ILRI and others) to address the identified needs in view of preventing, detecting and responding to priority zoonotic disease threats.

AP Biosafety and Biosecurity

P.6.2. Biosafety and biosecurity training and practices

Current Status - Level 3:

- Country has a training program in place with common curriculum; has begun implementation,
- Country has a training program in place at most facilities housing or working with dangerous pathogens and toxins;
- Country is developing sustained academic training for those who maintain or work with dangerous pathogens and toxins.
- Country is developing, or has not yet implemented, a train-the-trainers program for biosafety.
- Country is developing sustained academic training for those who maintain or work with dangerous pathogens and toxins.

Target – Level 4: Country has a training program in place with common curriculum and a train-the-trainers program: Country has a training program in place at all facilities housing or working with dangerous pathogens and toxin; Training on biosafety and biosecurity has been provide to staff at all facilities that maintain or with dangerous pathogens and toxins; Country has limited ability to self-sustain all of the above.

Planned Activities:

- Map laboratories working with and/or handling dangerous pathogens and toxins
- Conduct laboratory biorisk assessment at the Central Veterinary Laboratory (CVL) and Kenya Agricultural and Livestock Research Organization (KALRO) veterinary research institute laboratory.
- Conduct External Quality Assessments (EQA) for CVL and KALRO
- Train 30 national sub-national laboratory staff on biosafety and biosecurity

AP National laboratory system

D.1.1. Laboratory testing for detection of priority diseases

Current Status - Level 4:

• The National laboratory system (Central Veterinary Laboratory) is capable of conducting tests for brucellosis, anthrax, rabies, RVF, Bovine TB, Avian Influenza.

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- Veterinary laboratory structure is two tiers consisting of two national referral diagnostic laboratories and six regional diagnostic laboratories.
- The CVL is the national reference laboratory for livestock diseases including Anthrax, Salmonella, Brucella, Newcastle, bovine TB, Rift Valley Fever.
- When tests are requested in the laboratory, OIE recommended tests are used and results are communicated to the veterinarians manually and/or by Email. The existing algorithms are aligned with the World Organisation for Animal Health OIE)
- Efforts are in place for development and guidelines on IEC/ISO 17025 accreditation of CVL
- Internal and external Quality controls are overseen by quality control Manager
- There is scheduled maintenance service contracts procured for the two referral labs (CVL and FMD) for the FY 2016/2017* (recommended to be done annually) Standardization of testing is done through, validation of kits, formulation of SOPs and protocols and Proficiency Testing program
- There exists collaborations between CVL and international reference laboratories

Target – Level 5: In addition to achieving "demonstrated capacity", country has national system for procurement and quality assurance

Planned Activities:

- Install Laboratory Information Management System (LIMS) to facilitate to laboratory information management capacity at the CVL and KALRO through a joint internal and external assessment of current capacities.
- Assess laboratory and biosafety capacity of the CVL and KALRO laboratories using the FAO LMT
- Equip laboratories with ICT infrastructure at the CVL (computers, back-up system, internet, multi-machine printer-copier-scanner) to support establishment of central database for livestock information.
- Conduct Proficiency Tests for priority zoonotic diseases in collaboration with external laboratories
- Supply laboratory consumables and essential equipment (ELISA reader) to strengthen laboratory capacity for testing for priority zoonotic diseases at the CVL
- Finalize drafting of the Veterinary Laboratory Policy (Pilot project started by AU-IBAR)
- Provide support for maintenance and calibration of essential laboratory equipment (Real –Time PCR) at the CVL

D.1.2. Specimen referral and transport system Current Status - Level 4:

- Referral network limited with no policy guidelines. However, individual laboratory guidelines on specimen referrals are in place for CVL and Regional Veterinary Investigation Laboratories (RVILs)
- Specimen referral and transportation is done by Animal Health staff stationed in all 47 counties or contracted courier services
- The country participates in the Eastern African Regional Laboratory Network (EARLN) for FMD
- Majority of population who require veterinary laboratory services normally submit their samples to the nearest veterinary laboratories (regional veterinary Investigation Laboratories). If need be, these samples are further sent to CVL by the RVILs and results transmitted back to them by email or manually

Target – **Level 5** - Demonstrated capability plus, transport specimens to/from other labs in the region; specimen transport is funded from host country budget

Planned Activities:

- Assess and identify gaps in the current specimen transport and referral system
- Train national and sub-national laboratory staff on laboratory biosafety and biosecurity, specimen collection, storage, package and specimens shipment

D.1.4. Laboratory Quality System

Current Status - Level 4:

- Mandatory licensing of all health laboratories is in place and conformity to a national quality standard is required.
- Kenya Veterinary Board (KVB) is responsible for veterinary laboratory inspection and licensing as provided for in the Veterinary Surgeons and Veterinary Paraprofessionals Act of 2011.
- The KVB conducts inspection twice a year but is currently challenged with not enough staff
 to meet the capacity of the work at hand. The Board is working on modalities of how to
 undertake and meet all its mandates.
- The national body in charge of laboratory certification for veterinary laboratory is the Kenya National Accreditation Service (KENAS) and the veterinary laboratory is certified for IEC/ISO 17025.
- Currently no veterinary laboratory is accredited by foreign agencies or laboratory or but three of the national and regional laboratories have applied for external assessment by standard agencies.

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- The details of the qualification and registration mechanisms are currently being developed comprehensively by the KVB
- Partial-supervision teams are planned and are budgeted for and once the funds are made available, selected team of experts are tasked to undertake the supervisions missions for all veterinary laboratories. Currently, standardized supervision checklists or procedures are not available.
- The indicators to measure the progress in laboratory test quality are available. Reports are written after each QA audits. This is progressive.
- The national external quality assessment (EQA) programme/s (proficiency testing) and the
 responsible organization are available for the following: Newcastle Disease, Brucellosis,
 Avian influenza, PPR, ASF, CBBP and FMD
- Proficiency testing is a requirement for Quality Testing in National laboratories
- Corrective actions are organized when assessment result is poor through the filling of corrective action form which is filled and signed by the laboratory management as a commitment on action to be taken on the poor results.

Target – Level 5 - Mandatory licensing of all health laboratories is in place and conformity to an international quality standard is required

Planned Activities:

 Conduct annual laboratory capacity assessment of the CVL and KALRO laboratories using FAO Laboratory Mapping Tool (LMT)

AP Workforce Development

D.4.1. Human resources are available to implement IHR core capacity requirements Current Status - Level 3:

- Multidisciplinary HR capacity is available at national and intermediate level
- Joint (cross-sectoral) trainings are in place, e.g. on disease investigation, epidemiology, including staff at the sub-national
- Training curricula are in place
- Animal health human resource capacity in the country
- At the national level, there 204 veterinarians including veterinary epidemiologist (number of epidemiologists not specified, 115 animal handlers, 27 vector and zoology personnel and 19 laboratory personnel ranging from senior scientist to lab technologist. The national level also hosts three Animal Health Industry Training Institutes which have 17 to 30 personnel of various cadres, meat training institute with 25 personnel and Dairy Institute with 25 personnel (see attached staff establishment for national level).

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- All counties have veterinary doctors although the numbers at the sub-national vary from
 one to another. The average number of veterinary doctors is seven per sub-national
 location and ranges from two to fifteen. All sub-national offices have animal handlers or
 para-veterinary assistants. These range between 13 and 90 from county to county with a
 mean of 33 per each sub-national administration.
- Animal health capacities at the national and sub-national levels are as follows:
- The national level has adequate capacities in animal health including various specialized capacities working with various animal health research institutions in Kenya. The Veterinary Epidemiology Section (VEES) within the Ministry of Agriculture, Livestock and fisheries has adequate veterinary epidemiologists. There are central and regional veterinary labs that are adequately staffed serving various regions of the country.
- At the sub-national and sub-county levels, a county veterinary officer exists. Animal
 assistants and handlers are available at both county and sub-county levels and have case
 management skills. At least two veterinary officers are available in each sub-national level
 and have been trained in basic and or intermediate-level epidemiology but less than 10
 counties have an advanced level field epidemiologists.
- Multi-disciplinary teams in the animal health field are organised in the following ways:
- National level: Within the MoALF, the State Department of Livestock (SDL) coordinates
 the animal health capacities and has various Sub-sections including the Epidemiology
 Section and Veterinary laboratories that coordinates epidemiology and laboratory
 functions respectively.
- The Zoonotic Disease Unit (ZDU) coordinates functions of one health and it draws expertise from animal and human health to address zoonotic disease surveillance and other One health challenges
- The MoALF works with Kenya Wildlife Service (KWS) closely on matters related to wildlife and veterinary epidemiologist are seconded to KWS to act as liaisons with the SDL.
- The coordination with Plant Health is not structured but is sought when needed on ad hoc basic
- The sub-national veterinary officer is the link between the sub-county and the national level. Although over 33 of the 47 sub-national level Ministry have structured one health teams, others are yet to implement visible structures at their county and sub-county levels; the sub-national and sub-county veterinary officers are expected to work with human health counterparts in zoonotic disease surveillance, data sharing and jointly respond to acute zoonotic events
- Veterinarians are mainly trained at College of Agriculture and Veterinary Sciences (CAVS)
 of the University of Nairobi and they are available at national, county and sub-county level.
 Postgraduate training in field epidemiology are jointly held with the human medical
 counterparts under the FELTP programme. At county and sub-county, one veterinarian is

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supported by a number of para-veterinarians including animal handlers trained at the Animal Health and Industry Training Institute (AHITI) or other recognized colleges in Kenya.

- The Kenya FELTP and Field Epidemiology Society of Kenya track their graduates and where they are placed or posted or employed. A detailed tracking sheet has been developed that tracks their place of employment and is updated annually. There are several other epidemiologists trained outside FELTP on both human and animal sides but not tracked.
- There is no structured or standard reporting specifically for epidemiologists but they use the existing channels of reporting that exist for reporting outbreaks or usual events from various surveillance system. They are a lot of ad-hoc peer to peer communication between epidemiologists at various levels of health when needed.
- The Field Epidemiology Society of Kenya which is the Alumni Association for the FELTP Kenya graduates holds annual meeting and seminars that brings together all graduates and thus promotes networking among epidemiologists working at different levels.
- There are existing systems and channels of communication for reporting from local to the national level depending on the animal disease involved. This has been described comprehensively under the Surveillance section of this document.
- All national, sub-national and sub-county offices have trained epidemiologists, animal health technicians and para-veterinarians for animal health purposes.

Target - Level 4: Multidisciplinary HR capacity is available as required at relevant levels of public health system (e.g. epidemiologist, social scientist, communication officers, para-veterinarians at national level and intermediate level and assistant epidemiologists (or short course trained epidemiologist) at local level

Planned Activities:

- Assess country human resource capacity (animal health) and identify gaps in resources and training needs at national and sub-national level
- Review and update content of the current FELTP training curriculum as applicable to meet the training needs in the animal health sector in collaboration with CDC and other relevant partner

PREVENT

National Legislation, Policy and Financing

Targets: States Parties should have an adequate legal framework to support and enable the implementation of all of their obligations and rights to comply with and implement the IHR (2005). In some States Parties, implementation of the IHR (2005) may require new or modified legislation. Even where new or revised legislation may not be specifically required under the State Party's legal system, States may still choose to revise some legislation, regulations or other instruments in order to facilitate their implementation and maintenance in a more efficient, effective or beneficial manner. State parties should ensure provision of adequate funding for IHR implementation through national budget or other mechanism.

Desired Impact: Legislation, laws, regulations, administrative requirements, policies or other government instruments and budget in place sufficiently support IHR implementation.

Indicator	Score	Challenges	Recommendation
P.1.1 Legislation, laws,	Limited	1. Lack of a consolidated legislation	1. Assess and identify relevant
regulations,	Capacity – 2	covering surveillance and response	existing legislation, regulations,
administrative		to public health events.	administrative requirements,
requirements, policies			and government instruments in
or other government		2. Implementation of IHR though	sectors needed for efficient
instruments in place		on going is not specifically	implementation of the IHR.
are sufficient for		domesticated in relevant laws.	
implementation of IHR.			2. Comprehensively revise
P.1.2 The state can	Developed		existing key legislations, policies
demonstrate that it has	Capacity -3		and regulations to address IHR
adjusted and aligned its			2005 and one health concept.
domestic legislation,			
policies and			4. Mobilize resources to ensure
administrative			sustainable financing for full
arrangements to			implementation of IHR core
enable compliance with			capacities
the IHR (2005).			

IHR COORDINATION, COMMUNICATION AND ADVOCACY

Targets: The effective implementation of the IHR (2005) requires multisectoral/multidisciplinary approaches through national partnerships for effective alert and response systems. Coordination of nationwide resources, including the sustainable functioning of a National IHR Focal Point (NFP), which is a national centre for IHR (2005) communications, is a key requisite for IHR (2005) implementation. The NFP should be accessible at all times to communicate with the WHO IHR Regional Contact Points and with all relevant sectors and other stakeholders in the country. States Parties should provide WHO with contact details of NFPs, continuously update and annually confirm them.

Desired impact: A mechanism for multisectoral/multidisciplinary coordination, communication and partnerships is functional to detect, assess and respond to any public health event or risk. The NFP is accessible at all times to communicate with the WHO IHR Regional Contact Points and with all relevant sectors and other stakeholders in the country.

Inc	dicator	Score	Challenges	Recommendation

P.2.1 A functional	No Capacity-1	1. Weak coordination between	1. Strengthened coordination
mechanism is	N 485	sectors.	between sectors.
established for the		2. Lack of Standard Operating	2. Strengthen advocacy and
coordination and		Procedures (SOP)	awareness of IHR implementation.
integration of		3. Lack of communication	3. Develop standard operating
relevant sectors in		mechanisms between relevant	procedures (SOP) for
the implementation		ministries.	communication and reporting.
of IHR.			4. Establish mechanisms for regular
			data sharing and information
			exchange.
ANTIN MODODIAL DEGL	TANIOE (444D) DET	ECTION	

ANTIMICROBIAL RESISTANCE (AMR) DETECTION

Target: Support work being coordinated by WHO, FAO, and OIE to develop an integrated global package of activities to combat antimicrobial resistance, spanning human, animal, agricultural, food and environmental aspects (i.e. a one-health approach), including: a) Each country has its own national comprehensive plan to combat antimicrobial resistance; b) Strengthen surveillance and laboratory capacity at the national and international level following agreed international standards developed in the framework of the Global Action plan, considering existing standards and; c) Improved conservation of existing treatments and collaboration to support the sustainable development of new antibiotics, alternative treatments, preventive measures and rapid, point-of-care diagnostics, including systems to preserve new antibiotics.

Desired Impact: Decisive and comprehensive action to enhance infection prevention and control activities to prevent the emergence and spread of AMR, especially among drug-resistant bacteria. Nations will strengthen surveillance and laboratory capacity; ensure uninterrupted access to essential antibiotics of assured quality; regulate and promote the rational use of antibiotics in human medicine and in animal husbandry and other fields as appropriate; and support existing initiatives to foster innovations in science and technology for the development of new antimicrobial agents.

Indicator	Score	Challenges	Recommendation
P.3.1 Antimicrobial resistance (AMR) detection.	Developed Capacity -3	Weak microbiology technical capacity. Inadequate and inconsistent laboratory supplies.	 Establish and Strengthen an integrated surveillance system for detecting and reporting AMR. Implement the developed AMR
P.3.2 Surveillance of infections caused by AMR pathogens.	Limited Capacity-2	3. Weak physical infrastructure in support of microbiology.4. Poor understanding of the role of microbiology in hospitals by	surveillance strategy. Increase the number of participating sites from 2 to 5. 4. Secure adequate funding to
P.3.3 Healthcare associated infection prevention and control programs.	Limited Capacity-2	 management. 5. Lack of institutionalized IPC committees/ teams in hospitals. 6. Lack of a national reporting system for HAIs. 	support the implementation of AMR surveillance strategy. 5. Establish a surveillance system for Health Care Associated Infections.
P.3.4 Antimicrobial stewardship activities	Limited Capacity-2		 Institutionalize Antimicrobial Stewardship Programs in the Health Care settings. Increase understanding and awareness of AMR. Develop a communication strategy for AMR.

ZOONOTIC DISEASES

Target: Adopted measured behaviours, policies and/or practices that minimize the transmission of zoonotic diseases from animals into human populations.

Desired Impact: Implementation of guidance and models on behaviours, policies and practices to minimize the spill over, spread, and full emergence of zoonotic disease into or out of human populations prior to the development of efficient human-to-human transmission. Nations will develop and implement operational frameworks—based on international standards, guidelines, and successful existing models—that specify the actions necessary to promote One Health approaches to policies, practices and behaviours that could minimize the risk of zoonotic disease emergence and spread.

Indicator	Score	Challenges	Recommendation
P.4.1 Surveillance systems in place for	Developed Capacity - 3	No formal arrangements in sharing of surveillance	Establish formal arrangements for
priority zoonotic diseases/pathogens.		data between sectors 2. Inadequate surveillance	information sharing between sectors
P.4.2 Veterinary or Animal Health	Demonstrated Capacity - 4	reporting structure in animal health sector	Support MALF in establishing a functional surveillance
Workforce.		3. Low involvement of Counties in the One	system 3. Train Counties on One
P.4.3 Mechanisms for responding to infectious zoonoses	Developed Capacity - 3	Health approach	Health approach and advocate for One among stakeholders
and potential zoonoses are			Stakenolders
established and functional.			

FOOD SAFETY

Target: States Parties should have surveillance and response capacity for food and water borne disease risk or events. It requires effective communication and collaboration among the sectors responsible for food safety and safe water and sanitation.

Desired Impact: Timely detection and effective response of potential food-related events in collaboration with other sectors responsible for food safety.

Indicator	Score	Challenges	Recommendation
P.5.1 Mechanisms	Developed	1. Lack of institutional structures	1. The National Food Safety Policy
are established and	Capacity-3	at county levels.	document should be signed into law.
functioning for		2. Limited knowledge on SPS.	2. NFSCC members should be legally
detecting and		3. Lack of adequate funding for	gazette.
responding to		food safety activities.	3. Develop institutional structures at
foodborne disease		4. Lack of laboratory capacity for	the county level that are in harmony
and food		real time food stuff analysis.	with the national government.
contamination.		5. Difficulty in tracing food	4. Sensitize on and implement the SPS
		products in the local market.	measures in the country.

5. Allocate more funds for food safety
activities.
6. Capacity build food laboratories to
enable real time analysis of food
stuff.

BIOSAFETY AND BIOSECURITY

Target: A whole-of-government national biosafety and biosecurity system is in place, ensuring that especially dangerous pathogens are identified, held, secured and monitored in a minimal number of facilities according to best practices; biological risk management training and educational outreach are conducted to promote a shared culture of responsibility, reduce dual use risks, mitigate biological proliferation and deliberate use threats, and ensure safe transfer of biological agents; and country-specific biosafety and biosecurity legislation, laboratory licensing, and pathogen control measures are in place as appropriate.

Desired Impact: Implementation of a comprehensive, sustainable and legally embedded national oversight program for biosafety and biosecurity, including the safe and secure use, storage, disposal, and containment of pathogens found in laboratories and a minimal number of holdings across the country, including research, diagnostic and biotechnology facilities. A cadre of biological risk management experts possesses the skillset to train others within their respective institutions. Strengthened, sustainable biological risk management best practices are in place using common educational materials. Rapid and culture-free diagnostics are promoted as a facet of biological risk management. The transport of infectious substances will also be taken into account.

Indicator	Score	Challenges	Recommendation
P.6.1 Whole-of-	Limited Capacity	1. Weak pathogen repository	1. Strengthen coordination among
government	- 2	and inventory systems	key sectors.
biosafety and		(including updated	2. Customize regulations and
biosecurity system is		pathogen databases)	guidelines to support biosafety and
in place for human,		2. Lack of a coordination	biosecurity.
animal, and		mechanism between key	3. Advocate for adequate funding for
agriculture facilities.		stakeholders.	biosafety and biosecurity.
P.6.2 Biosafety and	Developed	3. Lack of a common	4. Develop common a curriculum for
biosecurity training	Capacity - 3	Biosafety/ Biosecurity	MOH, MALF, KWS and Plant Health.
and practices.	02 Amil	training curriculum for	5. Conduct joint bio-risk assessments.
~		MOH, MALF, KWS and Plant	6. Strengthen pathogen repository
		Health.	and inventory systems (including
		4. Inadequate funding to	updated pathogen databases).
		support Biosafety and	
		Biosafety activities.	
		5. Lack of customized	
		regulations and guidelines	
		to support biosafety and	
		biosecurity.	
		DETECT	

NATIONAL LAB SYSTEMS

Target: Real-time Bio-surveillance with a national laboratory system and effective modern point-of-care and laboratory-based diagnostics.

Desired Impact: Effective use of a nationwide laboratory system capable of safely and accurately detecting and characterizing pathogens causing epidemic disease, including both known and novel threats, from all parts of the country. Expanded deployment, utilization and sustainment of modern, safe, secure, affordable and appropriate diagnostic tests or devices established.

Indicator	Score	Challenges	Recommendation
D.1.1 Laboratory	Demonstrated	1. Heavy reliance on donor support.	1. Develop a refresher curriculum
testing for detection of priority diseases.	Capacity – 4	2. Low EQA coverage at sub-national level.	for training in specimen referral system.
D.1.2 Specimen	Limited	3. Lack of sufficient storage capacity	2. Develop specimen referral
referral and transport system.	Capacity – 2	at referral labs. 4. Lack of an evaluation system for	protocols to sensitize and streamline lab referral services.
D.1.3 Effective modern point of care and laboratory based diagnostics.	Limited Capacity – 2	POC T technology. 5. Lack of supplies for POC diagnostics for certain diseases. 6. Laxity in enforcing licensing for	3. Develop and implement integrated laboratory POCT guidelines/strategy.
D.1.4 Laboratory Quality System	Limited Capacity – 2	government laboratories.	

REAL TIME SURVEILLANCE

Target: Strengthened foundational indicator- and event-based surveillance systems that are able to detect events of significance for public health, animal health and health security; improved communication and collaboration across sectors and between sub-national (local and intermediate), national and international levels of authority regarding surveillance of events of public health significance; improved country and intermediate level/regional capacity to analyse and link data from and between strengthened, real-time surveillance systems, including interoperable, interconnected electronic reporting systems. This can include epidemiologic, clinical, laboratory, environmental testing, product safety and quality, and bioinformatics data; and advancement in fulfilling the core capacity requirements for surveillance in accordance with the IHR and the OIE standards.

Desired Impact: A functioning public health surveillance system capable of identifying potential events of concern for public health and health security, and country and intermediate level/regional capacity to analyse and link data from and between strengthened real-time surveillance systems, including interoperable, interconnected electronic reporting systems. Countries will support the use of interoperable, interconnected systems capable of linking and integrating multi-sectoral surveillance data and using resulting information to enhance the capacity to quickly detect and respond to developing biological threats. Foundational capacity is necessary for both indicator-based (including syndromic) surveillance and event-based surveillance, in order to support prevention and control activities and intervention targeting for both established infectious diseases and new and emerging public health threats. Strong surveillance will support the timely recognition of the emergence of relatively rare or previously undescribed pathogens in specific countries.

Indicator	Score	Challenges	Recommendation
D.2.1 Indicator and	Developed	1. Roll out of the revised IDSR	1. Roll out to all counties and
event based	Capacity - 3	Technical Guidelines (2012) has been	sensitize HCWs in major facilities.
surveillance		done in 11 out of the 47 counties	2. Develop guidelines for event
systems.		(36%).	based surveillance
D.2.2 Interoperable,	Limited Capacity	2. Inadequate Event Based	
interconnected,	- 2	Surveillance at subnational level.	

electronic real-time		3. Limited Community Based Disease	3. Roll out event based
reporting system.		Surveillance.	surveillance to the sub-national
D.2.3 Analysis of	Developed	4. High turnover of trained health	level.
surveillance data.	Capacity - 3	workers.	4. Continuously develop capacity
D.2.4 Syndromic	Developed	5. Inadequate pre-service training for	among in-service health
surveillance	Capacity - 3	implementation of IDSR functions.	workforce and include IDSR in
systems.		6. Weekly feedback bulletin shared	pre-service training.
		via email does not reach lower levels.	5. Establish a mechanism of
		6. Laboratory data does not directly	incorporating lab data in the main
		feed into the existing electronic	stream IDSR data.
		surveillance reporting system.	6. Conduct advocacy for resource
		7. Lack of a specific budget line for	mobilisation at national and
		surveillance at both national and	county levels.
		county levels.	7. Create a budget line item for
		8. Data analysis and use by the health	surveillance at national and
		care system remains sub-optimal.	county level.
			8. Build capacity of key staff on
			data analysis and data use for
			decision making.

REPORTING

Target: Timely and accurate disease reporting according to WHO requirements and consistent coordination with FAO and OIE.

Desired Impact: Countries and their National IHR Focal Points, OIE Delegates, and WAHIS National Focal Points will have access to a toolkit of best practices, model procedures, reporting templates, and training materials to facilitate rapid (within 24 hours) notification of events that may constitute a PHEIC to WHO / listed diseases to OIE and will be able to rapidly (within 24/48 hours) respond to communications from these organizations.

Indicator	Score	Challenges	Recommendation
D.3.1 System for	Developed	1. Lack of specific SOPs /documented	1. Develop documents and ToRs
efficient reporting	Capacity - 3	protocols for reporting on a potential	on designation and structure of
to WHO, FAO and		PHEIC to WHO.	the NFP.
OIE.		2. NFP for IHR at the MOH does not	2. Develop protocols and
D.3.2 Reporting	Limited Capacity	include stakeholders from other	regulations to govern reporting
network and	- 2	relevant line ministries/sectors	on potential PHEIC to WHO.
protocols in country.		3. Weak linkages between public	3. Restructure the NFP to include
		health and other relevant sectors	relevant sectors.
			4. Strengthen mechanisms for
			collaboration and coordination
			among relevant sectors.

WORK FORCE DEVELOPMENT

Target: State parties should have skilled and competent health personnel for sustainable and functional public health surveillance and response at all levels of the health system and the effective implementation of the IHR (2005). A workforce includes physicians, animal health or veterinarians, biostatisticians, laboratory scientists,

farming/livestock professionals, with an optimal target of one trained field epidemiologist (or equivalent) per 200,000 population, who can systematically cooperate to meet relevant IHR and PVS core competencies.

Desired Impact: Prevention, detection, and response activities conducted effectively and sustainably by a fully competent, coordinated, evaluated and occupationally diverse multi-sectoral workforce.

Indicator	Score	Challenges	Recommendation
Indicator D.4.1 Human resources are available to implement IHR core capacity requirements. D.4.2 Applied epidemiology training program in place such as FETP. D.4.3 Workforce strategy	Score Developed capacity -3 Sustainable Capacity- 5 Limited Capacity - 2	Challenges 1. Only about 20% of the registered health workers work with the government. The proportion is further affected by high attrition rates. 2. There is a multi-disciplinary team at the national level but counties and sub-counties have varying capacities. 3. One Health co-ordination not well structured at the sub-national levels. 4. FELTP program is fully funded by donors making it unsustainable. 5. Apart from monthly and quarterly data collection on staff returns, there is no other demonstrated and consistent way of tracking the work force strategy.	Recommendation 1. Include tracking of all cadres involved in IHR capacity implementation in the workforce strategy 2. Work with counties in implementing the Health HR guideline 3. Develop a structured and systematic communication and coordination mechanism at national and sub-national levels. 4. Government should investment in the FELTP program for sustainability. 5. Implement the workforce strategy at national and county levels. 6. Develop mechanisms to track and review the workforce strategy.
		RESPOND	

PREPAREDNESS

Targets: Preparedness includes the development and maintenance of national, intermediate and local or primary response level public health emergency response plans for relevant biological, chemical, radiological and nuclear hazards. This covers mapping of potential hazards, identification and maintenance of available resources, including national stockpiles and the capacity to support operations at the intermediate and local or primary response levels during a public health emergency.

Desired Impact: Emergency response operation up to sub-national (local and intermediate) level during public health emergency is successfully conducted in line with the emergency response plan with adequate support of resources and capacities.

Indicator	Score	Challenges	Recommendation
R.1.1 Multi-hazard	No Capacity - 1	1. Lack of plans and resources for	1. Completion of all hazards
national public		stockpiles.	plan.
health emergency			2. Setting up contingency funds
preparedness and			3. Updating of preparedness
response plan is			plans
developed and			
implemented.			

R.1.2 Priority public	No Capacity -1	4.	Development	of	plans,
health risks and	N 155	pro	curement		and
resources are		pre	positioning of st	ockp	iles
mapped and					
utilized.					

EMERGENCY OPERATIONS CENTER

Target: Countries will have a public health emergency operation centre (EOC) functioning according to minimum common standards; maintaining trained, functioning, multi-sectoral rapid response teams and "real-time" biosurveillance laboratory networks and information systems; and trained EOC staff capable of activating a coordinated emergency response within 120 minutes of the identification of a public health emergency.

Desired Impact: Effective coordination and improved control of outbreaks as evidenced by shorter times from detection to response and smaller numbers of cases and deaths.

Indicator	Score	Challenges	Recommendation
R.2.1 Capacity to	No Capacity - 1	1. Challenges in coordinating response	1. Conduct training of Rapid
Activate Emergency		within 120hrs.	Response Teams at levels.
Operations.		2. Lack of adequate technical capacity.	2. Conduct training of national
R.2.2 Emergency	Limited Capacity	3. Majority of the ambulances do not	team on disease outbreak
Operations Centre	- 2	meet the minimum international	investigations.
Operating		standards.	3. Strengthen coordination
Procedures and		4. Inadequate isolation facilities.	among key stakeholders and at
Plans.		5. Limited lab linkage.	sub national levels.
R.2.3 Emergency	No Capacity - 1	6. Limited resources.	4. Ensure maintenance of EOC
Operations			ICT equipment.
Program.			5. Establishment of power
R.2.4 Case	Limited Capacity		backup.
management	- 2		6.Conduct simulation exercises
procedures are			
implemented for			
IHR relevant			
hazards.			

LINKING PUBLIC HEALTH AND SECURITY

Target: In the event of a biological event of suspected or confirmed deliberate origin, a country will be able to conduct a rapid, multisectoral response, including the capacity to link public health and law enforcement, and to provide and/or request effective and timely international assistance, including to investigate alleged use events.

Desired Impact: Development and implementation of a memorandum of understanding (MOU) or other similar framework outlining roles, responsibilities, and best practices for sharing relevant information between and among appropriate human and animal health, law enforcement, and defence personnel and validation of the MOU through periodic exercises and simulations. In collaboration with FAO, International Criminal Police Organization (INTERPOL), OIE, WHO, individual Biological and Toxin Weapons Convention States Parties (and where appropriate the Implementation Support Unit), the United Nations Secretary-General's Mechanism for Investigation of Alleged Use of Chemical and Biological Weapons (UNSGM), and other relevant regional and international organizations as appropriate, countries will develop and implement model systems to conduct and support joint criminal and epidemiological investigations to identify and respond to suspected biological incidents of deliberate origin.

Indicator	Score	Challenges	Recommendation
R.3.1 Public Health	Limited Capacity	1. Lack of MoUs and SOPs to facilitate	1. Create a TWG to support
and Security	- 2	and support linkage between Public	linkage of Public Health and
Authorities, (e.g.		Health and Security authorities.	Security Authorities.
Law Enforcement,			2. Develop MoUs and SOPs to
Border Control,			facilitate and support linkage
Customs) are linked			between Public Health and
during a suspect or			Security authorities.
confirmed biological			
event.			

MEDICAL COUNTER MEASURES AND PERSONNEL DEPLOYMENT

Target: A national framework for transferring (sending and receiving) medical countermeasures and public health and medical personnel among international partners during public health emergencies.

Desired Impact: Countries will have the necessary legal and regulatory processes and logistical plans to allow for the rapid cross-border deployment and receipt of public health and medical personnel during emergencies. Regional (international) collaboration will assist countries in overcoming the legal, logistical and regulatory challenges to deployment of public health and medical personnel from one country to another.

Indicator	Score	Challenges	Recommendation
R.4.1 System is in place for sending and receiving medical countermeasures during a public		1. Lack of an all hazard plan. 2. Lack of a national plan for medical counter measures and personnel deployment. 3. Lack of a legal framework to support sending and receiving of medical	 Develop an all hazards plan. Develop mechanisms and plans for sending and receiving medical counter measures and personnel deployment during public health emergencies.
R.4.2 System is in place for sending and receiving health personnel during a public health emergency.	No capacity - 1	personnel during public health emergencies.	3. Establish surge capacity to respond to Public Health emergency for both Animal and human health.

RISK COMMUNICATION

Target: States Parties should have risk communication capacity which is multi-level and multi-faced, real time exchange of information, advice and opinion between experts and officials or people who face a threat or hazard to their survival, health or economic or social well-being so that they can take informed decisions to mitigate the effects of the threat or hazard and take protective and preventive action. It includes a mix of communication and engagement strategies like media and social media communication, mass awareness campaigns, health promotion, social mobilization, stakeholder engagement and community engagement.

Desired Impact: Responsible entities effectively communicate and actively listen and incorporate the publics' and communities' concerns through the media, social media, mass awareness campaigns, health promotion, social

mobilization, stakeholder engagement and community engagement for increased risk awareness to reduce and mitigate the expected impact of the health hazard before during and after public health events.

Indicator	Score	Challenges	Recommendation
R.5.1 Risk Communication Systems (plans, mechanisms, etc.) R.5.2 Internal and Partner Communication and Coordination R.5.3 Public Communication R.5.4 Communication Engagement with Affected Communities	Developed Capacity – 3 Developed Capacity – 3 Limited Capacity – 2	 National risk communication plan(s) are not tested No dedicated budget line for communications personnel, materials and activities for emergencies No formal mechanism in the animal health sector to coordinate communication with the private sector during an emergency 	1. Ensure that all communication plans are tested at least once a year 2. Advocate for a dedicated budget for risk communication 3. Animal health sector to establish formal mechanisms of communication with private sector
R.5.5 Dynamic Listening and Rumour Management	Developed Capacity – 3		

OTHER IHR-RELATED HAZARDS AND POINTS OF ENTRY (POES)

POINTS OF ENTRY (POE)

Targets: States Parties should designate and maintain the core capacities at the international airports and ports (and where justified for public health reasons, a State Party may designate ground crossings) which implement specific public health measures required to manage a variety of public health risks.

Desired Impact: Timely detection and effective response of any potential hazards that occur at PoE.

Indicator		Score	Challenges	Recommendation
PoE.1	Routine	Developed	1. The evaluation tool concentrated more	1. Develop SOPs and
Capacities	are	Capacity - 3	on the international travelers using the	guidelines for all activities at
established	l at PoE.		Airports and less on ground crossings and	POEs in Kenya.
PoE.2	Effective	Developed	seaports	2. Develop a National PH
Public	Health	Capacity – 3.	2. The evaluation tool concentrated more	Contingency Plan to guide all
Response	at Points		on Human health and less on Animal	POEs to ensure uniformity in
of Entry.			health despite possibilities of zoonotic	response and continuous
			infections	updates.
			3. Most of Health facilities at the county	3. Publish or document events
			level do not have diagnostic facilities thus	at POEs.
			a challenge for the border posts without	
			health facilities.	
			4. Ambulances are not well equipped.	

		5. The One Stop Border posts have inadequately equipped emergency/first aid facilities and lack clinical staff.
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CHEMICAL EVENTS

Target: States Parties should have surveillance and response capacity for chemical risk or events. This requires effective communication and collaboration among the sectors responsible for chemical safety, industries, transportation and safe disposal.

Expected Impact: Timely detection and effective response of potential chemical risks and/or events in collaboration with other sectors responsible for chemical safety, industries, transportation and safe disposal.

Indicator	Score	Challenges	Recommendation
CE.1 Mechanisms	Limited	1. Lack of adequate technical capacity	1. Fast track passing of pending
are established and	capacity - 2	(in preparedness and equipment).	legislations on chemical incidents
functioning for		2. Inadequate resources to finance	and chemical safety.
detecting and		chemical response activities such as	2. Urgent acquisition of detection,
responding to		training.	monitoring and surveillance
chemical events or		3. Weak legislation and enforcement	equipment and IPEs.
emergencies.		systems.	3. Immediate training and
CE.2 Enabling	Limited	4. Inhibiting bureaucracy in	sensitization of all chemical
environment is in	capacity - 2	procurement /acquisition of key	incidents emergency responders.
place for		response equipment and capacity	
management of		building in relevant government	
chemical Events.		institutions.	
		5. Legislation to domesticate the CWC	
		is still pending since it was ratified in	
		1997	
		6. Weak Cooperation among	
		stakeholders in ensuring sound	
		handling of dangerous chemicals in	
		transportation and warehousing.	
		7. Lack of mass decontamination	
		facilities for victims and personnel in	
		case of chemical incident.	

RADIATION EMERGENCIES

Target: States Parties should have surveillance and response capacity for radio-nuclear hazards/events/emergencies. This requires effective communication and collaboration among the sectors responsible for radio-nuclear management.

Desired Impact: Timely detection and effective response of potential radio-nuclear hazards/events/emergencies in Collaboration with other sectors responsible for radio-nuclear management.

Indicator	Score	Challenges	Recommendation
RE.1 Mechanisms	Limited	1. Lack of a baseline public health	1. Conduct a national baseline Public
are established and	capacity - 2	assessment with regard to	health assessment with regard to
functioning for		radiation.	radiation.

detecting and		2. Lack of National policies for	2. Develop national policies for
responding to		detection, assessment and	detection, assessment and response
radiological and		response to radiation emergencies.	to radiation emergencies.
nuclear		3. Lack of implementation of	3. Implementation of detection
emergencies.		detection strategies at entry/exit	strategies at all entry/exit points.
RE.2 Enabling	Limited	points.	4. Set up Reference health facilities
environment is in	capacity - 2	4. Insufficient human resource.	for radiological emergencies.
place for		5. Lack of Reference health facilities	5. Establishment/ development of
management of		for radiological emergencies.	MoUs to enter into with involved
Radiation		6. Lack of MoUs with involved	laboratories.
Emergencies.		laboratories.	

Capacities	Indicators	Score		
National Legislation, Policy and Financing	P.1.1 Legislation, laws, regulations, administrative requirements, policies or other government instruments in place are sufficient for implementation of IHR.	2		
	P.1.2 The state can demonstrate that it has adjusted and aligned its domestic legislation, policies and administrative arrangements to enable compliance with the IHR (2005)	3		
IHR Coordination, Communication and Advocacy	P.2.1 A functional mechanism is established for the coordination and integration of relevant sectors in the implementation of IHR.			
	P.3.1 Antimicrobial resistance (AMR) detection	3		
Antimicrobial Resistance	P.3.2 Surveillance of infections caused by AMR pathogens	2		
	P.3.3 Healthcare associated infection (HCAI) prevention and control programs	2		
	P.3.4 Antimicrobial stewardship activities	2		
	P.4.1 Surveillance systems in place for priority zoonotic diseases/pathogens	3		
Zoonotic Disease	P.4.2 Veterinary or Animal Health Workforce	4		
	P.4.3 Mechanisms for responding to zoonoses and potential zoonoses are established and functional	3		
Food Safety	P.5.1 Mechanisms are established and functioning for detecting and responding to foodborne disease and food contamination.			
Biosafety and Biosecurity	P.6.1 Whole-of-Government biosafety and biosecurity system is in place for human, animal, and agriculture facilities	2		
	P.6.2 Biosafety and biosecurity training and practices	3		
Immunization	P.7.1 Vaccine coverage (measles) as part of national program			
immunization	P.7.2 National vaccine access and delivery			
	D.1.1 Laboratory testing for detection of priority diseases	4		
National Laboratory	D.1.2 Specimen referral and transport system	2		
System	D.1.3 Effective modern point of care and laboratory based diagnostics	2		
	D.1.4 Laboratory Quality System	2		
	D.2.1 Indicator and event based surveillance systems	3		
Real-Time Surveillance	D.2.2 Inter-operable, interconnected, electronic real-time reporting system	2		
	D.2.3 Analysis of surveillance data	3		
	D.2.4 Syndromic surveillance systems	3		

Reporting	D.3.1 System for efficient reporting to WHO, FAO and OIE	3
	D.3.2 Reporting network and protocols in country	2
	D.4.1 Human resources are available to implement IHR core capacity requirements	3
Workforce Development	D.4.2 Field Epidemiology Training Program or other applied epidemiology training program in place	5
	D.4.3 Workforce strategy	2
Preparedness	R.1.1 Multi-hazard National Public Health Emergency Preparedness and Response Plan is developed and implemented	1
	R.1.2 Priority public health risks and resources are mapped and utilized.	1
	R.2.1 Capacity to Activate Emergency Operations	1
Emergency Response	R.2.2 Emergency Operations Center Operating Procedures and Plans	2
Operations	R.2.3 Emergency Operations Program	1
	R.2.4 Case management procedures are implemented for IHR relevant hazards.	2
Linking Public Health and Security Authorities	R.3.1 Public Health and Security Authorities, (e.g. Law Enforcement, Border Control, Customs) are linked during a suspect or confirmed biological event	
Medical Counter measures and	R.4.1 System is in place for sending and receiving medical countermeasures during a public health emergency	1
Personnel Deployment	R.4.2 System is in place for sending and receiving health personnel during a public health emergency	1
	R.5.1 Risk Communication Systems (plans, mechanisms, etc.)	1
Risk Communication	R.5.2 Internal and Partner Communication and Coordination	3
	R.5.3 Public Communication	3
	R.5.4 Communication Engagement with Affected Communities	2
	R.5.5 Dynamic Listening and Rumour Management	3
Points of Entry	PoE.1 Routine capacities are established at PoE.	3
(PoE)	PoE.2 Effective Public Health Response at Points of Entry	3

Chemical Events	CE.1 Mechanisms are established and functioning for detecting and responding to chemical events or emergencies.	2
	CE.2 Enabling environment is in place for management of chemical Events	2
Radiation	RE.1 Mechanisms are established and functioning for detecting and responding to radiological and nuclear emergencies.	2
Emergencies	RE.2 Enabling environment is in place for management of Radiation Emergencies	2

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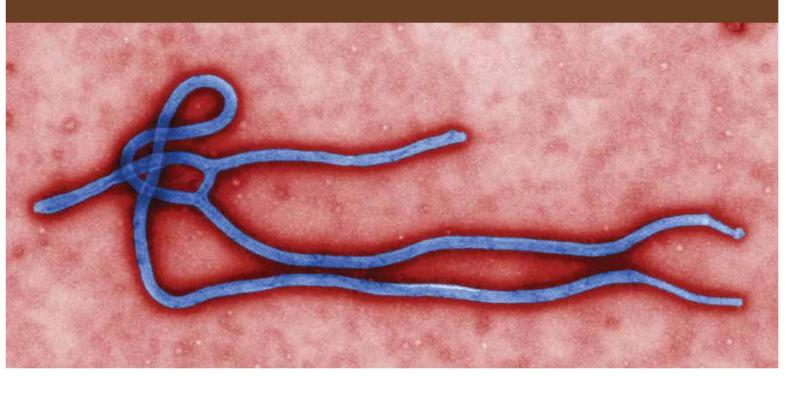
Anthony" <anthony@ecohealthalliance.org>; "Brian Bird" <bhbird@ucdavis.edu>

Subject: FAO EBOLA GUIDANCE **Attachments:** FAO RRA.pdf, ATT00001.htm



Addressing Zaire Ebola virus (EBV) outbreaks

Rapid qualitative exposure and release assessment



SUMMARY

The potential exposure and spread of EBOV

The outputs from this rapid qualitative exposure and release assessment are highlighted below:

- 1 The likelihood of spillover to one human from:
 - » one individual fruit bat, such as Hypsignathus spp., Epomops spp., Mops spp., Micropterus spp., Rousettus spp. and Myonycteris spp., through handling and consumption can be considered as very low,
 - » one individual from other wild mammalian species, such as non-human primates like gorillas (Gorilla gorilla) and chimpanzees (Pan troglodytes) or non-primate species, like black-backed duikers (Cephalophus dorsalis), can be considered as very low

Even if such spillovers can be **viewed as rare events**, their consequences are nonetheless disastrous. Human-to-human transmission of the virus can lead to important epidemics that are difficult to control, especially when people are engaging in risky practices (funeral or health care centres).

- 2 The likelihood of spillover to one human from domestic mammalian species, such as:
 - » dogs can be considered very low to low,
 - » domestic pigs as very low.
- 3 The likelihood of EBOV being transmitted to humans through trade, handling or consumption of meat from wild animals and leading to a new human outbreak in non-affected countries is considered very low.

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Following the ongoing outbreaks of Ebola virus disease (EVD) in several African countries reported since March 2014, the Food and Agriculture Organization of the United Nations (FAO) prepared a rapid qualitative exposure and release assessment in order to evaluate the role of meat from wild animals and related activities linked to Zaire Ebola virus (EBOV) in human populations. The likelihood for human exposure to EBOV through close contact with wild species, hunting, handling and consumption of meat from different wild species as well as the likelihood of introduction and onward transmission of EBOV in non-infected countries through the consumption and trade of wild animal meat are assessed in this document.

This rapid qualitative assessment is based upon information available up to 18 December 2014 and will be revised as circumstances change.

The reader should note that the uncertainty in the assessment of the different levels of likelihood remains high since there is a need for a better understanding of EBOV and related issues to provide a more precise assessment.

The background information used to conduct this rapid qualitative risk assessment can be found in the Annex at the end of this document.

1. MAIN RISK QUESTIONS ADDRESSED

- What is the likelihood for humans to be exposed to EBOV through close contact1 with wild mammalian species in EBOV suitable areas of Africa²?
- What is the likelihood for humans to be exposed to EBOV through close contact with domestic mammalian species in areas of Africa where EBOV is present?
- What is the likelihood of EBOV spreading to an unaffected country through movement of meat from wild animals originating from EBOV suitable or affected African countries?

2. MAIN ASSESSMENT

QUESTION 1. What is the likelihood for humans to be exposed to EBOV through close contact with wild mammalian species in EBOV suitable areas of Africa?

Considering that:

- Fruit bats, particularly of the genera Hypsignathus, Epomops, Mops, Micropterus, Rousettus and Myonycteris (Olson et al., 2012) are considered the likely natural host of EBOV in Africa; they can be infected and shed the virus without showing clinical signs of disease. These genera of bats, hunted by local populations for consumption, have been associated with spillovers of EBOV into rural settlements, while no other wild species were found to be affected by the virus. There is no evidence of other animals acting as naturally occurring reservoirs for EBOV.
- Other wild mammalian species, such as gorillas (Gorilla gorilla), chimpanzees (Pan troglodytes) and wild antelopes (Cephalophus dorsalis) showed high case fatality rates when exposed to EBOV and can be considered as wild sentinels of EBOV circulation in its forest environment. Human exposure and infection to EBOV through hunting, preparing and consuming such species was reported following close contact with blood and bodily fluids of infected animals and/or carcasses.
- Close contact can be defined as any contact with carcasses, blood and bodily fluids of infected species
- As defined in Pigott et al., 2014.

· EBOV spillover events from infected animals (infected fruit bats or other infected wild mammalian species) to humans may be seen as a rare event. Indeed, few EBOV outbreaks have been reported since the discovery of the virus in 1976 (Pigott et al., 2014). Some authors suggest that isolated human cases may happen frequently in forested communities without being reported, as several epidemiological sero-surveys report high prevalence of Ebola virus antibodies in the absence of reported outbreaks in those communities (Muyembe-Tamfum et al., 2012).

Therefore the likelihood for humans to be exposed to EBOV through close contact with:

- Fruit bats, especially of the genera Hypsignathus, Epomops, Mops, Micropterus, Rousettus and Myonycteris can be considered high3 from infected animals and nil in uninfected ones. The fact that these species are suspected to harbour the virus without showing clinical signs makes it difficult to differentiate if they are infected or not. In addition, it is not known how often and for how long the natural infection of fruit bat populations occurs and how often they come into contact with humans while shedding the virus. It seems that even if exposure of humans to the virus may occur via close contact with infected fruit bats, this event could be regarded as rare and might not always lead to human EBOV outbreaks. The likelihood (taking into account the rarity of exposure) of EBOV transmission from one fruit bat to one human could therefore be considered as very low;
- Other wild mammalian species, such as non-human primates like gorillas (G. gorilla) and chimpanzees (P.n. troglodytes) or non-primate species, like black-backed duikers (C. dorsalis), can be considered high when sick or dead EBOV infected animals of such species are handled or consumed. The exposure of humans to EBOV infected animals (sick or dead) might also be regarded as a rare event. As before, the likelihood of EBOV transmission from one wild mammalian species to one human could therefore be viewed as very low.

The reader should note that the uncertainty in the assessment of the different levels of likelihood remains high, since there is a need for a better understanding of EBOV.

It is important to remember that, aside from the first spillover event from an infected wild animal (clinically affected or not) to one single individual, the main exposure of humans to the virus during an epidemic is through close contact with bodily fluids from EBOV infected humans. Human-to-human transmission is likely to occur when engaging in risky practices (such as caring for an ill person or preparing the body of an Ebola patient for burial for instance), leading to high and potentially fatal consequences.

In the context of the EBOV epidemic in Western Africa (2014), genetic analyses conducted early in the outbreak suggest a single spill-over event, followed by human-to-human transmission (Gire et al., 2014). More information would be needed to clarify if other spillover events have happened since then.

QUESTION 2. What is the likelihood for humans to be exposed to EBOV through close contact with domestic mammalian species in areas of Africa where EBOV is present?

Considering that:

- In past EBOV infected areas, no domestic animal has been found infected with EBOV or linked to EBOV exposure in human so far. It remains yet to be identified
- Levels of likelihood are defined as follow (from highest to lowest levels): high (highly likely to occur), moderate (potentially occurring), low (unlikely to occur), very low (very unlikely to occur) and nil.



if domestic animals have a role in the epidemiological cycle. Dogs were shown to develop an immune reaction to EBOV (Allela et al., 2005) in highly infected areas (i.e. during an ongoing human epidemic) but were never associated with virus isolation or viral shedding (Olson et al., 2012). Their actual role in the transmission of the virus in highly infected areas has never been demonstrated and warrants investigation. It is, however, theoretically possible that dogs could act as passive carriers and serve as a source of virus for humans in highly infected areas, especially when feeding on infected corpses or contaminated materials.

An experimental study showed that EBOV can be transmitted from infected domestic pigs to non-human primates (Weingartl et al., 2012). Even if the minimal infectious dose for pigs via the oral-nasal route remains unknown, the study showed that shedding is primarily from the respiratory tract, and that infected pigs were able to infect other pigs and non-human primates via respiratory droplets without direct contact. Domestic pigs are susceptible under field conditions to Ebola Reston virus (REBOV), a strain that is avirulent for humans. No field data exists regarding their potential infection by EBOV.

Therefore the likelihood for humans to be exposed to EBOV through close contact with:

- Dogs can be considered very low to low. The likelihood of dogs spreading the virus mechanically after feeding on infected corpses or on bodily fluids in highly infected areas could be considered as low. In areas where deceased patients are appropriately buried and access by feral carnivores is prevented, this likelihood could be considered as very low. Nevertheless, their role as passive carriers should be further investigated;
- Domestic pigs: The results of the experimental study should be correlated with the epidemiological features of the disease in highly infected areas where symptomatic humans might not come in close enough contact with pigs

to be able to transmit the virus. For domestic pigs, the likelihood of acting as biological carriers can therefore be considered very low.

QUESTION 3. What is the likelihood of EBOV spreading to an unaffected country through the movement of meat from wild animals from EBOV suitable or affected African countries? Considering that:

- · Meat from domestic and wild animals is regularly transported illegally from Africa to Europe or the United States of America in various forms. One study (Chaber et al., 2010) estimated that 273 tonnes of meat from wild animals were imported every year into Paris Roissy-Charles de Gaulle (CGD) Airport in France on Air France carriers alone. Another study (Smith et al., 2012) estimated an average of 25 000 tonnes of meat from wild animals to enter the United States annually.
- Studies showed that meat from wild animals is shipped in various forms (e.g. raw, transported raw in coolers, lightly smoked or well dried). The type of wild animals was also highly variable. Non-human primates were most often found, along with other wild non EBOV susceptible species, such as cane rats (Thryonomys spp.). No meat of bat origin was identified in the studies consulted for this assessment, even though some reports indicate that meat from bats has been shipped illegally to the United States.
- Meat from wild animals is usually shipped, sold and consumed well cooked or smoked. Even if the effect of cooking (inactivated after 30 minutes at 60 °C) and boiling on EBOV infectivity (inactivated after 5 minutes) is documented, no data is available regarding the viral survival of the virus in smoked meat products. Carcasses are considered to remain infective for 3 to 4 days after the animal's death.
- In the context of the 2014 Western Africa outbreaks, activities like hunting, trading and consuming meat from wild animals have been banned in infected countries (e.g. in Sierra Leone, Guinea and Liberia) and other West



African countries to prevent wildlife-to-human spillover events. In Côte d'Ivoire for instance, a ban on meat from wild animals has been established and controls have been implemented in restaurants. Seized products of wildlife origin are destroyed. This ban has also affected commercial producers of farmed wild species, such as cane rats (genus Thryonomys), since it is not possible to differentiate their origin. Despite the ban on meat from wild animals, wildlife hunting is still ongoing in some western African countries.

Therefore:

- the likelihood of EBOV being present in fresh meat from wild animals (less than four days after the animal's death) is considered low if originating from fruit bats and dead or sick wild animal species in the EBOV suitable areas of Africa, including non-human primates and duikers described as being affected by the disease;
- the likelihood of humans being exposed to EBOV through transporting and preparing raw meat from fruit bats, dead or sick wild animals in the EBOV suitable areas of Africa, including non-human primates and duikers, is considered as low;
- the likelihood of the Ebola virus being found in thoroughly cooked meat from any wild species is considered very low;
- the likelihood of meat from wild animals being shipped from infected countries is considered low (if effective mitigation measures are in place limiting wildlife hunting and illegal trade for human consumption) to moderate;
- the likelihood of EBOV being transmitted to humans through the trade, handling or consumption of meat from wild animals and leading to a new human outbreak in non-affected countries is considered very low.

Wildlife hunting for consumption is common in the countries currently affected by the epidemic. The wild animal value chain, which involves a large range of stakeholders, is mainly informal and poorly regulated or documented. There is limited knowledge about the drivers of bush meat demand and marketing and its supply to urban centers. There is an urgent need for better understanding of value chains of wildlife products, of preparation and consumption practices as well as consumer preferences for meat from wild animals.

3. MITIGATION MEASURES AVAILABLE

The following risk mitigation measures should be considered to reduce the risk of EBOV transmission from wildlife to humans:

- In many areas of Africa, especially in currently affected Western African countries, meat from various wild species is a major source of protein, especially in rural areas. Therefore, a total ban on meat from wild animals might not be effective in those settings. Some studies have shown that bats and non-human primates represent an extremely small percentage of wild meat consumed in Central Africa.
- Communities should therefore be advised that:
 - » hunting, slaughtering, selling, preparing and consuming bush meat that originates from any species of bats should be avoided at all times;
 - » handling, slaughtering, selling, preparing and consuming bush meat that originates from wild mammalian species, such as gorillas (G.gorilla), chimpanzees (P. troglodytes) and wild antelopes (Cephalophus spp.) found sick or dead should be avoided. Since these species are protected, their hunting should be prohibited in any case.
- Continued monitoring and early warning of wildlife mortalities, using community engagement in rural areas aims to prevent exposure of human populations to zoonotic pathogens from wild species, such as EBOV and other viruses (Bisson et al., 2014; Olson et al., 2012). Early warning systems should be implemented to increase awareness of local populations with regards to safe procurement of meat in forested areas and inform the Ministries in charge of Health, Agriculture and Environment in a timely manner of unexpected wildlife mortalities. Community health officers should be wellversed in risk communication to address local populations. A total ban on meat from wild animals may be considered only during well-defined high-risk periods.
- Substitutes for meat from wild animals should be encouraged in order to provide alternate protein sources. Accredited commercial producers of some "wild" species, such as cane rats (genus Thryonomys), and producers of domestic animals (such as pig and poultry farms) can provide safer protein sources. Therefore, production and trade of meat originating from farmed wildlife should be promoted.



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ANNEX

BACKGROUND ON EBOLA VIRUS DISEASE

- On 22 March 2014, Guinean authorities reported an outbreak of EBOV to the World Health Organization (WHO).
- Since then, the EBOV outbreak rapidly spread within Guinea and to other countries, such as Sierra Leone, Liberia and Nigeria, leading to the biggest EBOV outbreak ever recorded in Africa, and in the world.
- Scientists investigating the source of the Guinean outbreak believe that this outbreak can be traced back to a 2-year-old boy in a village near Guéckédou, a remote forested area in southeastern Guinea, who died on 6 December 2013 a few days after he displayed fever, vomiting, and diarrhea. From there, the disease reportedly infected the child's mother, 3-year-old sister, and grandmother, before infecting a health care worker from Guéckédou. The team of epidemiologists traced the disease by reviewing hospital documentations and interviews with affected families, patients with suspected disease, and inhabitants of villages in which cases occurred4. Exposure to EBOV might have happened through close contact with fruit bats.
- Analysis of the viral sequence suggests that the virus involved in the Western African epidemics is a member of the Zaire lineage that has spread from Central Africa into Guinea and West Africa in recent decades (Dudas and Rambaut, 2014; Calvignac-Spencer et al., 2014; Gire et al., 2014).
- Serologic analyses of human blood samples collected between 2006 and 2008 suggest past human exposure to a virus of the Ebola genus in the West Africa region, although no outbreak had been previously observed (Schoepp et al., 2014). This suggests that an Ebola virus has been circulating in the region for some time.
- On 25 August 2014, a new EBOV outbreak was reported to WHO by the Ministry of Health of the Democratic Republic of Congo. So far no epidemiological or genetic evidence suggests that this outbreak is related to the Western African outbreak. The outbreak has since been controlled by the country authorities.
- Ebola viruses affect a large range of mammalian species, from humans to wild and domestic animals. Fruit bats, particularly of the genera Hypsignathus monstrosus, Epomops franqueti and Myonycteris torquata, are considered likely natural hosts for Ebola virus in Africa (Leroy et al., 2005; Hayman et al., 2012; Pourrut et al., 2005; Pourrut et al., 2009). Ebolavirus-specific antibodies were detected in serum, and nucleotide sequences were found in the liver and spleen tissues of those three African fruit bat species (Leroy et al., 2005; Pourrut et al., 2005). Some experimental infections of bats showed that they could become infected without showing symptoms and shed the virus in their feces (Swanepoel et al., 1996). Antibodies to EBOV have also been detected in additional bat species in Africa, including Micropteropus pusillus, Rousettus aegyptiacus and Mops condylurus (Pourrut et al., 2009). Epidemiological case-studies also showed a strong spatial and temporal association between the annual bat migration and Ebola outbreaks and further suggested that human exposure to bat blood could lead to EBOV outbreaks in human populations (Leroy et al., 2009). The geographical distribution of the three bat

- species of the genera Hypsignathus monstrosus, Epomops franqueti and Myonycteris torquata has been one of the main risk factors taken into account while assessing a first evidenced-based indicator of locations with potential for future zoonotic transmission of EBOV (Pigott et al. 2014). Despite this, no Ebola virus has been isolated from any free-ranging bat (Muyembe-Tamfum et al., 2012).
- Other wild mammalian species can be infected by EBOV, such as wild non-human primates like gorillas (Gorilla gorilla), chimpanzees (Pan troglodytes) (Bermejo et al., 2006, Formenty et al., 1999; Rouguet et al., 2005) and non-primate species like black-backed duikers (Cephalophus dorsalis) (Rouquet et al., 2005; Leroy et al., 2004) and other small wild mammals like rodents (Swanepeol et al., 1996). Their role as reservoirs has been disregarded as most of these species show high case fatality rates (Lahm et al., 2007) when their respective populations are exposed to EBOV.
- One experimental study showed that EBOV can be transmitted from infected pigs to non-human primates (Weingartl et al., 2012). Even if the minimal infectious dose for pigs via the oral-nasal route remains unknown, the study showed that older infected pigs were more likely to present respiratory symptoms (respiratory distress, coughing) than younger ones (thus remaining asymptomatic). The study also showed that shedding is primarily through the respiratory tract (via droplets of different sizes) and that infected pigs were able to infect other pigs and non-human primates without direct contact. Pigs were also found susceptible under field conditions to Ebola Reston in the Philippines (Miranda et al., 2011).
- The virus is first introduced to human populations from wild animals through close contact with blood, secretions, organs and other bodily fluids of infected wild mammalian species. In outbreaks for which information is available, the human index cases have invariably had direct contact with gorillas, chimpanzees, antelopes or bats (Muyembe-Tamfum et al., 2012). Large outbreaks among wild animals are believed to amplify human outbreaks by increasing the number of index transmission events (Rouquet et al., 2005). People likely to be exposed to the virus in its natural environment (Pigott et al., 2014) and likely to cause an outbreak in a limited population are bush meat hunters and people in contact with likely infected animal products. When the Ebola virus is introduced into a village, the outbreak seems to end spontaneously with a limited generation of cases (Muyembe-Tamfum et al., 2012).
- The increase in Ebola outbreaks since 1994 is frequently associated with drastic changes in forest ecosystems in tropical Africa, which may have promoted direct or indirect contact between humans and infected wild animals (Muyembe-Tamfum et al., 2012). The precise factors that result in Ebola virus outbreaks remain unknown, but require a better understanding of the complex linkages between ecological and socioeconomic factors in a constantly evolving interface between humans, animals and their ecosystems.
- The circulation of multiple lineages of EBOV in some past outbreaks suggests repeated exposure of humans and susceptible wild animals to the virus' natural hosts (Leroy et al., 2002; Rouquet et al., 2005; Lahm et al., 2007).
- · After a first spillover event, the virus continues to spread from human to human through both direct transmission (contact with blood, secretions, organs and other bodily

http://www.nejm.org/doi/full/10.1056/NEJMoa1404505

- fluids of infected people, in health care settings or during burial ceremonies) and indirect transmission (contact with fomites contaminated with such fluids).
- A systematic survey of custom seizure of bush meat in Charles de Gaulle airport (France) estimated that around five tonnes of meat from wild animals per week is smuggled in personal luggage (Chaber et al., 2010). Meat from wild animals was not only imported for personal consumption but was part of a lucrative organized trade, with high prices indicating luxury status. Half of the travellers were found to carry mainly fish (446 kg in the time of the study) and livestock and bush meat (131 and 188kg respectively). Bush meat was being carried by a smaller number of travellers in bigger containers, mainly from the Central African Republic, Cameroon, and Côte d'Ivoire and fewer from Ivory Coast. Fish and smaller quantities of livestock meat were carried in iceboxes, but bush meat and larger livestock, such as entire sheep and calves, were wrapped in plastic and placed in casual holds. Travellers reported slaughtering the livestock just before boarding and, consistent with this, most livestock meat was fresh. Bush meat arrived dressed and often smoked. About half of the travellers carrying foodstuff presented sanitary certificates apparently issued by the veterinary authorities from their country of origin. These papers listed the foodstuff carried, such as bush meat or miscellaneous, and certified that they were fit for human consumption, but were in fact not legally valid.
- An average of 25 million kilogrammes of non-live wildlife products is believed to enter the United States each year. A pilot project to establish a surveillance methodology for zoonotic agents in confiscated wildlife products in several American airports (Smith et al., 2012) identified parts originating from non-human primates, such as chimpanzees (Pan troglodytes). Specimens were found

NOTEC

- to vary in condition, including items that were fresh, transported raw in coolers, lightly smoked or well dried. Most specimens contained moist inner tissue. Pathogens such as retroviruses (simian foamy virus) and/or herpesviruses were isolated from these samples.
- EBOV is sensitive to heat and is inactivated by heating meat products 30 minutes at 60°C or boiling for 5 minutes. There is no data on the effect of the survival of the virus in smoked meat products. According to some authors, animal carcasses are only infective for 3 to 4 days after the animal dies (Leroy and Rollin, unpublished data). One study reports that the virus can still be detected in muscle tissue of gorillas 5 to 8 days post mortem and in chimpanzees 3 to 10 days post mortem (Rouquet et al., 2005).

CONSULTED EXPERTS

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NOTES		





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The Emergency Prevention System (EMPRES) is an FAO programme, founded in 1994, with the goal of enhancing world food security, fighting transboundary animal and plant pests and diseases and reducing the adverse impact of food safety threats. EMPRES-Animal Health is the component dealing with the prevention and control of transboundary animal diseases (TADs).

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EMPRES-Animal Health can assist countries in the shipment of samples for TAD diagnostic testing at a FAO reference laboratory and reference centre. Please contact Empres-Shipping-Service@fao.org for information prior to sampling or shipment. Please note that sending samples out of a country requires an export permit from the Chief Veterinarian's Office of the country and an import permit from the receiving country.

This summary of the preliminary risk assessment is based on the information available to date and will be reviewed as new findings emerge from field investigations, laboratory testing and epidemiological studies at both the animal and human levels.

Recommended citation

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Subject: Re: FAO EBOLA GUIDANCE

Thanks!

On Thu, Apr 13, 2017 at 12:18 PM, William B. Karesh < <u>karesh@ecohealthalliance.org</u>> wrote:

on behalf of "Jonna Mazet" <jkmazet@ucdavis.edu> 05/12/2017 9:19:20 AM (-07:00) Sent: "Anthony, Simon J." <sja2127@cumc.columbia.edu> To: "William B. Karesh" <karesh@ecohealthalliance.org>; "Brian Bird" <bhbird@ucdavis.edu>; Cc: "PREDICT-oubreak" < PREDICT-Outbreak@ucdavis.edu> Subject: Re: [predict-outbreak] Ebola outbreak in DRC Dennis would like 3-4 bullets on what Predict can contribute to the outbreak effort. Please send your suggestions to me today, On Fri, May 12, 2017 at 8:54 AM, Anthony, Simon J. <sja2127@cumc.columbia.edu> wrote: BBC now reporting on the new outbreak S. Sent from my iPhone On May 12, 2017, at 09:15, Jonna Mazet < jkmazet@ucdavis.edu> wrote: BTW -- testing is complete by INRB (not Predict), but results are not yet public, so that's not in the report yet. Expect to have it added today, J On Fri, May 12, 2017 at 6:13 AM, Jonna Mazet < <u>ikmazet@ucdavis.edu</u>> wrote: Sent a report from Prime to the outbreak address, On Fri, May 12, 2017 at 5:49 AM, William B. Karesh karesh@ecohealthalliance.org wrote: Do you know where? I may have missed earlier thread. Sent from my iPhone On May 12, 2017, at 8:01 AM, Brian Bird < bhbird@ucdavis.edu> wrote: Seems that INRB confirmed cases in the North of the Country. Details to follow as I see them. В Brian H. Bird, DVM, MSPH, PhD One Health Institute University of California, Davis School of Veterinary Medicine

REDACTED

bhbird@ucdavis.edu

From:

From: REDACTED on behalf of "Jonna Mazet" <jkmazet@ucdavis.edu>

Sent: 07/19/2017 7:54:03 PM (-07:00)

To: "Dominic Travis" <datravis@umn.edu>

Cc: "Amy Kircher" <akircher@umn.edu>; "William Karesh" <karesh@ecohealthalliance.org>;

"Tracey Goldstein" <tgoldstein@ucdavis.edu>; "Shaun Kennedy" <skennedy@foodsysteminstitute.com>; "Kristine

Smith, DVM, Dipl. ACZM" <ksmith@ecohealthalliance.org>

Subject: Re: DHS proposal update: wildlife trade risk assessmet

Sounds good -- thanks for the update, Jonna

On Wed, Jul 19, 2017 at 3:36 PM, Dominic Travis < <u>datravis@umn.edu</u>> wrote: Thanks, Im designing an intro to use for both now, is that bad?

On Wed, Jul 19, 2017 at 3:50 PM, Amy Kircher akircher@umn.edu wrote:

My only addition is that I need to make these look like two separate proposals in the portfolio for the proposed center even though they are connected. We will do that in the final submission so no need for this group to worry about that. Just want to make sure you are aware.

Amy Kircher, DrPH Director Food Protection and Defense Institute

For scheduling please contact fpdidir@umn.edu

On Wed, Jul 19, 2017 at 12:01 AM, Dominic Travis <<u>datravis@umn.edu</u>> wrote: All,

This email is to connect several conversations. You all know that UMN Food Protection and Defense Institute (Amy Kircher lead) is leading the submission of a proposal for the "DHS Center of Excellence -- Cross Border Threats and Supply Chain Defense" call. This will be a suite of 6 or so projects, each at ~200K/year for 2 years. Amy believes that we have the opportunity to build upon our domestic WL trade risk analysis platform previously funded through a similar mechanism and design phase II as a part of this grant, thus continuing toward a full import risk assessment model.

After several versions of how we may fit into the bigger plan, Amy asks that we develop two complementary proposals that fill the most important gaps in our previous assessment - diagnostic data collection and exposure assessment post port of entry. Tracey, Kristine and I met today to think about this and propose the following collaboration between UCD, EHA, FSI and UMN.

Project 1 - Tracey and UCD have offered to lead a focused pilot on diagnostic surveillance that builds upon the previous findings of Smith et al., and is informed by our recent work. We propose to focus on LIVE animals (followed by more fresh, drippy bushmeat) and screen for RNA viruses in ~ two ports TBD (as well as other details pending stakeholder feedback). Objective 1 would be a stakeholder engagement exercise to further define this scope more specifically. We believe this is different from (or builds upon) previous work for two reasons: first, the focus on LIVE animals and RNA viruses, and second, it would be guided by - and

contribute to - the overall risk-based framework which we started a few years ago and so is a step in developing an overall import risk assessment model.

Project 2 - two ideas so far. 1) develop a tracking system for those sampled animals in project one and follow them longitudinally to better characterize exposure. 2) continue work on our previous projects to estimate exposure via other data sets and approaches (there are several ideas buried in this objective that will need to be fleshed out depending upon the pathway we choose - we did exotic ruminants, fish and camels). This would be kind of a direct (1) and indirect (2) approach to estimating exposure risk.

The thought is that the whole team would be named on both, but the first would basically be diagnostic cost focused to maximize the money available, including Tracey and technical staff. The rest of us would be no cost personnel but named on the proposal. The second would basically include the pathway analysis starting with the ports of interest, sample collection and following through exposure mapping. Again, all players would be included, but the people costs for the rest of us would be in this proposal.

Amy believes that this project has a good chance of being scaled up quickly by DHS if successful, so Im listing the full team below realizing that we will need to address budget and people realities in the beginning. First thoughts:

UMN (aside from Kircher who is overall lead and involved in these projects)

Travis - coordinator Singer - lead, risk assessment modeling team Tiffany Wolf - analyst PD/VPH residents - worker bees

<u>UCD</u>

Goldstein - Lead - diagnostic grant Lab personnel Mazet advisory and modeling team

EHA

Kristine Smith - Lead port surveillance protocols Allison White - LEMIS database manager for Entry assessment Karesh - Advisory and EHA lead

FSI

Kennedy - lead, exposure pathway analysis

Basically, this is our previous team with added collaboration with UCD, which obviously makes us stronger in several ways. If we agree on the above concept, we have one week to get two concept notes to Amy so they can create the overall portfolio story at the Center with their team. We develop full proposals if/when asked to do so after first round review. Right now, Kristine, Tracey, Shaun and I are committed to developing draft concepts this week based upon above.

Tracey, Kristine and Amy, please correct any mis perceptions I have from today's discussions.

Please let us know any thoughts/reservations/reactions. Otherwise, we will move forward with this concept at the core.

Thanks Dom

PS - One more thought. Many of us would like to push our aquatic pathway forward but that is unlikely to be a priority for this group. However, our aquatic lead, Alex Primus and I are meeting with USDA Thursday to discuss their interest in our Tilapia results from the previous work, so we could potentially build a parallel aquatics project with USDA money if we are lucky.

--

Dominic Travis DVM, MS Associate Professor, College of Veterinary Medicine University of Minnesota

Phone: <u>612 626 5911</u> Skype: dominic.travis

www.facebook.com/biodiversitydoctors.

--

Dominic Travis DVM, MS Associate Professor, College of Veterinary Medicine University of Minnesota

Phone: <u>612 626 5911</u> Skype: dominic.travis

www.facebook.com/biodiversitydoctors.

From: Sent: To: Cc: "Jonna Mazet" < jkmaze Subject:	"Marguerite Pappaioanou" REDACTED 07/20/2017 10:17:21 AM (-07:00) karesh@ecohealthalliance.org "Constance A. Carrino" REDACTED "Daniel Lucey" REDACTED t@ucdavis.edu>; "Marguerite Pappaioanou" REDACTED Greetings, EPT2 evaluation and seeking a time to interview you.
Dear Billy,	
	but well! I am contacting you about a EPT2 mid-program evaluation that is underway, and to ask if you would be then we could interview you as a part of this evaluation. Please see more details below:
USAID's Emerging Threats 2 (EPT2) pr	Threats Division in the Global Health Bureau is conducting a mid-term evaluation of its Emerging Pandemic rogram.
completion, and ide	eviewing the overall progress of the EPT2 program, whether the objectives of the program are on track for entifying how the program has contributed to the knowledge base, implementation and sustainability of efforts to respond to emerging pandemic threats, through a "One Health" approach.
	so covering how EPT2 has engaged or coordinated with international organizations, donors, and technical ntributions of EPT2 in achieving the objectives of Global Health Security Agenda (GHSA.)
implementing partn PhD, formerly Dire	e evaluation, a three-person evaluation team is interviewing a wide range of USAID, other US Government, and er representatives, along with other key stakeholders. The evaluation team is being led by Constance A. Carrino, ctor of USAID's Office of HIV/AIDS and senior foreign service officer. The third person of our team is Dr, IP, MPH, with the Department of Medicine-Infectious Diseases at Georgetown University.
As a key person of the Pred conducted by phone in ear	ict2 team, I am contacting you to ask if we could schedule time on your calendar for a one hour interview, rly August.
	would have time on your calendar on August 3rd or 4th, between the hours of 9 am to 5 pm east coast time (I am a may know, so I will be calling in from Seattle). If those days do not work for you, how about any of the days the
We anticipate the interview estimate.	will take approximately 60 minutes, but depending on the flow of discussion, could vary slightly from that
I look forward to your reply	<i>'</i> .
Best,	
Marguerite	

Marguerite Pappaioanou, DVM, MPVM, PhD, DACVPM Affiliate Professor Department of Environmental and Occupational Health Sciences School of Public Health University of Washington

Phone: 202-368-0050

Email: REDACTED

From: predict-request@ucdavis.edu on behalf of "William B. Karesh" <karesh@ecohealthalliance.org>

Sent: 08/10/2017 10:39:20 AM (-07:00)

To: "John MacKenzie" REDACTED "JMHUGHE@emory.edu"

<jmhughe@emory.edu>; "Lonnie King" <king.1518@osu.edu>; "Ron Waldman" <ronwaldman@email.gwu.edu>;

"Subhash Morzaria"

REDACTED

Cc: "Amanda Andre" <amanda.andre@ecohealthalliance.org>; "Predict inbox"

cpredict@ucdavis.edu>

Subject: [predict] PREDICT Ext. Advisors meeting

Dear Colleagues,

Due to availability, we are going to postpone the External Advisors meeting previously scheduled for September 13th in New York City.

If it will be possible for your schedules, we would be pleased if you could join us at our PREDICT All-Country Partners meeting January 9-11th in Brussels, Belgium. This will be a great opportunity to meet folks from across the project and allow for more interactive time. Please save the date and we will keep you abreast of details as they are developed.

All the Best,

Billy

William B. Karesh, D.V.M

Executive Vice President for Health and Policy

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President, OIE Working Group on Wildlife

Co-chair, IUCN Species Survival Commission - Wildlife Health Specialist Group

EPT Partners Liaison, USAID Emerging Pandemic Threats - PREDICT-2 Program

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"William B. Karesh" < karesh@ecohealthalliance.org> From: 09/25/2017 8:22:38 AM (-07:00) Sent: "David De Pooter" <d.depooter@onehealthplatform.com> To: "Jonna Mazet" <jkmazet@ucdavis.edu>; "Martyn Jeggo" < REDACTED Cc: >; "Amadou Sall" 4 REDACTED REDACTED >; "Wang Linfa" ; "MARK RWEYEMAMU" < REDACTED ; "Ottorino Cosivi" <cosivio@paho.org>; "dobber@princeton.edu" <dobber@princeton.edu>; "Casey Barton Behravesh" <dlx9@cdc.gov>; "malik" REDACTED REDACTED →; "Gerdts, Volker" <</p> >; "Marietjie Venter" REDACTED REDACTED >; "Penina Munyua" <ikg2@cdc.gov>; "Lorne Babiuk" < ; "Sue Kutz" REDACTED REDACTED REDACTED ; "Patrick Leighton" < REDACTED REDACTED ; "Craig Stephen" < ; "Ab Osterhaus" REDACTED REDACTED >; "John MacKenzie" < REDACTED >; "Chris Vanlangendonck" <c.vanlangendonck@onehealthplatform.com> Subject: Re: 5th International One Health Congress: Scientific Programme Committee telephone

The 6th would work for me.

conference on October 6th

BK

William B. Karesh, D.V.M

Executive Vice President for Health and Policy

EcoHealth Alliance 460 West 34th Street - 17th Floor New York, NY 10001 USA

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On Sep 25, 2017, at 12:30 PM, David De Pooter <d.depooter@onehealthplatform.com> wrote:

Dear Scientific Programme Committee members,

Many thanks again for the valuable feedback you provided after our latest TC on 25 July. I have now assembled all your comments and would like to suggest that we set up a telephone conference on October 6th to review the input and to finalize the programme schedule. I'll provide a more detailed meeting agenda closer to the date, but may I ask to confirm your availabilities as soon as possible? The TC will start at 16:00 CET (10am EDT - 10pm AWST/SGT)

Kindest regards,

David De Pooter management ONE HEALTH PLATFORM

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<OHP_5OHC_bannerMelbourne_press.jpg>

REDACTED "Craig Stephen" -From: 10/16/2017 9:48:38 AM (-07:00) Sent: REDACTED "Gerdts, Volker" < To: "David De Pooter" <d.depooter@onehealthplatform.com>; "Jonna Mazet" Cc: <jkmazet@ucdavis.edu>; "Martyn Jeggo" < REDACTED ; "Amadou Sall" · REDACTED "MARK RWEYEMAMU" ; "Wang Linfa" REDACTED ; "William B. Karesh" <karesh@ecohealthalliance.org>; "Dr. Ottorino Cosivi" <cosivio@paho.org>; "Andrew P. Dobson" <dobber@princeton.edu>; "Casey Barton Behravesh" <dlx9@cdc.gov>; "malik" < REDACTED ; "Baljit Singh"</pre> REDACTED REDACTED ; "Marietjie Venter" "Penina Munyua" <ikg2@cdc.gov>; REDACTED ; "Patrick Leighton" "Lorne Babiuk" REDACTED ; "Susan Kutz" REDACTED REDACTED ŀ ; "Ab Osterhaus" REDACTED ; "John MacKenzie" REDACTED "Chris Vanlangendonck" <c.vanlangendonck@onehealthplatform.com>; "Misra, Vikram" < **REDACTED** Subject: Re: 5th International One Health Congress: Scientific Programme Committee telephone conference on October 6th

Hi All

Sorry for the delayed reply on this - I've been away from the office. While TB is indeed a significant issues in northern Canada, I wonder, especially in the Canadian context, how one might distinguish a One Health approach from a public health approach to TB that emphasizes the determinants of health. TB remains a very important problem and is well suited to our sections on AMR, but I worry a bit about "brand dilution" if we don't clearly define how One Health thinking might be different in this particular cases from how public health is trying to deal with this disease, especially when M bovis is not the major pathogen of concern.

On Fri, Oct 6, 2017 at 5:58 AM, Gerdts, Volker < REDACTED wrote: Hello Scientific Programme committee,

I am wondering what your thoughts are on organizing a session on "One health approaches towards control of tuberculosis". Northern Canada is seeing some of the world's highest TB rates, which in some communities are > 150/100,000. Interestingly, none of them are multidrug-resistant TB. It is a one health issue here (and around the world), with many complicating factors such as housing, nutrition, environment and underlying co-infections, as well as animal reservoirs etc. While some communities have found ways to reduce the rates to national average, other have not. I think it would be interesting to have a comparative session in which we could bring community leaders and experts from around the world to compare some of the one health approaches and challenges they are dealing with in their regions around the world. For example, how they are dealing with TB in refugees or MDR.

Speakers could include individuals involved in the national or regional control programs, for example we have some excellent Medical Health Officers here working with the Northern Inter-Tribal Authority (NITHA) and local health regions to control the issue, who I have heard giving excellent talks. Other speakers could include experts from South Africa, Asia, Russia, and Europe to compare the different approaches to attacking this very important issue. Since TB remains a huge problem in underserved communities, I think such a session would fit well with the overall theme of the conference and would create interest from health care and policy providers, scientists and community representatives.

I am looking forward to discussing this further in an hour at our TC. Thank you

Volker

Volker Gerdts Associate Director Research Vaccine and Infectious Disease Organization-InterVac

REDACTED

www.vido.org

From: David De Pooter <d.depooter@onehealthplatform.com> Date: Tuesday, October 3, 2017 at 7:23 AM To: Jonna Mazet < jkmazet@ucdavis.edu >, Martyn Jeggo < REDACTED , Amadou Sall REDACTED , Wang Linfa REDACTED REDACTED >, MARK RWEYEMAMU | REDAGTED -, "William B. Karesh" <<u>karesh@ecohealthalliance.org</u>>, "Dr. Ottorino Cosivi" <<u>cosivio@paho.org</u>>, 'Andrew P. Dobson" <<u>dobber@princeton.edu</u>>, Casey Barton Behravesh <<u>dlx9@cdc.gov</u>>, malik < REDACTED +, REDACTED , Gerdts Volker < REDACTED , Marietiie Venter REDACTED REDACTED >, Penina Munyua <ikg2@cdc.gov>, Lorne Babiuk <</p> . Susan Kutz REDACTED REDACTED >, Patrick Leighton REDACTED , Craig Stephen REDACTED REDACTED Cc: Ab Osterhaus REDACTED , John MacKenzie < Vanlangendonck <c.vanlangendonck@onehealthplatform.com> Subject: 5th International One Health Congress: Scientific Programme Committee telephone conference on October 6th

Dear Scientific Programme Committee members,

Many thanks for responding to last week's invitation to participate in a TC on Friday 6 October 2017. Kindly find the agenda and discussion documents for this teleconference attached to this e-mail. Since not all committee members will be available to participate, I will circulate the outcome of the call to all committee members for a final round of feedback.

The call will start on Friday 6 October at 16:00 CET (10am EDT - 10pm AWST/SGT). To join the call, select the appropriate number from the attached list and enter the participant's code: 47450406#

Kindest regards,

David De Pooter
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a....

Craig Stephen DVM PhD

Chief Executive Officer

Canadian Wildlife Health Cooperative

Professor, Western College of Veterinary Medicine

e. REDACTED

n. REDACTED

w. http://www.healthywildlife.ca - http://www.cwhc-rcsf.ca

The CWHC mission is to promote and protect the health of wildlife and Canadians through leadership, partnership, investigation and action.

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 t. https://twitter.com/CWHCRCSF

From: "Brian Bird" < bhbird@ucdavis.edu>
Sent: 11/20/2017 5:37:19 PM (-08:00)

To: "James Ayukekbong" <jayukekbong@metabiota.com>; "Jonna Mazet" <jkmazet@ucdavis.edu>
Cc: "William B. Karesh" <karesh@ecohealthalliance.org>; "predict-outbreak@ucdavis.edu" predict-outbreak@ucdavis.edu

outbreak@ucdavis.edu>; "Prime Mulembakani" <pmulembakani@metabiota.com>; "Karen Saylors"

<ksaylors@metabiota.com>; "Eddy Rubin" <erubin@metabiota.com>; "Tracey Goldstein" <tgoldstein@ucdavis.edu>;

"David John Wolking" <djwolking@ucdavis.edu>; "Anne Laudisoit" <laudisoit@ecohealthalliance.org>

Subject: Re: Outbreak - DRC - Cattle

Attachments: PREDICT-DRC Cattle die-off Bondo Bas-Uele 20Nov2017 bb.docx

Thank you, James, for the completed health event form. Please take a look at this edited version and use this for further updates. I marked the tracked changes, and added in some documentation from the official Bas-Uele report for completeness. You'll also see some of my questions as comments.

A few important questions for follow-up:

- 1. The translated government report from 05 November suggests the size of this event to be 2000 animals (two-thousand). But your report from 15 October suggests only 120 (one hundred twenty)? Can you help clarify that difference? Perhaps there are multiple reports from Bas-Uele? I'm just trying to keep the numbers consistent and updated as much as possible.
- 2. Which cPCR tests are you considering running <u>if testing is approved</u>? This could have budgetary impacts, as we are very close to the limits in DRC and is worthy of consideration.
 - a. I would also recommend that in your discussions tomorrow with the other laboratory partners that a screening for bacterial pathogens on the lung biopsy material be considered. The gross appearance of the lesions in the photos of the government report are possibly suggestive of a bacterial etiology.
- 3. Have there been any reports of sick persons appearing after contact with these cattle?

Many thanks, and we'll look forward to hearing any updates from Kisangani and the region as they come in.

-Brian

From: James Ayukekbong <jayukekbong@metabiota.com>

Date: Monday, November 20, 2017 at 3:47 PM

To: Jonna Mazet < jkmazet@ucdavis.edu>

Cc: "William B. Karesh, D.V.M" <karesh@ecohealthalliance.org>, PREDICT-outbreak cotoreak@ucdavis.edu>, Prime Mulembakani <pmulembakani@metabiota.com>, Brian Bird
<bhbird@ucdavis.edu>, Karen Saylors <ksaylors@metabiota.com>, Eddy Rubin <erubin@metabiota.com>,
Tracey Goldstein <tgoldstein@ucdavis.edu>, David J Wolking <djwolking@ucdavis.edu>, Anne Laudisoit
<laudisoit@ecohealthalliance.org>

Subject: Re: Outbreak - DRC - Cattle

Dear Jonna,

We can test these 11 samples within our regular surveillance plan and budget and we would still be able to perform testing of PREDICT samples that has been planned for this year.

Cow is widely consumed in the country, as the cause of the die-off is unknown, there is fear of a potential zoonosis. Support towards establishing the cause will inform public health surveillance approach by the government. I recommend PREDICT involvement in testing these samples.

Kind regards,

J.A Ayukekbong, PhD

Regional Coordinator / Central Africa

USAID PREDICT | Metabiota

Email: jayukekbong@metabiota.com

Mobile: REDACTED

Website: www.metabiota.com
Skype: ayukekbong.ayukepi

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From: REDACTED

on behalf of Jonna Mazet <jkmazet@ucdavis.edu>

Sent: Monday, November 20, 2017 2:14:45 PM

To: James Ayukekbong

Cc: William B. Karesh; predict-outbreak@ucdavis.edu; Prime Mulembakani; Brian Bird; Karen Saylors; Eddy Rubin; Tracey

Goldstein; David John Wolking; Anne Laudisoit

Subject: Re: Outbreak - DRC - Cattle

Hi James,

Can you test the samples within the regular surveillance plan and budgets, or would you need to supplement? As you know, we have a tight country cap on what we can spend in DRC, so if we test these cattle will it be at the expense of not being able to do other work that has been planned for this year? If so, do you still recommend going ahead as requested by INRB?

Thanks for the outbreak form, too,

Jonna

On Mon, Nov 20, 2017 at 1:54 PM, James Ayukekbong <jayukekbong@metabiota.com> wrote:

Dear all.

Find attached the PREDICT outbreak report of cattle die-off in the Bondo territory of the Bas Uélé province in DRC.

We have receive a request from the INRB to test the 11 samples shipped to the INRB and our team is ready to commence testing upon approval.

I will update as we learn more about the outbreak. In the meantime, am happy to answer any other concerns.

Kind regards,

J.A Ayukekbong, PhD

Regional Coordinator / Central Africa

USAID PREDICT | Metabiota

Email: jayukekbong@metabiota.com

Mobile: REDACTED

Website: <u>www.metabiota.com</u> Skype: ayukekbong.ayukepi

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From: William B. Karesh < karesh@ecohealthalliance.org >

Sent: Monday, November 20, 2017 11:25:05 AM

To: James Ayukekbong

Cc: Jonna Mazet; predict-outbreak@ucdavis.edu; Prime Mulembakani; Brian Bird; Karen Saylors; Eddy Rubin; Tracey

Goldstein; David John Wolking; Anne Laudisoit

Subject: Re: Outbreak - DRC - Cattle

Wonderful. Thanks for the up date James.

ВК

William B. Karesh, D.V.M

Executive Vice President for Health and Policy

EcoHealth Alliance 460 West 34th Street - 17th Floor New York, NY 10001 USA

<u>+1.212.380.4463</u> (direct) <u>+1.212.380.4465</u> (fax) www.ecohealthalliance.org

President, OIE Working Group on Wildlife

Co-chair, IUCN Species Survival Commission - Wildlife Health Specialist Group

EPT Partners Liaison, USAID Emerging Pandemic Threats - PREDICT-2 Program

EcoHealth Alliance leads cutting-edge research into the critical connections between human and wildlife health and delicate ecosystems. With this science we develop solutions that promote conservation and prevent pandemics.

On Nov 20, 2017, at 2:08 PM, James Ayukekbong < jayukekbong@metabiota.com > wrote:

Thanks Billy,

Our team has been advised of this cattle die-off in North-Eastern DRC and I am preparing a PREDICT outbreak report to be shared by the end of the day.

Best regards,

J. Ayukekbong, PhD

Regional Coordinator / Central Africa

USAID PREDICT | Metabiota

Email: jayukekbong@metabiota.com
Mobile: REDACTED

Mobile: REDACTED
Website: www.metabiota.com
Skype: ayukekbong.ayukepi

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From: Prom: > on behalf of Johna Mazet

<jkmazet@ucdavis.edu>

Sent: Monday, November 20, 2017 10:21:15 AM

To: William B. Karesh

Cc: James Ayukekbong; predict-outbreak@ucdavis.edu; Prime Mulembakani; Brian Bird; Karen Saylors;

Eddy Rubin; Tracey Goldstein; David John Wolking; Anne Laudisoit

Subject: Re: Outbreak - DRC - Cattle

Thanks very much,

Jonna

On Mon, Nov 20, 2017 at 10:11 AM, William B. Karesh karesh@ecohealthalliance.org wrote:

Hi folks,

Anne Laudisoit sent us a report on a cattle die-off in northern DRC, around Buta. Samples apparently being sent to INRB.

Anne is copied here (she teaches at the Uni. of Kisangani) and is coming on board with EHA to be our country liaison for ROC and CdI.

See report attached.

Billy



PREDICT Outbreak or Health Event Rapid Report

Today's Date: 20 November 2017

Working Title of Investigation: Cattle die-offs in Bondo, Bas-Uele Province, DR Congo

Cumulative day of the outbreak investigation: 36

Please describe the disease signs and symptoms and species affected (humans, domesticated animals, wildlife:

On 15 October 2017, an alert of cattle die-off was sent from the provincial Ministry of Agriculture, Fish and Livestock of Bas-Uele to the National Minister of Fishery and Livestock. According to this alert, about 120 cattle imported from Chad by the Mbororo tribe through the Central African Republic died in the Baya village, Bondo territory, Bas-Uele province with symptoms including diarrhea, weight-loss, joint inflammation and chancroid.

From a translated version of an official government report dated 05 November 2017: "The onset of the disease begins with weight loss accompanied by abundant diarrhea. Then, the disease evolves with swelling of the knees (water retention?). Finally, galls (scabies like) appear on the tail followed by loss of hair. In some severe cases, on the naked tail syphilitic or tubercular-like lesions resembling eschar were observed."

On 17 November 2017, a second alert of further cattle die-offs was reported from Bas-Uele province.

Location	
Country:	Democratic Republic of Congo
District:	Bondo Territory
Village/Town:	Baya village
GPS Coordinates (if known):	
Date that first case(s) of illness	Unknown
occurred (if known or estimate):	
Date that PREDICT was first	17 November 2017
notified of outbreak:	

Key Information	Description	on of Findings	Actions/Outco	mes
How many affected individuals?		Suspected:	Confirmed:	Deaths:
	Humans			
	Domestic			120? cattle
	Animals			
	Wild Animals			
How was outbreak first noticed?	The Bas-Uele provi	incial minister (of agriculture, H	Fishery and
	Livestock notified to	he DRC Govern	nment of cattle d	die-offs in the
	Bondo territory wh	ich borders the	Central African	n Republic.













Working name of the outbreak:	ceased
Summary of the Outbreak or Event:	To be filled after active outbreak or event activity has
government response and lab confirmation of laboratory results.	ANAX
Number of days between initiation of	NA
Where was the laboratory testing performed (name of laboratory)?	Specimens were received at the Virology laboratory of INRB, but have not been tested yet.
Was the cause of the outbreak confirmed by a laboratory? If so, give details of the initial confirmation (cause, species, specimen types tested and dates of testing if known).	No
When was a response initiated and by whom? Which agencies were involved? Who was in charge of the national response?	An investigation team from the Provincial Ministry of Agriculture was sent to the field on 13-20 October 2017, with support from the Bas-Uele provincial Health Office.
When was the first official acknowledgement of the outbreak (by which government agency or other reputable body and date)?	The first official acknowledgement was on 15 October, 2017 by the Bas-Uele Provincial Ministry of Agriculture, Fishery and Livestock.
What type of assistance did PREDICT initially provide? Which PREDICT personnel were involved?	PREDICT CC contacted the head of the Central Veterinary Laboratory of Kinshasa (LABOVET) and the FAO-ECTAD team to coordinate with the INRB a plan for testing the samples that were received at INRB. A meeting will be held at the PREDICT office on 21 November 2017 at 3.00 PM with the LABOVET, FAO-ECTAD, INRB and the Director of Animal Health and Production.
Are other EPT partners involved in the response (which ones and how)?	Yes, the FAO-ECTAD project.
If so, which government agency requested PREDICT support? When was PREDICT response initiated (date)?	The Ministry of Health through the INRB, which is the national referential public health laboratory. 20 November 2017
Has the country requested support from PREDICT (include date of request)?	Yes, on 17 November 2017, the head of the Virology laboratory at INRB requested the support of PREDICT to test with PREDICT protocols the 11 blood samples received from the field.
Where was the first reported case? What is/was the extent of geographic spread? Include comments on the apparent speed of spread.	The first cases were reported from the village of Baya; We have no current information regarding the extent of geographic spread from the initial village, if any.













Total number of cases:		Suspected:	Confirmed:	Deaths:
	Humans			
	Domestic			
	Animals			
	Wild Animals			
Summary of PREDICT Team response	_			
activities during the outbreak.				

PREDICT Outbreak or Health Event Response Daily Activities/Timeline

Working Title of Investigation: Cattle die-off in Bondo, Bas-Uele Province, DR Congo

Key Events:

Sey Events:		
Date	Day #	Notification or Action Taken
15 Oct 2017	-32	Alert of a cattle die-off was sent from the provincial Ministry of
		Agriculture, Fish and Livestock of Bas-Uele to the National Minister of
		Fishery and Livestock in Kinshasa DRC.
11/17/2017	1	PREDICT CC was informed by the head of the Virology laboratory at
		INRB that 10 blood specimens from sick cattle, and one lung tissue
		biopsy from a sick slaughtered animal from Bas-Uele were received at
		INRB approximately 2 weeks ago (Specimens were sent from Bas Ulele
		on 06 November 2017 according to the Official Ministry Report).
11/20/2017	4	PREDICT CC contacted the head of the Central Veterinary Laboratory of Kinshasa, the National coordinator of the FAO-ECTAD team and the staff at INRB in charge for testing the samples to coordinate actions on testing the samples. It was decided that serology and PCR should be performed. A meeting will be held on 11/21/2017 to decide on sharing of samples between the three laboratories (LABOVET, FAO-ECTAD, INRB).
		PREDICT CC contacted the Director of the "Centre de Surveillance de la Biodiversite" – CSB at the University of Kisangani to request for more information on the epidemiologic findings and data on the number of animals involved in the die-off. No information is available yet in Kisangani from the field.

























In-Country Government Outbreak or Health Event Points of Contact

Public Health ministry or department:		
Name:	Benoit Kebela Ilunga	
Email:	REDACTED	
Mobile Phone:	NEDACTED	

Livestock ministry or department:		
Name:	Leopold Mulumba	
Email:	REDACTED	
Mobile Phone:	NEDACTED	

Wildlife/Environment ministry or department:		
Name:	Jeff Mapilanga	
Email:	REDACTED	
Mobile Phone:		

OIE focal point:	
Name:	Honore N'Lemba Mabela
Email:	REDACTED
Mobile Phone:	NLDAGILD

IHR focal point:		
Name:	Theophile Bokenge	
Email:	REDACTED	
Mobile Phone:		

FAO:	
Name:	Philippe Kone
Email:	REDACTED
Mobile Phone:	NEDACTED

WHO:	
Name:	Ernest Dabire
Email:	REDACTED
Mobile Phone:	

EPT ONE HEALTH WORKFORCE Project:		
Name:	Diafuka Saila Ngita	
Email:	<u>Diafuka.saila</u> ngita@tufts.edu	
Mobile Phone:	REDACTED	













EPT PREPAREDNESS and RESPONSE Project:		
Name:		
Email:		
Mobile Phone:		
Other Important C	contacts:	
Organization:		
Name:		
Email:		
Mobile Phone:		
Organization:		
Name:		
Email:		
Mobile Phone:		
Organization:		
Name:		
Email:		
Mobile Phone:		
Organization:		
Name:		
Email:		
Mobile Phone:		
Organization:		
Name:		
Email:		
Mobile Phone:		











From: "William B. Karesh" <karesh@ecohealthalliance.org>

Sent: 11/21/2017 5:50:03 AM (-08:00) **To:** "Brian Bird" <bhbird@ucdavis.edu>

Cc: "James Ayukekbong" <jayukekbong@metabiota.com>; "Jonna Mazet" <jkmazet@ucdavis.edu>;

<djwolking@ucdavis.edu>; "Anne Laudisoit" <laudisoit@ecohealthalliance.org>

Subject: Re: Outbreak - DRC - Cattle

I would just add that the whole picture looks and sounds like CBPP as a prime suspect, so if someone can test for mycoplasma (stained slides, serology or PCR) that could be ruled in or out rather quickly and help with management and risk communications.

BK

Sent from my iPhone

William B. Karesh, D.V.M

Executive Vice President for Health and Policy

EcoHealth Alliance
460 West 34th Street - 17th Floor
New York, NY 10001 USA

+1.212.380.4463 (direct) +1.212.380.4465 (fax) www.ecohealthalliance.org

President, OIE Working Group on Wildlife

Co-chair, IUCN Species Survival Commission - Wildlife Health Specialist Group

EPT Partners Liaison, USAID Emerging Pandemic Threats - PREDICT-2 Program

EcoHealth Alliance leads cutting-edge research into the critical connections between human and wildlife health and delicate ecosystems. With this science we develop solutions that promote conservation and prevent pandemics.

On Nov 20, 2017, at 8:37 PM, Brian Bird < bhbird@ucdavis.edu> wrote:

Thank you, James, for the completed health event form. Please take a look at this edited version and use this for further updates. I marked the tracked changes, and added in some documentation from the official Bas-Uele report for completeness. You'll also see some of my questions as comments.

A few important questions for follow-up:

1. The translated government report from 05 November suggests the size of this event to be 2000 animals (two-thousand). But your report from 15 October suggests only 120 (one hundred

- twenty)? Can you help clarify that difference? Perhaps there are multiple reports from Bas-Uele? I'm just trying to keep the numbers consistent and updated as much as possible.
- 2. Which cPCR tests are you considering running <u>if testing is approved</u>? This could have budgetary impacts, as we are very close to the limits in DRC and is worthy of consideration.
 - a. I would also recommend that in your discussions tomorrow with the other laboratory partners that a screening for bacterial pathogens on the lung biopsy material be considered. The gross appearance of the lesions in the photos of the government report are possibly suggestive of a bacterial etiology.
- 3. Have there been any reports of sick persons appearing after contact with these cattle?

Many thanks, and we'll look forward to hearing any updates from Kisangani and the region as they come in.

-Brian

From: James Ayukekbong < jayukekbong@metabiota.com >

Date: Monday, November 20, 2017 at 3:47 PM

To: Jonna Mazet < jkmazet@ucdavis.edu >

Cc: "William B. Karesh, D.V.M" < karesh@ecohealthalliance.org, PREDICT-outbreak < predict-outbreak@ucdavis.edu, Prime Mulembakani < pmulembakani@metabiota.com, Brian Bird

<<u>bhbird@ucdavis.edu</u>>, Karen Saylors <<u>ksaylors@metabiota.com</u>>, Eddy Rubin

<<u>erubin@metabiota.com</u>>, Tracey Goldstein <<u>tgoldstein@ucdavis.edu</u>>, David J Wolking

<<u>djwolking@ucdavis.edu</u>>, Anne Laudisoit <<u>laudisoit@ecohealthalliance.org</u>>

Subject: Re: Outbreak - DRC - Cattle

Dear Jonna,

We can test these 11 samples within our regular surveillance plan and budget and we would still be able to perform

testing of PREDICT samples that has been planned for this year.

Cow is widely consumed in the country, as the cause of the die-off is unknown, there is fear of a potential zoonosis.

Support towards establishing the cause will inform public health surveillance approach by the government. I recommend PREDICT involvement in testing these samples.

Kind regards,

J.A Ayukekbong, PhD

Regional Coordinator / Central Africa

USAID PREDICT | Metabiota

Email: jayukekbong@metabiota.com

Mobile: REDACTED
Website: www.metabiota.com
Skype: ayukekbong.ayukepi

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From: > on behalf of Jonna Mazet

<jkmazet@ucdavis.edu>

Sent: Monday, November 20, 2017 2:14:45 PM

To: James Ayukekbong

Cc: William B. Karesh; predict-outbreak@ucdavis.edu; Prime Mulembakani; Brian Bird; Karen Saylors; Eddy

Rubin; Tracey Goldstein; David John Wolking; Anne Laudisoit

Subject: Re: Outbreak - DRC - Cattle

Hi James,

Can you test the samples within the regular surveillance plan and budgets, or would you need to supplement? As you know, we have a tight country cap on what we can spend in DRC, so if we test these cattle will it be at the expense of not being able to do other work that has been planned for this year? If so, do you still recommend going ahead as requested by INRB?

Thanks for the outbreak form, too,

Jonna

On Mon, Nov 20, 2017 at 1:54 PM, James Ayukekbong < jayukekbong@metabiota.com> wrote:

Dear all,

Find attached the PREDICT outbreak report of cattle die-off in the Bondo territory of the Bas Uélé province in DRC.

We have receive a request from the INRB to test the 11 samples shipped to the INRB and our team is ready to commence testing upon approval.

I will update as we learn more about the outbreak. In the meantime, am happy to answer any other concerns.

Kind regards,

J.A Ayukekbong, PhD

Regional Coordinator / Central Africa

USAID PREDICT | Metabiota

Email: jayukekbong@metabiota.com

Mobile: REDACTED
Website: www.metabiota.com
Skype: ayukekbong.ayukepi

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From: William B. Karesh < karesh@ecohealthalliance.org >

Sent: Monday, November 20, 2017 11:25:05 AM

To: James Ayukekbong

Cc: Jonna Mazet; predict-outbreak@ucdavis.edu; Prime Mulembakani; Brian Bird; Karen Saylors; Eddy

Rubin; Tracey Goldstein; David John Wolking; Anne Laudisoit

Subject: Re: Outbreak - DRC - Cattle

Wonderful. Thanks for the up date James.

William B. Karesh, D.V.M

Executive Vice President for Health and Policy

EcoHealth Alliance 460 West 34th Street - 17th Floor New York, NY 10001 USA

<u>+1.212.380.4463</u> (direct) <u>+1.212.380.4465</u> (fax) www.ecohealthalliance.org

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EPT Partners Liaison, USAID Emerging Pandemic Threats - PREDICT-2 Program

EcoHealth Alliance leads cutting-edge research into the critical connections between human and wildlife health and delicate ecosystems. With this science we develop solutions that promote conservation and prevent pandemics.

On Nov 20, 2017, at 2:08 PM, James Ayukekbong < jayukekbong@metabiota.com > wrote:

Thanks Billy,

Our team has been advised of this cattle die-off in North-Eastern DRC and I am preparing a PREDICT outbreak report to be shared by the end of the day.

Best regards,

J. Ayukekbong, PhD

Regional Coordinator / Central Africa

USAID PREDICT | Metabiota

Email: jayukekbong@metabiota.com

Mobile: REDACTED
Website: www.metabiota.com
Skype: ayukekbong.ayukepi

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From: > on behalf of Jonna Mazet

<jkmazet@ucdavis.edu>

Sent: Monday, November 20, 2017 10:21:15 AM

To: William B. Karesh

Cc: James Ayukekbong; predict-outbreak@ucdavis.edu; Prime Mulembakani; Brian Bird;

Karen Saylors; Eddy Rubin; Tracey Goldstein; David John Wolking; Anne Laudisoit

Subject: Re: Outbreak - DRC - Cattle

Thanks very much, Jonna

On Mon, Nov 20, 2017 at 10:11 AM, William B. Karesh karesh@ecohealthalliance.org wrote:

Hi folks,

Anne Laudisoit sent us a report on a cattle die-off in northern DRC, around Buta. Samples apparently being sent to INRB.

Anne is copied here (she teaches at the Uni. of Kisangani) and is coming on board with EHA to be our country liaison for ROC and Cdl.

See report attached.

Billy

<PREDICT-DRC Cattle die-off_Bondo Bas-Uele 20Nov2017_bb.docx>

From: "Brian Bird" < bhbird@ucdavis.edu>
Sent: 11/21/2017 6:57:23 PM (-08:00)

To: "James Ayukekbong" <jayukekbong@metabiota.com>; "Jonna Mazet" <jkmazet@ucdavis.edu>
Cc: "William B. Karesh" <karesh@ecohealthalliance.org>; "predict-outbreak@ucdavis.edu" predict-outbreak@ucdavis.edu

outbreak@ucdavis.edu>; "Prime Mulembakani" <pmulembakani@metabiota.com>; "Karen Saylors"

<ksaylors@metabiota.com>; "Eddy Rubin" <erubin@metabiota.com>; "Tracey Goldstein" <tgoldstein@ucdavis.edu>;

"David John Wolking" <djwolking@ucdavis.edu>; "Anne Laudisoit" <laudisoit@ecohealthalliance.org>

Subject: Re: Outbreak - DRC - Cattle

Attachments: PREDICT-DRC Cattle die-off_Bondo Bas-Uele 21Nov2017_bb.doc

Thank you, James, for this update. It is nice to hear that the meeting today with the other partners at the PREDICT office went well. I hope that FAO will provide regents for CBPP and other rule-out etiology testing. Thank you very much for your thorough answers to my questions yesterday.

I've attached a slightly edited version for your use tomorrow, and we're all looking forward to hearing your preliminary results from the PREDICT protocol testing.

Yours,

-Brian

From: James Ayukekbong < jayukekbong@metabiota.com>

Date: Tuesday, November 21, 2017 at 1:18 PM **To:** Jonna Mazet < jkmazet@ucdavis.edu>

Cc: "William B. Karesh, D.V.M" <karesh@ecohealthalliance.org>, PREDICT-outbreak coutbreak@ucdavis.edu>, Prime Mulembakani <pmulembakani@metabiota.com>, Brian Bird
<bhbird@ucdavis.edu>, Karen Saylors <ksaylors@metabiota.com>, Eddy Rubin <erubin@metabiota.com>,
Tracey Goldstein <tgoldstein@ucdavis.edu>, David J Wolking <djwolking@ucdavis.edu>, Anne Laudisoit
<laudisoit@ecohealthalliance.org>

Subject: Re: Outbreak - DRC - Cattle

Dear all,

Find attached the updated outbreak report as of today Tuesday 21/11/2017.

Thank you Brian for the edits and revision of the initial submission, I have used tract change to accept your edits and provided revision were necessary.

Please, permit me to append below answers to the specific comments/questions raised.

"Thank you, James, for the completed health event form. Please take a look at this edited version and use this for further updates. I marked the tracked changes, and added in some documentation from the official Bas-Uele report for completeness. You'll also see some of my questions as comments.

A few important questions for follow-up:

1. The translated government report from 05 November suggests the size of this event to be 2000 animals (two-thousand). But your report from 15 October suggests only 120 (one hundred twenty)? Can you help clarify that difference? Perhaps there are multiple reports from Bas-Uele? I'm just trying to keep the numbers consistent and updated as much as possible.

We can confirm that the size of the event is reported as >2000 cattle and have revised the number in the form.

2. Which cPCR tests are you considering running if testing is approved? This could have budgetary impacts, as we are very close to the limits in DRC and is worthy of consideration.

We are considering testing for Filo, Flavi, Paramyxo, Influenza and Coronaviruses.

3. I would also recommend that in your discussions tomorrow with the other laboratory partners that a screening for bacterial pathogens on the lung biopsy material be considered. The gross appearance of the lesions in the photos of the government report are possibly suggestive of a bacterial etiology.

Screening of Mycoplasma and bacteria pathogens is being considered, although LABOVET has presented resource challenges such as lack of reagents.

Have there been any reports of sick persons appearing after contact with these cattle? No human transmission reported yet."

Kind regards,

J.A Ayukekbong, PhD

Regional Coordinator / Central Africa

USAID PREDICT | Metabiota

Email: jayukekbong@metabiota.com

Mobile: + REDACTED
Website: www.metabiota.com
Skype: ayukekbong.ayukepi

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From: REDACTED | l.com> on behalf of Jonna Mazet <jkmazet@ucdavis.edu>

Sent: Tuesday, November 21, 2017 11:35:26 AM

To: James Ayukekbong

Cc: William B. Karesh; predict-outbreak@ucdavis.edu; Prime Mulembakani; Brian Bird; Karen Saylors; Eddy Rubin; Tracey

Goldstein; David John Wolking; Anne Laudisoit

Subject: Re: Outbreak - DRC - Cattle

Dear James,

Testing of these 11 samples is approved. Please let us know, as you always do, if you are asked to provide additional support or will need to expend additional funds for this response. Brian will continue to work with you on a daily basis for this outbreak.

Thanks,

Jonna

On Mon, Nov 20, 2017 at 3:47 PM, James Ayukekbong <jayukekbong@metabiota.com> wrote:

Dear Jonna,

We can test these 11 samples within our regular surveillance plan and budget and we would still be able to perform testing of PREDICT samples that has been planned for this year.

Cow is widely consumed in the country, as the cause of the die-off is unknown, there is fear of a potential zoonosis. Support towards establishing the cause will inform public health surveillance approach by the government. I recommend PREDICT involvement in testing these samples.

Kind regards,

J.A Ayukekbong, PhD

Regional Coordinator / Central Africa

USAID PREDICT | Metabiota

Email: jayukekbong@metabiota.com

Mobile: REDACTED

Website: www.metabiota.com
Skype: ayukekbong.ayukepi

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From: REDACTED on behalf of Jonna Mazet <i kmazet@ucdavis.edu>

Sent: Monday, November 20, 2017 2:14:45 PM

To: James Ayukekbong

Cc: William B. Karesh; predict-outbreak@ucdavis.edu; Prime Mulembakani; Brian Bird; Karen Saylors; Eddy Rubin;

Tracey Goldstein; David John Wolking; Anne Laudisoit

Subject: Re: Outbreak - DRC - Cattle

Hi James,

Can you test the samples within the regular surveillance plan and budgets, or would you need to supplement? As you know, we have a tight country cap on what we can spend in DRC, so if we test these cattle will it be at the expense of not being able to do other work that has been planned for this year? If so, do you still recommend going ahead as requested by INRB?

Thanks for the outbreak form, too,

Jonna

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Dear all,

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We have receive a request from the INRB to test the 11 samples shipped to the INRB and our team is ready to commence testing upon approval.

I will update as we learn more about the outbreak. In the meantime, am happy to answer any other concerns.

Kind regards,

J.A Ayukekbong, PhD

Regional Coordinator /Central Africa

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Email: jayukekbong@metabiota.com

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From: William B. Karesh < karesh@ecohealthalliance.org >

Sent: Monday, November 20, 2017 11:25:05 AM

To: James Ayukekbong

Cc: Jonna Mazet; predict-outbreak@ucdavis.edu; Prime Mulembakani; Brian Bird; Karen Saylors; Eddy Rubin;

Tracey Goldstein; David John Wolking; Anne Laudisoit

Subject: Re: Outbreak - DRC - Cattle

Wonderful. Thanks for the up date James.

BK

William B. Karesh, D.V.M

Executive Vice President for Health and Policy

EcoHealth Alliance 460 West 34th Street - 17th Floor New York, NY 10001 USA

+1.212.380.4463 (direct) +1.212.380.4465 (fax) www.ecohealthalliance.org

President, OIE Working Group on Wildlife

Co-chair, IUCN Species Survival Commission - Wildlife Health Specialist Group

EPT Partners Liaison, USAID Emerging Pandemic Threats - PREDICT-2 Program

EcoHealth Alliance leads cutting-edge research into the critical connections between human and wildlife health and delicate ecosystems. With this science we develop solutions that promote conservation and prevent pandemics.

On Nov 20, 2017, at 2:08 PM, James Ayukekbong < jayukekbong@metabiota.com > wrote:

Thanks Billy,

Our team has been advised of this cattle die-off in North-Eastern DRC and I am preparing a PREDICT outbreak report to be shared by the end of the day.

Best regards,

J. Ayukekbong, PhD

Regional Coordinator / Central Africa

USAID PREDICT | Metabiota

Email: jayukekbong@metabiota.com

Mobile: REDACTED
Website: www.metabiota.com
Skype: ayukekbong.ayukepi

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From: PREDACTED on behalf of Johna Mazet

<jkmazet@ucdavis.edu>

Sent: Monday, November 20, 2017 10:21:15 AM

To: William B. Karesh

Cc: James Ayukekbong; predict-outbreak@ucdavis.edu; Prime Mulembakani; Brian Bird; Karen

Saylors; Eddy Rubin; Tracey Goldstein; David John Wolking; Anne Laudisoit

Subject: Re: Outbreak - DRC - Cattle

Thanks very much, Jonna

On Mon, Nov 20, 2017 at 10:11 AM, William B. Karesh < karesh@ecohealthalliance.org > wrote:

Hi folks,

Anne Laudisoit sent us a report on a cattle die-off in northern DRC, around Buta. Samples apparently being sent to INRB.

Anne is copied here (she teaches at the Uni. of Kisangani) and is coming on board with EHA to be our country liaison for ROC and Cdl.

See report attached.

Billy



PREDICT Outbreak or Health Event Rapid Report

Today's Date: 21 November 2017

Working Title of Investigation: Cattle die-offs in Bondo, Bas-Uele Province, DR Congo

Cumulative day of the outbreak investigation: 37

Please describe the disease signs and symptoms and species affected (humans, domesticated animals, wildlife:

On 15 October 2017, an alert of cattle die-off was sent from the provincial Ministry of Agriculture, Fish and Livestock of Bas-Uele to the National Minister of Fishery and Livestock. According to this alert, about 2,000 cattle imported from Chad by the Mbororo tribe through the Central African Republic died in the Baya village, Bondo territory, Bas-Uele province with symptoms including diarrhea, weight-loss, swelling knees and chancroid.

From a translated version of an official government report dated 05 November 2017: "The onset of the disease begins with weight loss accompanied by abundant diarrhea. Then, the disease evolves with swelling of the knees (water retention). Finally, galls (scabies like) appear on the tail followed by loss of hair. In some severe cases, on the naked tail syphilitic or tubercular-like lesions resembling eschar were observed."

On 17 November 2017, a second alert of further cattle die-offs was reported from Bas-Uele province.

To date, there are no reports of human illnesses associated with this livestock health event.

Location	
Country:	Democratic Republic of Congo
District:	Bondo Territory
Village/Town:	Baya village
GPS Coordinates (if known):	
Date that first case(s) of illness	Unknown
occurred (if known or estimate):	
Date that PREDICT was first	17 November 2017
notified of outbreak:	

Key Information	Description of Findings/Actions/Outcomes			
How many affected individuals?		Suspected:	Confirmed:	Deaths:
	Humans			
	Domestic			>2,000 cattle
	Animals			
	Wild Animals			
How was outbreak first noticed?	The Bas-Uele provincial minister of agriculture, Fishery and			
	Livestock notified t	he DRC Govern	nment of cattle d	lie-offs in the













	Bondo territory which borders the Central African Republic.
Where was the first reported case? What	The first cases were reported from the village of Baya;
is/was the extent of geographic spread?	We have no current information regarding the extent of
Include comments on the apparent speed	geographic spread from the initial village, if any.
of spread.	
Has the country requested support from	Yes, on 17 November 2017, the head of the Virology
PREDICT (include date of request)?	laboratory at INRB requested the support of PREDICT to test
•	with PREDICT protocols the 11 blood samples received from
	the field.
If so, which government agency requested	The Ministry of Health through the INRB, which is the
PREDICT support?	national referential public health laboratory.
When was PREDICT response initiated	20 November 2017
(date)?	
Are other EPT partners involved in the	Yes, the FAO-ECTAD project.
response (which ones and how)?	
What type of assistance did PREDICT	PREDICT CC contacted the head of the Central Veterinary
initially provide? Which PREDICT	Laboratory of Kinshasa (LABOVET) and the FAO-ECTAD
personnel were involved?	team to coordinate with the INRB a plan for testing the
	samples that were received at INRB. A meeting was be held at
	the PREDICT office on 21 November 2017 at 3.00 PM with the
	LABOVET, FAO-ECTAD, INRB and the Director of Animal
	Health and Production.
When was the first official	The first official acknowledgement was on 15 October, 2017
acknowledgement of the outbreak (by	by the Bas-Uele Provincial Ministry of Agriculture, Fishery
which government agency or other	and Livestock.
reputable body and date)?	
When are a man are initiated and her	And in the state of the state of the Property of the Property of the State of the s
When was a response initiated and by	An investigation team from the Provincial Ministry of
whom? Which agencies were involved?	Agriculture was sent to the field on 13-20 October 2017, with support from the Bas-Uele provincial Health Office.
Who was in charge of the national response?	support from the bas-Oete provincial Health Office.
Was the cause of the outbreak confirmed	No
by a laboratory? If so, give details of the	110
initial confirmation (cause, species,	
specimen types tested and dates of testing	
if known).	
Where was the laboratory testing	Specimens were received at the Virology laboratory of INRB
performed (name of laboratory)?	on 7 November 2017, but have not been tested yet.
Number of days between initiation of	NA
government response and lab	
confirmation of laboratory results.	
Summary of the Outbreak or Event:	To be filled after active outbreak or event activity has
	ceased
Working name of the outbreak:	













Total number of cases:		Suspected:	Confirmed:	Deaths:
	Humans			
	Domestic			
	Animals			
	Wild Animals			
Summary of PREDICT Team response				
activities during the outbreak.				

PREDICT Outbreak or Health Event Response Daily Activities/Timeline

Working Title of Investigation: Cattle die-off in Bondo, Bas-Uele Province, DR Congo

Key Events:

Date	Day#	Notification or Action Taken
15 Oct 2017	-32	Alert of a cattle die-off was sent from the provincial Ministry of Agriculture, Fish and Livestock of Bas-Uele to the National Minister of Fishery and Livestock in Kinshasa DRC.
11/17/2017	1	PREDICT CC was informed by the head of the Virology laboratory at INRB that 11 blood specimens (whole blood in anticoagulant) from died and sick cattle from Bas-Uélé were received at INRB on 7 November 2017 (Specimens were sent from Bas Uélé on the 6 November according to the official Ministry report).
11/20/2017	4	PREDICT CC contacted the head of the Central Veterinary Laboratory of Kinshasa, the National coordinator of the FAO-ECTAD team and the staff at INRB in charge for testing the samples to coordinate actions on testing the samples. It was decided that serology and PCR should be performed. A meeting will be held on 11/21/2017 to decide on sharing of samples between the three laboratories (LABOVET, INRB and PREDICT).
		PREDICT CC contacted the Director of the "Centre de Surveillance de la Biodiversite" — CSB at the University of Kisangani to request for more information on the epidemiologic findings and data on the number of animals involved in the die-off. No information is available yet in Kisangani from the field.
11/21/2017	5	A meeting was held at the PREDICT office between the PREDICT team and the general administrator of the LABOVET, the national coordinator of the FAO-ECTAD team, one staff from the Ministry of Fishery and Livestock Direction of Animal Health and Productions. During this meeting:













	 The veterinarians said they are suspecting contagious bovine pleuropneumonia (CBPP). It was proposed that LABOVET should consider Serology and PCR for Mycoplasma in the testing plan. LABOVET indicated that they do not have reagents for testing and requested support from FAO, but the FAO-ECTAD is not sure as this is not a zoonosis and their project will support only outbreaks involving the five priority pathogens for DRC. However they mentioned that the request will be sent forward to FAO officials for a decision. In preparation for that assistance LABOVET will prepare a list of reagents needed and the quantities. As approved, PREDICT will test samples for PREDICT priority viral families (filovirus, coronavirus, paramyxovirus, flavivirus, and influenza viruses). Ministers of Agriculture and Fishery and Livestock will visit the LABOVET facility tomorrow. In an unrelated health event in a different region of the country, it was mentioned at the meeting that LABOVET received today 3 carcasses of cattle from Bankana on the "Plateau des Bateke" (Eastern Kinshasa) for necropsy, lesions were suggestive of Anthrax.













In-Country Government Outbreak or Health Event Points of Contact

Public Health ministry or department:

Name:	Benoit Kebela Ilunga
Email:	REDACTED
Mobile Phone:	NEDACTED
Livestock minist	ry or department:
Name:	Leopold Mulumba
Email:	REDACTED
Mobile Phone:	REDACTED
Wildlife/Environ	ment ministry or department:
Name:	Jeff Mapilanga
Email:	REDACTED
Mobile Phone:	NEDACTED
OIE focal point:	
Name:	Honore N'Lemba Mabela
Email:	REDACTED
Mobile Phone:	NEDACTED
IHR focal point:	
Name:	Theophile Bokenge
Email:	REDACTED
Mobile Phone:	

FAO:	
Name:	Philippe Kone
Email:	REDACTED
Mobile Phone:	

WHO:	
Name:	Ernest Dabire
Email:	REDACTED
Mobile Phone:	

EPT ONE HEALTH WORKFORCE Project:	
Name:	Diafuka Saila Ngita
Email:	<u>Diafuka.saila</u> ngita@tufts.edu













Mobile Phone:	REDACTED
	ESS and RESPONSE Project:
Name:	
Email:	
Mobile Phone:	
-	
Other Important	: Contacts:
Organization:	
Name: Email:	
nino emiliane i	
Mobile Phone:	
Oussuisstian	T
Organization: Name:	
Email:	
Mobile Phone:	
Mobile Phone:	
Organization:	
Name:	
Email:	
Mobile Phone:	
Organization:	
Name:	
Email:	
Mobile Phone:	

v.16May2017

Organization:

Mobile Phone:

Name: Email:











From: "Karen Saylors" <ksaylors@metabiota.com>

Sent: 11/29/2017 5:54:32 AM (-08:00)

"predict-outbreak@ucdavis.edu" <predict-outbreak@ucdavis.edu>

Cc: "James Ayukekbong" <jayukekbong@metabiota.com>; "William B. Karesh"

<karesh@ecohealthalliance.org>; "Prime Mulembakani" pmulembakani@metabiota.com>; "Eddy Rubin"

<erubin@metabiota.com>; "Tracey Goldstein" <tgoldstein@ucdavis.edu>; "David John Wolking"

<djwolking@ucdavis.edu>; "Jonna Mazet" <jkmazet@ucdavis.edu>

Subject: Re: Outbreak - DRC - Cattle

Thank you Anne for the update.

Jim and I have also been reaching out for the past couple of days but unfortunately haven't gotten much more news than what you've presented. We are communicating with the national lab (INRB) and I've reached out again this morning, so hoping to receive an update before EB later today.

Thanks,

Karen

From: Anne Laudisoit < laudisoit@ecohealthalliance.org>

Date: Wednesday, November 29, 2017 at 3:17 AM

To: Brian Bird <bhbird@ucdavis.edu>

Cc: James Ayukekbong <<u>jayukekbong@metabiota.com</u>>, "William B. Karesh" <<u>karesh@ecohealthalliance.org</u>>, "<u>predictoutbreak@ucdavis.edu</u>" <<u>predict-outbreak@ucdavis.edu</u>>, Prime Mulembakani <<u>predict-outbreak@ucdavis.edu</u>>,

Karen Saylors < ksaylors@metabiota.com>, Eddy Rubin < erubin@metabiota.com>, Tracey Goldstein

<<u>tgoldstein@ucdavis.edu</u>>, David John Wolking <<u>djwolking@ucdavis.edu</u>>, Jonna Mazet <<u>jkmazet@ucdavis.edu</u>>

Subject: Re: Outbreak - DRC - Cattle

Replies from MoA

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So I asked them to call again the herders and to reply to a series of more questions listed below and I'll phone him later today.

Questions asked:

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-Ask the herders of the affected territories to record the dates of propagation to the territory and number of cows alive and affected.

-How do the Mbororo call this disease in the local language? Which language?

-What measures have been taken? Antibiotic treatment? Yes or no and if so which one Sanitary: what do people do with carcasses? Quarantine and ban on moving animals?

Anne

On Tue, Nov 28, 2017 at 10:42 PM, Anne Laudisoit laudisoit@ecohealthalliance.org wrote:

Dear all

I don't have updates now but I just translated and forward to the MoA and Governor of Bas Uélé.

I hope they'll reply tomorrow

Anne

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Hi everyone,

I am just writing to inquire about a status update for this cattle health event?

- Are the cattle die-offs continuing? The report stated that the Minister of Ag was closing cattle markets on Nov 30th if the outbreak didn't subside. Is that still going to occur?
- Still no human illnesses associated with this event?
- Have any further discussions been had regarding the testing of these specimens?
 - Was FAO able to supply specific mycoplasma reagents?
 - o Are we engaging in testing using the PREDICT priority family protocols?
 - If so when may we expect the testing to be completed?

Thanks, and any updates are much appreciated!

-Brian

From: James Ayukekbong < jayukekbong@metabiota.com>

Date: Tuesday, November 21, 2017 at 1:18 PM

To: Jonna Mazet < jkmazet@ucdavis.edu>

Cc: "William B. Karesh, D.V.M" < karesh@ecohealthalliance.org, PREDICT-outbreak < predict-outbreak@ucdavis.edu, Prime Mulembakani < pmulembakani@metabiota.com, Brian Bird < bhbird@ucdavis.edu, Karen Saylors < ksaylors@metabiota.com, Eddy Rubin < erubin@metabiota.com, Tracey Goldstein < tgoldstein@ucdavis.edu, David J Wolking < djwolking@ucdavis.edu, Anne Laudisoit < laudisoit@ecohealthalliance.org

Subject: Re: Outbreak - DRC - Cattle

Dear all,

Find attached the updated outbreak report as of today Tuesday 21/11/2017.

Thank you Brian for the edits and revision of the initial submission, I have used tract change to accept your edits and provided revision were necessary.

Please, permit me to append below answers to the specific comments/questions raised.

"Thank you, James, for the completed health event form. Please take a look at this edited version and use this for further updates. I marked the tracked changes, and added in some documentation from the official Bas-Uele report for completeness. You'll also see some of my questions as comments.

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We can confirm that the size of the event is reported as >2000 cattle and have revised the number in the form.

2. Which cPCR tests are you considering running <u>if testing is approved</u>? This could have budgetary impacts, as we are very close to the limits in DRC and is worthy of consideration.

We are considering testing for Filo, Flavi, Paramyxo, Influenza and Coronaviruses.

3. I would also recommend that in your discussions tomorrow with the other laboratory partners that a screening for bacterial pathogens on the lung biopsy material be considered. The gross appearance of the lesions in the photos of the government report are possibly suggestive of a bacterial etiology.

Screening of Mycoplasma and bacteria pathogens is being considered, although LABOVET has presented resource challenges such as lack of reagents.

Have there been any reports of sick persons appearing after contact with these cattle?

No human transmission reported yet."

Kind regards,

J.A Ayukekbong, PhD

Regional Coordinator /Central Africa

USAID PREDICT | Metabiota

Email: jayukekbong@metabiota.com

Mobile: REDACTED

Website: www.metabiota.com

Skype: ayukekbong.ayukepi

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From: Promise REDACTED on behalf of Jonna Mazet < ikmazet@ucdavis.edu>

Sent: Tuesday, November 21, 2017 11:35:26 AM

To: James Ayukekbong

Cc: William B. Karesh; predict-outbreak@ucdavis.edu; Prime Mulembakani; Brian Bird; Karen Saylors; Eddy Rubin; Tracey

Goldstein; David John Wolking; Anne Laudisoit

Subject: Re: Outbreak - DRC - Cattle

Dear James,

Testing of these 11 samples is approved. Please let us know, as you always do, if you are asked to provide additional support or will need to expend additional funds for this response. Brian will continue to work with you on a daily basis for this outbreak.

Thanks,

Jonna

On Mon, Nov 20, 2017 at 3:47 PM, James Ayukekbong < jayukekbong@metabiota.com > wrote:

Dear Jonna,

We can test these 11 samples within our regular surveillance plan and budget and we would still be able to perform testing of PREDICT samples that has been planned for this year.

Cow is widely consumed in the country, as the cause of the die-off is unknown, there is fear of a potential zoonosis.

Support towards establishing the cause will inform public health surveillance approach by the government.

I recommend PREDICT involvement in testing these samples.

Kind regards,

J.A Ayukekbong, PhD

Regional Coordinator /Central Africa

USAID PREDICT | Metabiota

Email: jayukekbong@metabiota.com

Mobile: REDACTED

Website: www.metabiota.com
Skype: ayukekbong.ayukepi

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From: REDACTED on behalf of Jonna Mazet < ikmazet@ucdavis.edu>

Sent: Monday, November 20, 2017 2:14:45 PM

To: James Ayukekbong

Cc: William B. Karesh; predict-outbreak@ucdavis.edu; Prime Mulembakani; Brian Bird; Karen Saylors; Eddy Rubin; Tracey Goldstein; David John Wolking; Anne Laudisoit

Subject: Re: Outbreak - DRC - Cattle

Hi James,

Can you test the samples within the regular surveillance plan and budgets, or would you need to supplement? As you know, we have a tight country cap on what we can spend in DRC, so if we test these cattle will it be at the expense of not being able to do other work that has been planned for this year? If so, do you still recommend going ahead as requested by INRB?

Thanks for the outbreak form, too,

Jonna

On Mon, Nov 20, 2017 at 1:54 PM, James Ayukekbong < jayukekbong@metabiota.com > wrote:

Dear all,

Find attached the PREDICT outbreak report of cattle die-off in the Bondo territory of the Bas Uélé province in DRC.

We have receive a request from the INRB to test the 11 samples shipped to the INRB and our team is ready to commence testing upon approval.

I will update as we learn more about the outbreak. In the meantime, am happy to answer any other concerns.

J.A Ayukekbong, PhD

Regional Coordinator / Central Africa

USAID PREDICT | Metabiota

Email: jayukekbong@metabiota.com

Mobile: REDACTED

Website: www.metabiota.com
Skype: ayukekbong.ayukepi

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From: William B. Karesh < karesh@ecohealthalliance.org >

Sent: Monday, November 20, 2017 11:25:05 AM

To: James Ayukekbong

Cc: Jonna Mazet; predict-outbreak@ucdavis.edu; Prime Mulembakani; Brian Bird; Karen Saylors; Eddy Rubin; Tracey

Goldstein; David John Wolking; Anne Laudisoit

Subject: Re: Outbreak - DRC - Cattle

Wonderful. Thanks for the up date James.

ВК

William B. Karesh, D.V.M

Executive Vice President for Health and Policy

EcoHealth Alliance

460 West 34th Street - 17th Floor

New York, NY 10001 USA
<u>+1.212.380.4463</u> (direct)
<u>+1.212.380.4465</u> (fax)
www.ecohealthalliance.org
President, OIE Working Group on Wildlife
Co-chair, IUCN Species Survival Commission - Wildlife Health Specialist Group
EPT Partners Liaison, USAID Emerging Pandemic Threats - PREDICT-2 Program
EcoHealth Alliance leads cutting-edge research into the critical connections between human and wildlife health and delicate ecosystems. With this science we develop solutions that promote conservation and prevent pandemics.
On Nov 20, 2017, at 2:08 PM, James Ayukekbong < <u>jayukekbong@metabiota.com</u> > wrote:
Thanks Billy,
Our team has been advised of this cattle die-off in North-Eastern DRC and I am preparing a PREDICT outbreak report to be shared by the end of the day.
Best regards,
J. Ayukekbong, PhD
Regional Coordinator /Central Africa
USAID PREDICT Metabiota

attachments), is intended by Metabiota for the use of the named individual or entity to which it is addressed and may contain information that is privileged or otherwise confidential. It is not intended for transmission to, or receipt by, any individual or entity other than the named addressee except as otherwise expressly permitted in this email transmission. If you have received this email in error, please delete it without copying or forwarding it, and notify the sender of the error by email reply.
From: REDACTED on behalf of Jonna Mazet <ikmazet@ucdavis.edu> Sent: Monday, November 20, 2017 10:21:15 AM To: William B. Karesh Cc: James Ayukekbong; predict-outbreak@ucdavis.edu; Prime Mulembakani; Brian Bird; Karen Saylors; Eddy Rubin; Tracey Goldstein; David John Wolking; Anne Laudisoit Subject: Re: Outbreak - DRC - Cattle</ikmazet@ucdavis.edu>
Thanks very much,
Jonna
On Mon, Nov 20, 2017 at 10:11 AM, William B. Karesh karesh@ecohealthalliance.org wrote: Hi folks,
Anne Laudisoit sent us a report on a cattle die-off in northern DRC, around Buta. Samples apparently being sent to INRB.
Anne is copied here (she teaches at the Uni. of Kisangani) and is coming on board with EHA to be our country liaison for ROC and Cdl.
See report attached.
Billy

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Email: jayukekbong@metabiota.com

Mobile: REDACTED

Website: www.metabiota.com
Skype: ayukekbong.ayukepi

--

Laudisoit Anne (phD)

Consultant

EcoHealth Alliance
460 West 34th Street – 17th floor
New York, NY 10001

USA:+18453817833

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www.ecohealthalliance.org

EcoHealth Alliance leads cutting-edge scientific research into the critical connections between human and wildlife health and delicate ecosystems. With this science, we develop solutions that prevent pandemics and promote conservation.

--

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USA:+18453817833

BE+ REDACTED (mobile/whatsapp)

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From: "Anne Laudisoit" < laudisoit@ecohealthalliance.org>

Sent: 11/29/2017 7:36:47 AM (-08:00)

To: "Karen Saylors" <ksaylors@metabiota.com>

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Subject: Re: Outbreak - DRC - Cattle

New update from MoA

"We talked with the Mbororo herders here is the answers to your questions:

- the MBORORO do not have a specific name proper to this disease, they speak about the epidemic of cows
- 2000 dead cows as mentioned in our report to which we need to add 2150 cows that died so in total 4150 dead cows already since the beginning of this phenomenon
- measures as reported in our report:

Quarantinie of sick cows, any slaughter must be certified by a veterinarian and formal prohibitions on circulation of sick cows and incineration of dead cows by the local red cross agents

- the cows have not received any appropriate treatment until then because of this spread of the disease
- same symptoms as previously described thank you

On Wed, Nov 29, 2017 at 2:54 PM, Karen Saylors < <u>ksaylors@metabiota.com</u>> wrote: Thank you Anne for the update.

Jim and I have also been reaching out for the past couple of days but unfortunately haven't gotten much more news than what you've presented. We are communicating with the national lab (INRB) and I've reached out again this morning, so hoping to receive an update before EB later today.

Thanks, Karen

From: Anne Laudisoit < laudisoit@ecohealthalliance.org >

Date: Wednesday, November 29, 2017 at 3:17 AM

To: Brian Bird < bhbird@ucdavis.edu >

Cc: James Ayukekbong <jayukekbong@metabiota.com>, "William B. Karesh" <karesh@ecohealthalliance.org>,

"predict-outbreak@ucdavis.edu" <predict-outbreak@ucdavis.edu>, Prime Mulembakani

<pmulembakani@metabiota.com>, Karen Saylors <ksaylors@metabiota.com>, Eddy Rubin <erubin@metabiota.com>,

Tracey Goldstein < tgoldstein@ucdavis.edu, David John Wolking < djwolking@ucdavis.edu, Jonna Mazet

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Thanks, a	and	any	updates	are	much	appreciated
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Cc: "William B. Karesh, D.V.M" < karesh@ecohealthalliance.org, PREDICT-outbreak < predict-outbreak@ucdavis.edu, Prime Mulembakani < pmulembakani@metabiota.com, Brian Bird < bhbird@ucdavis.edu, Karen Saylors < ksaylors@metabiota.com, Eddy Rubin < erubin@metabiota.com, Tracey Goldstein < tgoldstein@ucdavis.edu, David J Wolking < diywolking@ucdavis.edu, Anne Laudisoit < laudisoit@ecohealthalliance.org

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Have there been any reports of sick persons appearing after contact with these cattle?

Kind regards,

J.A Ayukekbong, PhD

Regional Coordinator / Central Africa

USAID PREDICT | Metabiota

Email: jayukekbong@metabiota.com

Mobile: REDACTED

Website: www.metabiota.com

Skype: ayukekbong.ayukepi

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From REDACTED on behalf of Jonna Mazet < ikmazet@ucdavis.edu>

Sent: Tuesday, November 21, 2017 11:35:26 AM

To: James Ayukekbong

Cc: William B. Karesh; predict-outbreak@ucdavis.edu; Prime Mulembakani; Brian Bird; Karen Saylors; Eddy Rubin;

Tracey Goldstein; David John Wolking; Anne Laudisoit

Subject: Re: Outbreak - DRC - Cattle

Dear James.

Testing of these 11 samples is approved. Please let us know, as you always do, if you are asked to provide additional support or will need to expend additional funds for this response. Brian will continue to work with you on a daily basis for this outbreak.

Thanks,

Jonna

On Mon, Nov 20, 2017 at 3:47 PM, James Ayukekbong <jayukekbong@metabiota.com> wrote:

Dear Jonna,

We can test these 11 samples within our regular surveillance plan and budget and we would still be able to perform

testing of PREDICT samples that has been planned for this year.

Cow is widely consumed in the country, as the cause of the die-off is unknown, there is fear of a potential zoonosis.

Support towards establishing the cause will inform public health surveillance approach by the government.

I recommend PREDICT involvement in testing these samples.

Kind regards,

J.A Ayukekbong, PhD

Regional Coordinator / Central Africa

USAID PREDICT | Metabiota

Email: jayukekbong@metabiota.com

Mobile: REDACTED

Website: www.metabiota.com
Skype: ayukekbong.ayukepi

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From: PEDACTED on behalf of Jonna Mazet < jkmazet@ucdavis.edu>

Sent: Monday, November 20, 2017 2:14:45 PM

To: James Ayukekbong

Cc: William B. Karesh; predict-outbreak@ucdavis.edu; Prime Mulembakani; Brian Bird; Karen Saylors; Eddy Rubin;

Tracey Goldstein; David John Wolking; Anne Laudisoit

Subject: Re: Outbreak - DRC - Cattle

Hi James,

Can you test the samples within the regular surveillance plan and budgets, or would you need to supplement? As you know, we have a tight country cap on what we can spend in DRC, so if we test these cattle will it be at the expense of not being able to do other work that has been planned for this year? If so, do you still recommend going ahead as requested by INRB?

Thanks for the outbreak form, too,

On Mon, Nov 20, 2017 at 1:54 PM, James Ayukekbong < jayukekbong@metabiota.com > wrote:

Dear all,

Find attached the PREDICT outbreak report of cattle die-off in the Bondo territory of the Bas Uélé province in DRC.

We have receive a request from the INRB to test the 11 samples shipped to the INRB and our team is ready to commence testing upon approval.

I will update as we learn more about the outbreak. In the meantime, am happy to answer any other concerns.

Kind regards,

J.A Ayukekbong, PhD

Regional Coordinator / Central Africa

USAID PREDICT | Metabiota

Email: jayukekbong@metabiota.com

Mobile: REDACTED

Website: www.metabiota.com
Skype: ayukekbong.ayukepi

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From: William B. Karesh < karesh@ecohealthalliance.org>

Sent: Monday, November 20, 2017 11:25:05 AM

To: James Ayukekbong

Cc: Jonna Mazet; predict-outbreak@ucdavis.edu; Prime Mulembakani; Brian Bird; Karen Saylors; Eddy Rubin;

Tracey Goldstein; David John Wolking; Anne Laudisoit

Subject: Re: Outbreak - DRC - Cattle

Wonderful. Thanks for the up date James.
ВК
William B. Karesh, D.V.M
Executive Vice President for Health and Policy
EcoHealth Alliance
460 West 34th Street - 17th Floor
New York, NY 10001 USA
<u>+1.212.380.4463</u> (direct)
+1.212.380.4465 (fax)
www. <u>ecohealthalliance.org</u>
President, OIE Working Group on Wildlife
Co-chair, IUCN Species Survival Commission - Wildlife Health Specialist Group
EPT Partners Liaison, USAID Emerging Pandemic Threats - PREDICT-2 Program
EcoHealth Alliance leads cutting-edge research into the critical connections between human and wildlife health and delicate ecosystems. With this science we develop solutions that promote conservation and prevent pandemics.

Thanks Billy,

Our team has been advised of this cattle die-off in North-Eastern DRC and I am preparing a PREDICT outbreak report to be shared by the end of the day.

Best regards,

J. Ayukekbong, PhD

Regional Coordinator / Central Africa

USAID PREDICT | Metabiota

Email: jayukekbong@metabiota.com

Mobile: REDACTED

Website: www.metabiota.com
Skype: ayukekbong.ayukepi

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From: > on behalf of Jonna Mazet

<jkmazet@ucdavis.edu>

Sent: Monday, November 20, 2017 10:21:15 AM

To: William B. Karesh

Cc: James Ayukekbong; predict-outbreak@ucdavis.edu; Prime Mulembakani; Brian Bird; Karen

Saylors; Eddy Rubin; Tracey Goldstein; David John Wolking; Anne Laudisoit

Subject: Re: Outbreak - DRC - Cattle

Thanks very much,

Jonna

On Mon, Nov 20, 2017 at 10:11 AM, William B. Karesh < karesh@ecohealthalliance.org > wrote: Hi folks,

Anne Laudisoit sent us a report on a cattle die-off in northern DRC, around Buta. Samples apparently being sent to INRB.

Anne is copied here (she teaches at the Uni. of Kisangani) and is coming on board with EHA to be our country liaison for ROC and Cdl.

See report attached.

--

Laudisoit Anne (phD)

Consultant

EcoHealth Alliance 460 West 34th Street – 17th floor New York, NY 10001

USA:+18453817833

BE+ REDACTED (mobile/whatsapp)

www.ecohealthalliance.org

EcoHealth Alliance leads cutting-edge scientific research into the critical connections between human and wildlife health and delicate ecosystems. With this science, we develop solutions that prevent pandemics and promote conservation.

--

Laudisoit Anne (phD)

Consultant

EcoHealth Alliance 460 West 34th Street – 17th floor New York, NY 10001

USA:+18453817833

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__

Laudisoit Anne (phD)

Consultant

EcoHealth Alliance 460 West 34th Street – 17th floor New York, NY 10001

USA:+18453817833

BE+ REDACTED (mobile/whatsapp)

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EcoHealth Alliance leads cutting-edge scientific research into the critical connections between human and wildlife health and delicate ecosystems. With this science, we develop solutions that prevent pandemics and promote conservation.

From: "Anne Laudisoit" < laudisoit@ecohealthalliance.org>

Sent: 11/29/2017 11:43:27 AM (-08:00)

To: "James Ayukekbong" <jayukekbong@metabiota.com>

Cc: "Brian Bird" <bhbird@ucdavis.edu>; "William B. Karesh" <karesh@ecohealthalliance.org>;

"predict-outbreak@ucdavis.edu" < predict-outbreak@ucdavis.edu>; "Prime Mulembakani"

<pmulembakani@metabiota.com>; "Karen Saylors" <ksaylors@metabiota.com>; "Eddy Rubin"

<erubin@metabiota.com>; "Tracey Goldstein" <tgoldstein@ucdavis.edu>; "David John Wolking"

<djwolking@ucdavis.edu>; "Jonna Mazet" <jkmazet@ucdavis.edu>; "David McIver" <dmciver@metabiota.com>

Subject: Re: Outbreak - DRC - Cattle

According to OIE, CIRAD in France is the reference laboratory for PPCB (if this is it...suspected)

I am in contact with CIRAD (friend working there) but as you know it is not allowed to ship any Artiodactyles samples due to transmission risks (even inactivated)

BUT maybe if aliquotes of DNA/RNA can be sent to them they can screen for Mycoplasma (We'll need around 107\$ to ship from Kinshasa to France via DHL)?

or the other way round, kit for diagnostic could be sent from Montpellier to INRB?

Let me know if this may help

Anne

On Wed, Nov 29, 2017 at 8:19 PM, James Ayukekbong < jayukekbong@metabiota.com > wrote: Hi everyone,

Find attached the updated outbreak report of the cattle die-off event in Bas Uele, DRC as of today Wednesday 29/11/2017.

I am sorry for the delay of this report, we have been having some challenges getting information from the field.

Dear Brian, below are answers to specific questions raised;

- Are the cattle die-offs continuing? The report stated that the Minister of Ag was closing cattle markets on Nov 30th if the outbreak didn't subside. Is that still going to occur? Yes, the die-offs are continuing, the current death toll is 4150 cattle. Quarantine and prohibitions on circulation of sick cattle is in place as well as incineration of dead cattle
- Still no human illnesses associated with this event? No human transmission reported so far
- Have any further discussions been had regarding the testing of these specimens? No
 - Was FAO able to supply specific mycoplasma reagents? FAO didn't supply reagents for the testing of Mycoplasma as they didn't get approval from their officials. LABOVET has not progressed with any testing as they advised they don't have reagents.
 - Are we engaging in testing using the PREDICT priority family protocols? Yes
 - If so when may we expect the testing to be completed?
 - The PREDICT received 10 samples from the INRB on Monday the 27/11/2017 not 11 as previously reported (a sample was identified as duplicate). These samples are currently being tested for PREDICT priority viral families.
 - Preliminary results for Coronavirus and Paramyxovirus were negative for all 10 samples tested. Results of the other viral families will be available by Friday.

I will provide the complete preliminary results of PREDICT testing and any other updates by Friday. Meantime, I am happy to answer other questions or concerns.

Kind regards,

J.A Ayukekbong, PhD

Regional Coordinator /Central Africa USAID PREDICT | Metabiota Email: jayukekbong@metabiota.com Mobile: REDACTED

Website: www.metabiota.com Skype: ayukekbong.ayukepi

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From: Brian Bird <bhbird@ucdavis.edu>

Sent: Tuesday, November 28, 2017 1:19:06 PM

To: James Ayukekbong

Cc: William B. Karesh; predict-outbreak@ucdavis.edu; Prime Mulembakani; Karen Saylors; Eddy Rubin; Tracey

Goldstein; David John Wolking; Anne Laudisoit; Jonna Mazet

Subject: Re: Outbreak - DRC - Cattle

Hi everyone,

I am just writing to inquire about a status update for this cattle health event?

- Are the cattle die-offs continuing? The report stated that the Minister of Ag was closing cattle markets on Nov 30th if the outbreak didn't subside. Is that still going to occur?
- Still no human illnesses associated with this event?
- Have any further discussions been had regarding the testing of these specimens?
 - Was FAO able to supply specific mycoplasma reagents?
 - o Are we engaging in testing using the PREDICT priority family protocols?
 - If so when may we expect the testing to be completed?

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minums,	ullu	ully	apaates	ai c	HIGCH	appic	.ciatca.

-Brian

From: James Ayukekbong < jayukekbong@metabiota.com >

Date: Tuesday, November 21, 2017 at 1:18 PM

To: Jonna Mazet < jkmazet@ucdavis.edu>

Cc: "William B. Karesh, D.V.M" < karesh@ecohealthalliance.org, PREDICT-outbreak < predict-outbreak@ucdavis.edu, Prime Mulembakani < pmulembakani@metabiota.com, Brian Bird < bhbird@ucdavis.edu, Karen Saylors < ksaylors@metabiota.com, Eddy Rubin < erubin@metabiota.com, Tracey Goldstein < tgoldstein@ucdavis.edu, David J Wolking < djwolking@ucdavis.edu, Anne Laudisoit < laudisoit@ecohealthalliance.org

Subject: Re: Outbreak - DRC - Cattle

Dear all,

Find attached the updated outbreak report as of today Tuesday 21/11/2017.

Thank you Brian for the edits and revision of the initial submission, I have used tract change to accept your edits and provided revision were necessary.

Please, permit me to append below answers to the specific comments/questions raised.

"Thank you, James, for the completed health event form. Please take a look at this edited version and use this for further updates. I marked the tracked changes, and added in some documentation from the official Bas-Uele report for completeness. You'll also see some of my questions as comments.

A few important questions for follow-up:

1. The translated government report from 05 November suggests the size of this event to be 2000 animals (two-thousand). But your report from 15 October suggests only 120 (one hundred twenty)? Can you help clarify that difference? Perhaps there are multiple reports from Bas-Uele? I'm just trying to keep the numbers consistent and updated as much as possible.

We can confirm that the size of the event is reported as >2000 cattle and have revised the number in the form.

2. Which cPCR tests are you considering running <u>if testing is approved</u>? This could have budgetary impacts, as we are very close to the limits in DRC and is worthy of consideration.

We are considering testing for Filo, Flavi, Paramyxo, Influenza and Coronaviruses.

3. I would also recommend that in your discussions tomorrow with the other laboratory partners that a screening for bacterial pathogens on the lung biopsy material be considered. The gross appearance of the lesions in the photos of the government report are possibly suggestive of a bacterial etiology.

Screening of Mycoplasma and bacteria pathogens is being considered, although LABOVET has presented resource challenges such as lack of reagents.

Have there been any reports of sick persons appearing after contact with these cattle?

No human transmission reported yet."

Kind regards,

J.A Ayukekbong, PhD

Regional Coordinator / Central Africa

USAID PREDICT | Metabiota

Email: jayukekbong@metabiota.com

Mobile: REDACTED

Website: www.metabiota.com

Skype: ayukekbong.ayukepi

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From: Prom: Property Property

<jkmazet@ucdavis.edu>

Sent: Tuesday, November 21, 2017 11:35:26 AM

To: James Ayukekbong

Cc: William B. Karesh; predict-outbreak@ucdavis.edu; Prime Mulembakani; Brian Bird; Karen Saylors; Eddy

Rubin; Tracey Goldstein; David John Wolking; Anne Laudisoit

Subject: Re: Outbreak - DRC - Cattle

Dear James,

Testing of these 11 samples is approved. Please let us know, as you always do, if you are asked to provide additional support or will need to expend additional funds for this response. Brian will continue to work with you on a daily basis for this outbreak.

Thanks,

Jonna

On Mon, Nov 20, 2017 at 3:47 PM, James Ayukekbong <jayukekbong@metabiota.com> wrote:

Dear Jonna,

We can test these 11 samples within our regular surveillance plan and budget and we would still be able to perform

testing of PREDICT samples that has been planned for this year.

Cow is widely consumed in the country, as the cause of the die-off is unknown, there is fear of a potential zoonosis.

Support towards establishing the cause will inform public health surveillance approach by the government.

I recommend PREDICT involvement in testing these samples.

Kind regards,

J.A Ayukekbong, PhD

Regional Coordinator / Central Africa

USAID PREDICT | Metabiota

Email: jayukekbong@metabiota.com

Mobile: REDACTED

Website: www.metabiota.com

Skype: ayukekbong.ayukepi

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From: Separate Property on behalf of Jonna Mazet

<jkmazet@ucdavis.edu>

Sent: Monday, November 20, 2017 2:14:45 PM

To: James Ayukekbong

Cc: William B. Karesh; predict-outbreak@ucdavis.edu; Prime Mulembakani; Brian Bird; Karen Saylors;

Eddy Rubin; Tracey Goldstein; David John Wolking; Anne Laudisoit

Subject: Re: Outbreak - DRC - Cattle

Hi James,

Can you test the samples within the regular surveillance plan and budgets, or would you need to supplement? As you know, we have a tight country cap on what we can spend in DRC, so if we test these cattle will it be at the expense of not being able to do other work that has been planned for this year? If so, do you still recommend going ahead as requested by INRB?

Thanks for the outbreak form, too,

Jonna

On Mon, Nov 20, 2017 at 1:54 PM, James Ayukekbong <jayukekbong@metabiota.com> wrote:

Dear all,

Find attached the PREDICT outbreak report of cattle die-off in the Bondo territory of the Bas Uélé province in DRC.

We have receive a request from the INRB to test the 11 samples shipped to the INRB and our team is ready to commence testing upon approval.

I will update as we learn more about the outbreak. In the meantime, am happy to answer any other concerns.

Kind regards,

J.A Ayukekbong, PhD

Regional Coordinator / Central Africa

USAID PREDICT | Metabiota

Email: jayukekbong@metabiota.com

Mobile: REDACTED

Website: www.metabiota.com

Skype: ayukekbong.ayukepi

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From: William B. Karesh < karesh@ecohealthalliance.org >

Sent: Monday, November 20, 2017 11:25:05 AM

To: James Ayukekbong

Cc: Jonna Mazet; predict-outbreak@ucdavis.edu; Prime Mulembakani; Brian Bird; Karen Saylors; Eddy

Rubin; Tracey Goldstein; David John Wolking; Anne Laudisoit

Subject: Re: Outbreak - DRC - Cattle

Wonderful. Thanks for the up date James.

ВК

William B. Karesh, D.V.M

Executive Vice President for Health and Policy

EcoHealth Alliance

460 West 34th Street - 17th Floor

New York, NY 10001 USA

+1.212.380.4463 (direct)

+1.212.380.4465 (fax)

www.ecohealthalliance.org President, OIE Working Group on Wildlife Co-chair, IUCN Species Survival Commission - Wildlife Health Specialist Group EPT Partners Liaison, USAID Emerging Pandemic Threats - PREDICT-2 Program EcoHealth Alliance leads cutting-edge research into the critical connections between human and wildlife health and delicate ecosystems. With this science we develop solutions that promote conservation and prevent pandemics. On Nov 20, 2017, at 2:08 PM, James Ayukekbong < <u>jayukekbong@metabiota.com</u> > wrote: Thanks Billy, Our team has been advised of this cattle die-off in North-Eastern DRC and I am preparing a PREDICT outbreak report to be shared by the end of the day. Best regards, J. Ayukekbong, PhD Regional Coordinator / Central Africa **USAID PREDICT | Metabiota** Email: jayukekbong@metabiota.com Mobile: * REDACTED

Website: www.metabiota.com

From:

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on behalf of Jonna Mazet

REDACTED

<pre><jkmazet@ucdavis.edu> Sent: Monday, November 20, 2017 10:21:15 AM To: William B. Karesh Cc: James Ayukekbong; predict-outbreak@ucdavis.edu; Prime Mulembakani; Brian Bird; Karen Saylors; Eddy Rubin; Tracey Goldstein; David John Wolking; Anne Laudisoit Subject: Re: Outbreak - DRC - Cattle</jkmazet@ucdavis.edu></pre>
Thanks very much,
Jonna
On Mon, Nov 20, 2017 at 10:11 AM, William B. Karesh karesh@ecohealthalliance.org wrote: Hi folks,
Anne Laudisoit sent us a report on a cattle die-off in northern DRC, around Buta. Samples apparently being sent to INRB.
Anne is copied here (she teaches at the Uni. of Kisangani) and is coming on board with EHA to be our country liaison for ROC and CdI.
See report attached.
Billy

__

Laudisoit Anne (phD)

Consultant

EcoHealth Alliance 460 West 34th Street – 17th floor New York, NY 10001

USA:+18453817833

BE+ REDACTED (mobile/whatsapp)

www.ecohealthalliance.org

EcoHealth Alliance leads cutting-edge scientific research into the critical connections between human and wildlife health and delicate ecosystems. With this science, we develop solutions that prevent pandemics and promote conservation.

From: "Brian Bird" < bhbird@ucdavis.edu>
Sent: 11/29/2017 12:06:38 PM (-08:00)

To: "Karen Saylors" <ksaylors@metabiota.com>; "predict-outbreak@ucdavis.edu" <predict-

outbreak@ucdavis.edu>; "James Ayukekbong" <jayukekbong@metabiota.com>; "Jonna Mazet"

<jkmazet@ucdavis.edu>; "Tracey Goldstein" <tgoldstein@ucdavis.edu>

Cc: "William B. Karesh" <karesh@ecohealthalliance.org>; "Prime Mulembakani" <pmulembakani@metabiota.com>; "Eddy Rubin" <erubin@metabiota.com>; "David John Wolking" <djwolking@ucdavis.edu>; "Anne Laudisoit" <laudisoit@ecohealthalliance.org>; "David McIver" <dmciver@metabiota.com>

Subject: Re: Outbreak - DRC - Cattle

Great! Thanks for that update Karen. I'll add that info into the report that James just sent.

-b

From: Karen Saylors ksaylors@metabiota.com
Date: Wednesday, November 29, 2017 at 12:02 PM

To: PREDICT-outbreak predict-outbreak@ucdavis.edu>, James Ayukekbong <jayukekbong@metabiota.com>,
Brian Bird <bhbird@ucdavis.edu>, Jonna Mazet <jkmazet@ucdavis.edu>, Tracey Goldstein
<tgoldstein@ucdavis.edu>

Cc: "William B. Karesh, D.V.M" <karesh@ecohealthalliance.org>, Prime Mulembakani <pmulembakani@metabiota.com>, Eddy Rubin <erubin@metabiota.com>, David J Wolking <djwolking@ucdavis.edu>, Anne Laudisoit <laudisoit@ecohealthalliance.org>, David McIver <dmciver@metabiota.com>

Subject: Re: Outbreak - DRC - Cattle

Hi everyone.

Just to add that lab analyses were just completed, specifically for:

-- Coronavirus (with Watanabe protocol & Quan protocol), Filovirus, Flavivirus, Paramyxovirus, Influenza (with Anthony protocol & Liang protocol) and Orthobunyavirus.

All 10 samples tested negative for these viral families.

Thanks, Karen

From: James Ayukekbong < jayukekbong@metabiota.com >

Date: Wednesday, November 29, 2017 at 11:19 AM

To: Brian Bird < bhbird@ucdavis.edu>

Cc: "William B. Karesh" < karesh@ecohealthalliance.org >, "predict-outbreak@ucdavis.edu" < predict-outbreak@ucdavis.edu" < predict-outbreak@ucdavis.edu >, Prime Mulembakani < pmulembakani@metabiota.com >, Karen Saylors < ksaylors@metabiota.com >, Eddy Rubin < erubin@metabiota.com >, Tracey Goldstein < tgoldstein@ucdavis.edu >, David John Wolking < dijwolking@ucdavis.edu >, Anne Laudisoit < laudisoit@ecohealthalliance.org >, Jonna Mazet < jkmazet@ucdavis.edu >, David McIver < dmciver@metabiota.com >

Subject: Re: Outbreak - DRC - Cattle

Hi everyone,

Find attached the updated outbreak report of the cattle die-off event in Bas Uele, DRC as of today Wednesday 29/11/2017.

I am sorry for the delay of this report, we have been having some challenges getting information from the field.

Dear Brian, below are answers to specific questions raised;

- Are the cattle die-offs continuing? The report stated that the Minister of Ag was closing cattle markets on Nov 30th if the outbreak didn't subside. Is that still going to occur? Yes, the die-offs are continuing, the current death toll is 4150 cattle. Quarantine and prohibitions on circulation of sick cattle is in place as well as incineration of dead cattle
- Still no human illnesses associated with this event? No human transmission reported so far
- Have any further discussions been had regarding the testing of these specimens? No
 - Was FAO able to supply specific mycoplasma reagents? FAO didn't supply reagents for the testing of Mycoplasma as they didn't get approval from their officials. LABOVET has not progressed with any testing as they advised they don't have reagents.
 - o Are we engaging in testing using the PREDICT priority family protocols? Yes
 - If so when may we expect the testing to be completed?
 - The PREDICT received 10 samples from the INRB on Monday the 27/11/2017 not 11 as previously reported (a sample was identified as duplicate). These samples are currently being tested for PREDICT priority viral families.
 - Preliminary results for Coronavirus and Paramyxovirus were negative for all 10 samples tested. Results of the other viral families will be available by Friday.

I will provide the complete preliminary results of PREDICT testing and any other updates by Friday. Meantime, I am happy to answer other questions or concerns.

Kind regards,

J.A Ayukekbong, PhD

Regional Coordinator / Central Africa

USAID PREDICT | Metabiota

Email: jayukekbong@metabiota.com

Mobile: + REDACTED
Website: www.metabiota.com
Skype: ayukekbong.ayukepi

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From: Brian Bird <bhbird@ucdavis.edu>

Sent: Tuesday, November 28, 2017 1:19:06 PM

To: James Ayukekbong

Cc: William B. Karesh; predict-outbreak@ucdavis.edu; Prime Mulembakani; Karen Saylors; Eddy Rubin; Tracey Goldstein;

David John Wolking; Anne Laudisoit; Jonna Mazet

Subject: Re: Outbreak - DRC - Cattle

Hi everyone,

I am just writing to inquire about a status update for this cattle health event?

- Are the cattle die-offs continuing? The report stated that the Minister of Ag was closing cattle markets on Nov 30th if the outbreak didn't subside. Is that still going to occur?
- Still no human illnesses associated with this event?
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 - Was FAO able to supply specific mycoplasma reagents?
 - o Are we engaging in testing using the PREDICT priority family protocols?
 - If so when may we expect the testing to be completed?

Thanks, and any updates are much appreciated!

-Brian

From: James Ayukekbong < jayukekbong@metabiota.com>

Date: Tuesday, November 21, 2017 at 1:18 PM **To:** Jonna Mazet < jkmazet@ucdavis.edu>

Cc: "William B. Karesh, D.V.M" < karesh@ecohealthalliance.org, PREDICT-outbreak < predict-outbreak@ucdavis.edu, Prime Mulembakani < pmulembakani@metabiota.com, Brian Bird < bhbird@ucdavis.edu, Karen Saylors < ksaylors@metabiota.com, Eddy Rubin < erubin@metabiota.com, Tracey Goldstein < tgoldstein@ucdavis.edu, David J Wolking < djwolking@ucdavis.edu, Anne Laudisoit < laudisoit@ecohealthalliance.org

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Have there been any reports of sick persons appearing after contact with these cattle? No human transmission reported yet."

Kind regards,

J.A Ayukekbong, PhD

Regional Coordinator / Central Africa

USAID PREDICT | Metabiota

Email: jayukekbong@metabiota.com

Mobile: + REDACTED
Website: www.metabiota.com
Skype: ayukekbong.ayukepi

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From: REDACTED on behalf of Jonna Mazet

<jkmazet@ucdavis.edu>

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Cc: William B. Karesh; predict-outbreak@ucdavis.edu; Prime Mulembakani; Brian Bird; Karen Saylors; Eddy

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Subject: Re: Outbreak - DRC - Cattle

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Can you test the samples within the regular surveillance plan and budgets, or would you need to supplement? As you know, we have a tight country cap on what we can spend in DRC, so if we test these cattle will it be at the expense of not being able to do other work that has been planned for this year? If so, do you still recommend going ahead as requested by INRB?

Thanks for the outbreak form, too,

Jonna

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Dear all.

Find attached the PREDICT outbreak report of cattle die-off in the Bondo territory of the Bas Uélé province in DRC.

We have receive a request from the INRB to test the 11 samples shipped to the INRB and our team is ready to commence testing upon approval.

I will update as we learn more about the outbreak. In the meantime, am happy to answer any other concerns.

Kind regards,

J.A Ayukekbong, PhD

Regional Coordinator /Central Africa

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Sent: Monday, November 20, 2017 11:25:05 AM

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Cc: Jonna Mazet; predict-outbreak@ucdavis.edu; Prime Mulembakani; Brian Bird; Karen Saylors; Eddy

Rubin; Tracey Goldstein; David John Wolking; Anne Laudisoit

Subject: Re: Outbreak - DRC - Cattle

Wonderful. Thanks for the up date James.

BK

William B. Karesh, D.V.M

Executive Vice President for Health and Policy

EcoHealth Alliance
460 West 34th Street - 17th Floor
New York, NY 10001 USA

+1.212.380.4463 (direct) +1.212.380.4465 (fax) www.ecohealthalliance.org

President, OIE Working Group on Wildlife

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EPT Partners Liaison, USAID Emerging Pandemic Threats - PREDICT-2 Program

EcoHealth Alliance leads cutting-edge research into the critical connections between human and wildlife health and delicate ecosystems. With this science we develop solutions that promote conservation and prevent pandemics.

On Nov 20, 2017, at 2:08 PM, James Ayukekbong <jayukekbong@metabiota.com> wrote:

Thanks Billy,

Our team has been advised of this cattle die-off in North-Eastern DRC and I am preparing a PREDICT outbreak report to be shared by the end of the day.

Best regards,

J. Ayukekbong, PhD

Regional Coordinator / Central Africa

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From: REDACTED on behalf of Jonna Mazet

<jkmazet@ucdavis.edu>

Sent: Monday, November 20, 2017 10:21:15 AM

To: William B. Karesh

Cc: James Ayukekbong; predict-outbreak@ucdavis.edu; Prime Mulembakani; Brian Bird;

Karen Saylors; Eddy Rubin; Tracey Goldstein; David John Wolking; Anne Laudisoit

Subject: Re: Outbreak - DRC - Cattle

Thanks very much, Jonna

On Mon, Nov 20, 2017 at 10:11 AM, William B. Karesh < karesh@ecohealthalliance.org> wrote: Hi folks,

Anne Laudisoit sent us a report on a cattle die-off in northern DRC, around Buta. Samples apparently being sent to INRB.

Anne is copied here (she teaches at the Uni. of Kisangani) and is coming on board with EHA to be our country liaison for ROC and Cdl.

See report attached.

Billy

From: "Brian Bird" <bhbird@ucdavis.edu>
Sent: 11/29/2017 1:24:04 PM (-08:00)

To: "James Ayukekbong" <jayukekbong@metabiota.com>

Cc: "William B. Karesh" <karesh@ecohealthalliance.org>; "predict-outbreak@ucdavis.edu"

outbreak@ucdavis.edu>; "Prime Mulembakani" <pmulembakani@metabiota.com>; "Karen Saylors"

<ksaylors@metabiota.com>; "Eddy Rubin" <erubin@metabiota.com>; "Tracey Goldstein" <tgoldstein@ucdavis.edu>;
"David John Wolking" <djwolking@ucdavis.edu>; "Anne Laudisoit" <laudisoit@ecohealthalliance.org>; "Jonna Mazet"

<jkmazet@ucdavis.edu>; "David McIver" <dmciver@metabiota.com>

Subject: Re: Outbreak - DRC - Cattle

Attachments: PREDICT-DRC Cattle die-off_Bondo Bas-Uele 29Nov2017-2-bb.docx

Thanks James and Karen and Anne for the informative updates today regarding this apparently ever-increasing cattle die-off. I have modified your report James, to include the latest updates from all of you. I also cleaned up some of the text boxes where it seemed appropriate in light of the new information today.

Excellent work by your team to get all 10 specimens tested quickly by our PREDICT priority protocols including the orthobunyas!

Please find the updated form attached for your reference.

-Brian

From: James Ayukekbong <jayukekbong@metabiota.com>

Date: Wednesday, November 29, 2017 at 11:19 AM

To: Brian Bird <bhbird@ucdavis.edu>

Cc: "William B. Karesh, D.V.M" <karesh@ecohealthalliance.org>, PREDICT-outbreak coutbreak@ucdavis.edu>, Prime Mulembakani <pmulembakani@metabiota.com>, Karen Saylors
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<laudisoit@ecohealthalliance.org>, Jonna Mazet <jkmazet@ucdavis.edu>, David McIver

<dmciver@metabiota.com>

Subject: Re: Outbreak - DRC - Cattle

Hi everyone,

Find attached the updated outbreak report of the cattle die-off event in Bas Uele, DRC as of today Wednesday 29/11/2017.

I am sorry for the delay of this report, we have been having some challenges getting information from the field.

Dear Brian, below are answers to specific questions raised;

- Are the cattle die-offs continuing? The report stated that the Minister of Ag was closing cattle markets on Nov 30th if the outbreak didn't subside. Is that still going to occur? Yes, the die-offs are continuing, the current death toll is 4150 cattle. Quarantine and prohibitions on circulation of sick cattle is in place as well as incineration of dead cattle.
- Still no human illnesses associated with this event? No human transmission reported so far
- Have any further discussions been had regarding the testing of these specimens? No

- Was FAO able to supply specific mycoplasma reagents? FAO didn't supply reagents for the testing of Mycoplasma as they didn't get approval from their officials. LABOVET has not progressed with any testing as they advised they don't have reagents.
- o Are we engaging in testing using the PREDICT priority family protocols? Yes
 - If so when may we expect the testing to be completed?
 - The PREDICT received 10 samples from the INRB on Monday the 27/11/2017 not 11 as previously reported (a sample was identified as duplicate). These samples are currently being tested for PREDICT priority viral families.
 - Preliminary results for Coronavirus and Paramyxovirus were negative for all 10 samples tested. Results of the other viral families will be available by Friday.

I will provide the complete preliminary results of PREDICT testing and any other updates by Friday. Meantime, I am happy to answer other questions or concerns.

Kind regards,

J.A Ayukekbong, PhD

Regional Coordinator / Central Africa

USAID PREDICT | Metabiota

Email: jayukekbong@metabiota.com

Mobile: REDACTED
Website: www.metabiota.com
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Wonderful. Thanks for the up date James.

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William B. Karesh, D.V.M

Executive Vice President for Health and Policy

EcoHealth Alliance

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Anne is copied here (she teaches at the Uni. of Kisangani) and is coming on board with EHA to be our country liaison for ROC and Cdl.

See report attached.

Billy



PREDICT Outbreak or Health Event Rapid Report

Today's Date: 29 November 2017

Working Title of Investigation: Cattle die-offs in Bondo, Bas-Uele Province, DR Congo

Cumulative day of the outbreak investigation: 45

Please describe the disease signs and symptoms and species affected (humans, domesticated animals, wildlife:

On 15 October 2017, an alert of cattle die-off was sent from the provincial Ministry of Agriculture, Fish and Livestock of Bas-Uele to the National Minister of Fishery and Livestock. According to this alert, about 2,000 cattle imported from Chad by the Mbororo tribe through the Central African Republic died in the Baya village, Bondo territory, Bas-Uele province with symptoms including diarrhea, weight-loss, swelling knees and chancroid.

From a translated version of an official government report dated 05 November 2017: "The onset of the disease begins with weight loss accompanied by abundant diarrhea. Then, the disease evolves with swelling of the knees (water retention). Finally, galls (scabies like) appear on the tail followed by loss of hair. In some severe cases, on the naked tail, syphilitic or tubercular-like lesions resembling eschar were observed."

On 17 November 2017, a second alert of further cattle die-offs was reported from Bas-Uele province.

Update 28 November 2017: PREDICT also obtained the following summarized translation of information from provincial MoAg contacts and their discussions with the local Mbororo herdspeople from affected areas: The die-off now may exceed 4150 cattle. The Mbororo do not have a specific name proper to this disease, they speak about the epidemic of cows. In the region, these measures have been put in place: a general quarantine of sick cows, any slaughter must be certified by a veterinarian, formal prohibitions on movement of sick cows, and incineration of dead cows by the local red cross agents. The cows have not received any appropriate treatment until now because of this spread of the disease. The symptoms remain as previously described.

There continues to be no reports of human illnesses associated with this cattle die-off.

Location	
Country:	Democratic Republic of Congo
District:	Bondo Territory
Village/Town:	Baya village
GPS Coordinates (if known):	
Date that first case(s) of illness	Unknown
occurred (if known or estimate):	
Date that PREDICT was first notified	17 November 2017
of outbreak:	













Key Information	Description of Findings/Actions/Outcomes			
How many affected individuals?		Suspected:	Confirmed:	Deaths:
	Humans			
	Domestic			>4,150
	Animals			cattle
	Wild Animals			
How was outbreak first noticed?	The Bas-Uele provincial minister of agriculture, Fishery and Livestock notified the DRC Government of cattle die-offs in the Bondo territory which borders the Central African Republic.			
Where was the first reported case? What	Since the first cases v	were reported fro	om the village of	Baya
is/was the extent of geographic spread?	chiefdom, the outbre	ak appears to h	ave spread to Gu	amangi, Sao,
Include comments on the apparent speed of spread.	Deni, and Goa in the	Bondo territory	with similar sym _l	otoms.
Has the country requested support from	Yes, on 17 Novemb			
PREDICT (include date of request)?	laboratory at INRB		5.5	
	with PREDICT proto	ocols the 11 blo	od samples rece	eived from
If so which government against	the field.	alth through th	a INDD which is	the pational
If so, which government agency	The Ministry of Hed	-		tne national
requested PREDICT support? When was PREDICT response initiated	reference public he 20 November 2017			
(date)?	20 November 2017			
Are other EPT partners involved in the response (which ones and how)?	Yes, the FAO-ECTAL	D project.		
What type of assistance did PREDICT	PREDICT CC contac	ted the head of	the Central Ve	terinary
initially provide? Which PREDICT	Laboratory of Kinsh	nasa (LABOVET,	and the FAO-E	CTAD team
personnel were involved?	to coordinate with the INRB a plan for testing the samples			
	that were received			
	PREDICT office on 2			
	LABOVET, FAO-ECT		-	
	and Production. PR	_		75 (15)
	specimens for the pri	iority virus famili	es following PRE	DICT
When was the first official	protocols. The first official ack	knowledgemen	t was on 15 Oct	oher 2017
acknowledgement of the outbreak (by	by the Bas-Uele Pro			
which government agency or other	Livestock.	ovinciai iviiiiisti	y oj Agriculture,	, Fishery und
reputable body and date)?	LIVESTOCK.			
When was a response initiated and by	An investigation te	am from the Pr	ovincial Ministr	ry of
whom? Which agencies were involved?	Agriculture was ser	100 miles		
Who was in charge of the national	support from the B	as-Uele provinc	ial Health Offic	e.













response?				
Was the cause of the outbreak confirmed by a laboratory? If so, give details of the initial confirmation (cause, species, specimen types tested and dates of testing if known).	Not yet.			
Where was the laboratory testing performed (name of laboratory)?	Specimens were received at the Virology laboratory of INRB on 7 November 2017, preliminary testing for PREDICT priority virus families is completed on 29 Nov 2017. All results were negative, see details below.			
Number of days between initiation of government response and lab confirmation of laboratory results.	pending			
Summary of the Outbreak or Event:	To be filled after	active outbreal	c or event activi	ty has ceased
·	To be filled after	active outbreal	c or event activi	ty has ceased
Summary of the Outbreak or Event:	To be filled after	active outbreal Suspected:	c or event activi	ty has ceased Deaths:
Summary of the Outbreak or Event: Working name of the outbreak:	Humans Domestic Animals Wild Animals			

PREDICT Outbreak or Health Event Response Daily Activities/Timeline

Working Title of Investigation: Cattle die-off in Bondo, Bas-Uele Province, DR Congo

Key Events:

Date	Day #	Notification or Action Taken
15 Oct 2017	-32	Alert of a cattle die-off was sent from the provincial Ministry of
		Agriculture, Fish and Livestock of Bas-Uele to the National Minister of
		Fishery and Livestock in Kinshasa DRC.
11/17/2017	1	PREDICT CC was informed by the head of the Virology laboratory at INRB
		that 11 blood specimens (whole blood in anticoagulant) from died and
		sick cattle from Bas-Uélé were received at INRB on 7 November 2017
		(Specimens were sent from Bas Uélé on the 6 November according to the
		official Ministry report).
11/20/2017	4	PREDICT CC contacted the head of the Central Veterinary Laboratory of













		Kinshasa, the National coordinator of the FAO-ECTAD team and the staff at INRB in charge for testing the specimens to coordinate actions on testing the specimens. It was decided that serology and PCR should be performed. A meeting will be held on 11/21/2017 to decide on sharing of specimens between the three laboratories (LABOVET, INRB and PREDICT). PREDICT CC contacted the Director of the "Centre de Surveillance de la Biodiversite" — CSB at the University of Kisangani to request for more information on the epidemiologic findings and data on the number of animals involved in the die-off. No information is available yet in Kisangani from the field.
11/21/2017	5	A meeting was held at the PREDICT office between the PREDICT team and the general administrator of the LABOVET, the national coordinator of the FAO-ECTAD team, one staff from the Ministry of Fishery and Livestock Direction of Animal Health and Productions. During this meeting: The veterinarians said they are suspecting contagious bovine pleuropneumonia (CBPP). It was proposed that LABOVET should consider Serology and PCR for Mycoplasma in the testing plan. LABOVET indicated that they do not have reagents for testing and requested support from FAO, but the FAO-ECTAD is not sure as this is not a zoonosis and their project will support only outbreaks involving the five priority pathogens for DRC. However they mentioned that the request will be sent forward to FAO officials for a decision. In preparation for that assistance LABOVET will prepare a list of reagents needed and the quantities. As approved, PREDICT will test samples for PREDICT priority viral families (filovirus, coronavirus, paramyxovirus, flavivirus, and influenza viruses). Ministers of Agriculture and Fishery and Livestock will visit the LABOVET facility tomorrow. In an unrelated health event in a different region of the country, it was mentioned at the meeting that LABOVET received today 3 carcasses of cattle from Bankana on the "Plateau des Bateke" (Eastern Kinshasa) for necropsy, lesions were suggestive of Anthrax.
11/29/2017	13	- The Bas Uele provincial Ministry of Agriculture has advised that













 the situation is getting worse and the disease is spreading rapidly. They have indicated that about 2150 more cattle have died bringing the current mortality to about 4150 cattle. The disease has been spreading from the Baya chiefdom to Guamangi, Sao, Deni, and Goa in the Bondo territory with similar symptoms; weight loss, diarrhea, swelling of knees, lung infection, in some cases on the naked tail, syphilitic or tubercular-like lesions resembling eschar.
- There have not been any treatment action initiated yet, other than quarantine of sick cattle and prohibitions on circulation of sick cattle as well as incineration of dead cattle by the local red cross agents. Additionally, any slaughter must be certified by a veterinarian.
 The PREDICT received 10 specimens from the INRB on Monday the 27/11/2017 not 11 as previously reported (one specimen was identified as duplicate). These specimens have been tested for PREDICT priority viral families (coronaviruses, paramyxoviruses, influenza viruses, flaviviruses, filoviruses, and additionally orthobunyaviruses). Preliminary results indicate that all 10 specimens were negative for all virus families tested. Reports indicate that FAO-DRC has not received approval from their headquarters to support investigations of this health event. The central veterinary laboratory (LABOVET) is unable to provide testing for possible Mycoplasma and other bacterial etiologies due to a lack of specific reagents.
reagents.













In-Country Government Outbreak or Health Event Points of Contact

Public Health ministry or department:		
Name:	Benoit Kebela Ilunga	
Email:	REDACTED	
Mobile Phone:		

Livestock ministry or department:		
Name:	Leopold Mulumba	
Email:	REDACTED	
Mobile Phone:	REDACTED	

Wildlife/Environment ministry or department:		
Name:	Jeff Mapilanga	
Email:	REDACTED	
Mobile Phone:		

OIE focal point:	
Name:	Honore N'Lemba Mabela
Email:	REDACTED
Mobile Phone:	NEDACTED

IHR focal point:		
Name:	Theophile Bokenge	
Email:	REDACTED	
Mobile Phone:		

FAO:	
Name:	Philippe Kone
Email:	REDACTED
Mobile Phone:	NEDACTED

WHO:	
Name:	Ernest Dabire
Email:	REDACTED
Mobile Phone:	

EPT ONE HEALTH WORKFORCE Project:	
Name:	Diafuka Saila Ngita
Email:	<u>Diafuka.saila</u> ngita@tufts.edu
Mobile Phone:	REDACTED













EPT PREPAREDNESS and RESPONSE Project:		
Name:		
Email:		
Mobile Phone:		
Other Important C	Contacts:	
Organization:		
Name:		
Email:		
Mobile Phone:		
Organization:		
Name:		
Email:		
Mobile Phone:		
0		
Organization:		
Name: Email:		
14 N. J. C. S. C.		
Mobile Phone:		
Organization:		
Name:		
Email:		
Mobile Phone:		
Organization:		
Name:		
Email:		
Mobile Phone:		











From: "Katherine Leasure" <kaleasure@ucdavis.edu>

Sent: 01/05/2018 2:36:46 PM (-08:00)

To: "'David J Wolking'" <djwolking@ucdavis.edu>; "'Jonna Mazet'" <jkmazet@ucdavis.edu>

Cc: "'William B. Karesh'" <karesh@ecohealthalliance.org>

Subject: RE: FAO presentation in Brussels

Attachments: PREDICT 2018 Brussels All Country Meeting Agenda_revised.docx

Hi Jonna and David,

Updated version attached with a couple of additional edits.

Thanks, Katie

From: David J Wolking [mailto:djwolking@ucdavis.edu]

Sent: Friday, January 05, 2018 1:52 PM **To:** Katherine Leasure; Jonna Mazet

Cc: William B. Karesh

Subject: Re: FAO presentation in Brussels

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Revised agenda here with time now for Andrew and Subhash. I took the FAO 15 mins out of the panel since that is more flexible and now we may only have 3 panelists due to pending visa issues.

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David

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I'll tell them to be prepared for any day.

Thanks !!

BK

William B. Karesh, D.V.M

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EPT Partners Liaison, USAID Emerging Pandemic Threats - PREDICT-2 Program

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Can you let them know, and we'll adjust the agenda and print to hand out?

Thanks,

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Begin forwarded message:

From: "Morzaria, Subhash (TCE)" < REDACTED >

Subject: RE: Data Meeting in Brussels, Date: January 4, 2018 at 10:02:24 AM EST

To: "William B. Karesh" < karesh@ecohealthalliance.org>

Cc: "Claes, Filip (FAORAP)" < REDACTED >, "VonDobschuetz, Sophie (AGAH)" < REDACTED >, 'Amanda Andre' < amanda.andre@ecohealthalliance.org>

Dear Billy,

My message to you crossed the e/m that I received from USDavies with details of the agenda.

The agenda does not indicate any presentation from partners, including FAO. Can you please let us know how you would like FAO to make inputs in the discussions? This would help us better prepare for the meeting.

Look forward to catching up with you all next week.

Best,

Subhash





PREDICT All-Country Meeting Radisson Blu – Brussels Rue du Fossé aux Loups 47, 1000 Bruxelles, Belgium January 9-11, 2018

Agenda

Day 1 - January 9 (EU Officials in the afternoon session)

Morning Session: Royal A (UC Davis), Royal B (EHA), Stockholm Boardroom

(Metabiota), Copenhagen Boardroom (WCS)

9:00 am Breakouts by Global Partner (internal PREDICT Consortium partners

only)

12:00 pm Lunch on Own

Afternoon Session: Royal Ballroom

2:00 pm Welcome (Andrew Clements & Jonna Mazet)

2:05 pm USAID Emerging Pandemic Threat and GHSA Activities Overview

(Andrew Clements)

2:25 pm PREDICT Overview & Orientation to Meeting (Jonna Mazet)

3:00 pm FAO Emerging Pandemic Threats Overview (Subhash Morzaria)

3:15 pm Progress Toward Forecasting EID Events: Modeling & Analytics

(Peter Daszak)

3:45 pm Status of PREDICT Surveillance & Path Toward Success (Christine

Johnson)

4:15 pm Strengthening One Health Networks (William Karesh)

4:45 pm PREDICT in Action Panel (moderator David Wolking) with representatives

from East Africa, West Africa, South Asia, and Southeast Asia (Prof. Rudovick Kazwala, Prof. Aiah Gbakima, Dr. Arif Islam, Dr. Joko

Pamungkas)

5:30 pm Welcome Reception

Day 2 - January 10: Royal Ballroom (Breakout Room: Copenhagen Boardroom)

9:00 am EIDITH Structural Overview & Orientation to Pull-outs (Tammie

O'Rourke)

9:45 am Viral Detection & Discovery (Tracey Goldstein & Simon Anthony)

10:45 am	Break		
11:15 am	Steps Toward Characterizing Risk (Overview of Workshop)		
12:15 pm	Poster Competition & Lunch		
1:30 pm	Risk Characterization Workshop (Christine Johnson & Kevin Olival)		
3:30 pm	End of Day 2 – Dinner on Own (Executive Board and External Advisors meeting 3:30-4:30 pm)		
Day 3 - January 11: Royal Ballroom (Breakout Room: Copenhagen Boardroom)			
9:00 am	OH Policy and Partnership Activities (Billy Karesh and Catherine Machalaba)		
9:45 am	Capacity Strengthening - Foundations to Futures (Woutrina Smith)		
10:30 am	Behavioral Risk Intervention Development (Leilani Francisco)		
12:00 pm	Lunch		
1:00 pm	Using Data and Modeling for Interventions and Policy (Peter Daszak, Kevin Olival, and Leilani Francisco)		
2:00 pm	Assisting Governments with Outbreaks (Brian Bird and James Ayukekbong)		
3:00 pm	Break		
3:15 pm	Feedback for Team from External Advisors & USAID (Billy Karesh)		
4:00 pm	Final Report Planning Session (David Wolking)		
4:30 pm	Planning for Successful Project Completion (Jonna Mazet)		
7:00 pm	Team Dinner at La Manufacture with PREDICT Staff, Advisors, & USAID Management Address: Rue Notre-Dame-du-Sommeil 12, 1000 Bruxelles, Belgium		











From: "William B. Karesh" <karesh@ecohealthalliance.org>

Sent: 01/05/2018 2:43:30 PM (-08:00)

To:"Katherine Leasure" <kaleasure@ucdavis.edu>; "David Wolking" <djwolking@ucdavis.edu>;

"Jonna Mazet" < jkmazet@ucdavis.edu>

Subject: Re: FAO presentation in Brussels

Thanks. If you are not going to print until you get to Brussels, think about moving FAO to day 3. We have some important guests on Day 1 and I'm not sure we need to highlight FAO's work in front of them. It's not terribly important either way, but just a consideration.

Thanks for the consideration.

BK

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Cc: William B. Karesh

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<PREDICT 2018 Brussels All Country Meeting Agenda_revised.docx>

From: REDACTED

Sent: 02/12/2018 9:28:44 AM (-08:00)

Cc: "Catherine Machalaba" <machalaba@ecohealthalliance.org>; "William B. Karesh"

<karesh@ecohealthalliance.org>; "Jonna Mazet" <jkmazet@ucdavis.edu>
Subject: PPE Guidance & Feb 8th surveillance call notes

Attachments: 2.8.2018 surveillance call notes.docx

Hi Surveillance Team,

Please find attached notes from our last call, including PPE guidance discussed on the call below and in the notes.

Action Items and Reminders for next call:

- 1. Please distribute PPE guidance below to your teams & ensure appropriate PPE is used for sampling activities.

 PPE guidance: Tyvek or Tychem-type suits are required for ALL sampling activities that involve direct contact with live wild animals and/or situations where contact with any fluids or excreta from live wild animals could soil clothing (e.g., caves, roosts). If there is risk of being bitten or scratched by a live wild animal, other protective gear should be employed as appropriate, such as heavy gloves (sterilizable) or long-sleeve clothing and pants worn underneath Tyvek or Tychem-type suits. As always, field teams should take necessary precautions to avoid additional routes of exposure by wearing eye protection, fitted respirator (N95 or P100), and nitrile gloves.
 - **There will be a follow up discussion on PPE next week on Capacity Team call (Friday, February 16th @ 9am PT/12pm ET)**
- 2. Asia country updates on next call; field and lab activities updates, GHSA highlights, zoonotic disease prioritization workshops, update on data entry and any hurdles/concerns.

Thank you,

REDACTED

REDACTED

Research Associate
Emerging Pandemic Threats PREDICT Project
EpiCenter for Disease Dynamics
One Health Institute
UC Davis School of Veterinary Medicine



Feb 8th, 2018 Surveillance Team Call

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Participants: Ava Sullivan, Patrick Dawson, Emily Hagan, Allison White, Leilani Francisco, Stephanie Martinez, Noam Ross, Anne Laudisoit, Emma Lane, Mindy Rostal, Jon Epstein, Leti Gutierriez, Dave McIver, Daniel O'Rourke, Matt LeBreton, Jim Ayukekbong, Sarah Olson, Dawn Zimmerman, Marc Valitutto, David Wolking, Kirsten Gilardi, REDACTED Brian Bird, Jenny Lane, Terra Kelly, Marcy Uhart, Woutrina Smith, Jaber Belkhiria, Tracey Goldstein, Christine K Johnson

PPE guidance

- Appropriate PPE was discussed at length on last surveillance call and EB call. On the EB call
 yesterday, it was decided that Tyvek-type protection is needed for handling of live wild animals to
 ensure that skin and clothing are not contaminated during field activities and that we set an
 example for best practices while working.
- Current guidelines Tyvek or Tychem-type suits are required for ALL sampling activities that
 involve direct contact with live wild animals and/or situations where contact with any fluids or
 excreta from live wild animals could soil clothing (e.g., caves, roosts). If there is risk of being
 bitten or scratched by a live wild animal, other protective gear should be employed as
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 underneath Tyvek or Tychem-type suits. As always, field teams should take necessary precautions
 to avoid additional routes of exposure by wearing eye protection, fitted respirator (N95 or P100),
 and nitrile gloves.
- Global leads should communicate this guidance is in effect at all times. If Tyvek-type suits are not available in country, teams should hold off on field activities that would fit under this guidance until Tyvek-type suits are secured.
- Standard procedures described in our e-book will be updated accordingly. The Capacity Team will have a follow up discussion at their next conference call Friday Feb 16th at 9am PT/12pm ET.

Concurrent site labels for risk characterization, country maps, etc.

• Global leads, please check concurrent site labels in EIDITH and work with IM team if updates to labels are needed. Once everyone has updated their sites, we can start working on versions 2.0 of

Risk Characterization and Modeling & Analytics team's country maps. Find your sites here: https://project.eidith.org/UploadedData/SiteCharacterization.aspx

Camel exposure & work modules

• The team in Jordan created two new modules to focus on MERS-related symptoms and medical history, as well as different type of exposures, behavioral practices, and perceptions associated with camels. The additional module captures knowledge, attitudes, and beliefs for human behaviors to get at potential interventions. The module is available for other countries to use, but will require local IRB approval.

Approaches to field species identification

- Not unexpectedly, some teams are having difficulties identifying species in the field, especially bats and rodents. There was good discussion on how we do not expect our teams to become species identification experts, but in general a good approach is to link with specialists to come to the field with our teams for training. Other potential resources are listed below and are attached to these notes (Thanks Matt!!):
 - Rodents of sub-Saharan Africa, good keys, average photos, and lots of data https://www.degruyter.com/view/product/186317
 - Mammals of the World, 2 volumes on rodents, volumes on bats not out yet. https://www.lynxeds.com/catalog/hmw
 - Bats of Central and Southern Africa reasonably close to species as possible. http://witspress.co.za/catalogue/bats-of-southern-and-central-africa/ and https://www.bookdepository.com/Bats-Southern-Central-Africa-Ara-Monadjem/9781868145089
 - o African Chiroptera Report http://www.africanbats.org/Documents/ACR/2016/ACR 2016.pdf
 - Series of papers in Beaufortia by Bergmans (fruit bats)
 https://scholar.google.com/scholar?hl=en&as-sdt=0%2C5&q=beaufortia+bergmans+%22
 taxonomy+and+biogeography%22&btnG
 - Fahr -- includes checklists and systematic notes (insectivorous bats)
 https://scholar.google.com/scholar?hl=en&as-sdt=0%2C5&q=fahr+bats+checklist&btnG
- Q: How much barcoding has been done to compare field IDs to laboratory identified species ID?
 - o Not much barcoding data is available for comparison just yet. Another idea could be to barcode some samples from established reference collections so that we have something to compare to. We'll revisit this on subsequent calls to share knowledge on how species identification data are being updated by bar coding data.

Africa country updates; field and lab activities updates, GHSA highlights, zoonotic disease prioritization workshops, update on data entry and any hurdles/concerns.

Egypt –Y4 completed 3 sampling trips for bats and humans. All field and surveillance data in EIDITH, completed 3 human sampling trips. Uploaded viral sequences for first time.

Jordan – Pausing surveillance until IRB approved from UCD for extra behavioral work around people with camel exposure. Uploaded viral sequence data for first time.

Ethiopia – Will be back in field soon, trying to launch human surveillance by March.

Kenya – All oral specimens have been tested, positives cloned for sequencing.

Tanzania – Team joining P&R meeting in Feb 2018. Adding new clinic now that USAID approved starting surveillance in March.

Uganda – There was slowdown waiting for sub-awards, now back on track sampling humans and wildlife.

Rwanda – Sequences starting to be uploaded into EIDITH.

Eastern DRC –Will resume field sampling in new year.

DRC – Almost hit sample target for rodents and bats and bushmeat rainy season of Y4. Hospital surveillance going well too.

RoC – current focus in RoC is on human behavioral activities in bushmeat markets around Brazzaville; completed 12 human questionnaires and 50 ethnographic interviews in bushmeat markets and are in the process of uploading this data into EIDITH. Planning to conduct a focus group around bushmeat in an island partway between Brazzaville and DRC. Working with MB to compile surveys and start entering into EIDITH. Animal sampling is still being considered.

Cameroon – Following up on health event on cluster of cases, 3 deaths who had fever, headache, rash, hemorrhagic conditions, which preliminary results point to bacterial meningitis. Obtained target for rodents and bats this season.

Guinea – IRB approved for behavioral studies. PCR machine has been repaired so testing should resume soon. Early February — planning refresher training & starting sampling — still progressing with first sample shipment. 2 sampling teams alternating, 106 animals last trip. Sent first samples from Guinea to UCD.

Sierra Leone —In last 6 weeks, 929 animals, of those mostly bats. Community sensitization ongoing. March 7th election likely to affect some sites. Tested 65 specimens, getting up to speed.

Cote d'Ivoire –Planning 2 field trips this year.

Liberia – Field team will continue bat and rodent sampling. IRB approved for behavior work.

Senegal –Human sampling ongoing, lab testing started again.

Ghana – Wildlife team will sample in March 2018, human enrollment ongoing in 2 sites, testing ongoing for wildlife samples. Human testing beginning next month.

From: "Peter Daszak" <daszak@ecohealthalliance.org>

Sent: 02/18/2018 4:16:29 PM (-08:00)

To: "Espinal, Dr. Marcos (WDC)" <espinalm@paho.org>; "Shah, Cecilia" <cshah@nas.edu>

Cc: "Ogawa, V. Ayano" <VOgawa@nas.edu>; "Tran, Thu Anh" <TTran@nas.edu>; "Beth Cameron" <cameron@nti.org>; "Dean.Jamison@ucsf.edu" <Dean.Jamison@ucsf.edu>; "djamison@uw.edu" <djamison@uw.edu>; "Jennifer Gardy" <Jennifer.gardy@bccdc.ca>; "jkmazet@ucdavis.edu" <jkmazet@ucdavis.edu>; "'Joshua Michaud'" <JoshuaM@kff.org>; "mchawla@worldbank.org" <mchawla@worldbank.org>; "'Peter Sands'" < REDACTED >; "Taylor, Jami [GCSOUS]" <jtaylo19@its.jnj.com>; "tgevans@worldbank.org" <tgevans@worldbank.org>; "Thomas

Inglesby" <tinglesby@jhu.edu>; "Timothy Burgess" <timothy.burgess@usuhs.edu>

Subject: RE: Please provide feedback by Friday, Feb 16

Attachments: 3. FMT Economics Workshop DRAFT Agenda 2.16.18 Espinal Daszak.doc

Great call and I'm really looking forward to seeing how this shapes up. I've added my comments to the version from Marcos.

Cheers,

Peter

Peter Daszak

President

EcoHealth Alliance 460 West 34th Street – 17th Floor New York, NY 10001

Tel. +1 212-380-4473

www.ecohealthalliance.org

EcoHealth Alliance leads cutting-edge research into the critical connections between human and wildlife health and delicate ecosystems. With this science we develop solutions that prevent pandemics and promote conservation.

From: Espinal, Dr. Marcos (WDC) [mailto:espinalm@paho.org]

Sent: Friday, February 16, 2018 12:35 PM

To: Shah, Cecilia

Cc: Ogawa, V. Ayano; Tran, Thu Anh; Beth Cameron; Dean.Jamison@ucsf.edu; djamison@uw.edu; Jennifer Gardy; jkmazet@ucdavis.edu; 'Joshua Michaud'; mchawla@worldbank.org; Peter Daszak; 'Peter Sands'; Taylor, Jami [GCSOUS];

tgevans@worldbank.org; Thomas Inglesby; Timothy Burgess **Subject:** RE: Please provide feedback by Friday, Feb 16

Dear Ceci:

Some suggestions included in the attachment. I hope they help.

Best

Marcos A. Espinal, MD, DrPH, MPH
Director
Department of Communicable Diseases
and Environmental Determinants of Health (CDE)
Pan American Health Organization
World Health Organization
525 23rd St, N.W.

Washington DC 20037 Telephone: 202-974-3850

Fax: 202-974-3632





From: Shah, Cecilia [mailto:cshah@nas.edu]
Sent: Wednesday, February 14, 2018 9:29 PM

To: Beth Cameron; Dean.Jamison@ucsf.edu; djamison@uw.edu; Espinal, Dr. Marcos (WDC); Jennifer Gardy;

jkmazet@ucdavis.edu; 'Joshua Michaud'; mchawla@worldbank.org; Peter Daszak; 'Peter Sands'; Taylor, Jami [GCSOUS];

tgevans@worldbank.org; Thomas Inglesby; Timothy Burgess

Cc: Ogawa, V. Ayano; Tran, Thu Anh

Subject: Please provide feedback by Friday, Feb 16

Dear Planning Committee Members,

Thanks so much for a very productive first call. This is a kind reminder to please submit your feedback on the draft agenda attached by this Friday, February 16th.

Best,

Cecilia Mundaca Shah, MD, DrPH
Director, Forum on Microbial Threats
Board on Global Health
Health and Medicine Division | Find us at national academies.org/HMD
The National Academies of Sciences, Engineering, and Medicine
500 Fifth Street, NW
Washington, DC 20001

Phone: 202 334 2622 E-mail: cshah@nas.edu

From: Shah, Cecilia

Sent: Monday, February 12, 2018 10:33 AM

To: Beth Cameron; Dean.Jamison@ucsf.edu; djamison@uw.edu; Espinal, Dr. Marcos (WDC); Jennifer Gardy; Jennifer Gardy; <a href="mailto:Jennifer Gard

Cc: Ogawa, V. Ayano; Tran, Thu Anh

Subject: FIRST PLANNING CALL - Forum on Microbial Threats Workshop

Dear Planning Committee Members,

We are looking forward to our first planning call tomorrow <u>Tuesday, February 13 from 10:00 – 11:30 AM (ET)</u>. In preparation for the call, please see attached 4 documents:

- 1. First Call Agenda
- 2. Planning Committee Roster and Bios
- 3. Draft Workshop Agenda
- 4. Resources List

As you can see in the agenda for the call, after the conflict of interest discussion (which is mandatory to confirm your appointments to this planning committee), we will discuss the workshop objectives, themes, and proposed sessions. We have prepared a **first draft workshop agenda** that we would like to use as a starting point for the discussion. **Please note that throughout this document, we offer suggestions for presentations and speakers in bubble comments.** We would very much appreciate if you can take a look at this first draft before the call.

The dial-in information is in the calendar invitation Anh sent and also below:

Toll Free Number: REDACTED
International Number: REDACTED
Participant Passcode: REDACTED

Looking forward to talking to you tomorrow.

Best,

Cecilia Mundaca Shah, MD, DrPH

Director, Forum on Microbial Threats
Board on Global Health
Health and Medicine Division | Find us at <u>nationalacademies.org/HMD</u>
The National Academies of Sciences, Engineering, and Medicine
500 Fifth Street, NW
Washington, DC 20001

Phone: 202 334 2622 E-mail: cshah@nas.edu

The National Academies of

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The National Academies of SCIENCES • ENGINEERING • MEDICINE

Understanding the Economics of Microbial Threats – A Workshop

Agenda **JUNE 12-13, 2018**

The National Academies Keck Building 500 Fifth Street NW - Room 100 Washington, DC 20001

Abbreviated Statement of Task:

This 1.5 day public workshop will examine the interaction of economic activity and microbial threats, including infectious disease outbreaks and antimicrobial resistance. A critical focus of the workshop will be to discuss the need for key metrics of risk and analytical tools to provide a comprehensive understanding of the economic risk that microbial threats pose. The workshop will also focus on exploring approaches to incorporate estimates of infectious disease risk to overall macroeconomic assessments of economic growth in countries to incentivize action that minimize these threats. Specifically, this workshop will feature invited presentations and discussions on topics including:

- Economic costs from infectious diseases that may place a disproportionate burden on low- and middle-income countries but impact regional and global stability due to interconnected financial systems worldwide.
- Gaps in assessing economic costs of microbial threats through multiple channels of disruption, including dynamics of fear-based behavioral change.
- Critical opportunities and challenges to model and develop metrics of risk, including identifying and using
 appropriate data and dealing with uncertainty, and to build analytical tools to understand the potential economic
 consequences of infectious diseases on the short, medium, and long term.
- Strategies to incorporate estimates of infectious disease risk to overall macroeconomic assessments of economic growth to ensure the risks are reflected in financial markets and business investment decisions or influence flows of development assistance, and to link these assessments to incentives for action to minimize the threats.
- Implications for the International Health Regulations, particularly on trade and travel measures, as well as for upstream and downstream strategies, policies, and interventions—such as effective communication messages, simulation exercises, investment decisions, and One Health approaches—that various sectors of government, multilateral institutions, and others may carry out in preventing and mitigating the economic costs.
- Collaboration and coordination mechanisms among various stakeholders and across sectors in public health, animal health, economics, travel, trade, commerce, agriculture, among others.

Workshop speakers and discussants will contribute perspectives from government, academia, private, and nonprofit sectors.

DAY 1 – TUESDAY, June 12, 2018

11:00 am ET Welcome Remarks

PETER DASZAK, Chair of the Forum on Microbial Threats

President

EcoHealth Alliance

Opening Remarks

VICTOR DZAU

President

National Academy of Medicine

Keynote

SPEAKER

Affiliation

Workshop Overview and Goals

PETER SANDS, Workshop Chair

Executive Director

The Global Fund to Fight AIDS, Tuberculosis, and Malaria

12:00 pm Lunch Break

Session I: The Economic Cost of Microbial Threats

1:00 pm Understanding the Risk of Microbial Threats from an Economic Perspective

SPEAKER Affiliation

1:20 pm Part A: The Economic Risk of Endemic Infectious Diseases

Objectives:

- Present the economic costs from endemic infectious diseases that may place a disproportionate burden on low- and middle-income countries but impact regional and global stability due to interconnected financial systems worldwide.
- Discuss gaps in assessing costs of endemic microbial threats through multiple channels of disruption.

Moderator: TBD

[INSERT PRESENTATIONS]

2:00 pm Part B: Economics and Modeling the Risk of Emerging Infectious Diseases Objectives:

- Discuss critical opportunities and challenges to model and develop metrics of risk, including the use of appropriate data and the management of uncertainty.
- Examine ways to develop and use analytical tools to understand the potential economic consequences of infectious disease outbreaks on the short, medium, and long term.

Moderator: TBD

[INSERT PRESENTATIONS]

3:00 pm Break

3:20 pm Part C: The Cost of Antimicrobial Resistance

Objectives:

- Present current models to estimate the cost of antimicrobial resistance and the scenarios considered.
- Discuss the limitations and challenges in setting the parameters and assumptions to calculate the cost of antimicrobial resistance.

Moderator: TBD

[INSERT PRESENTATIONS]

4:15 pm Part D: Economic Implications of Biosecurity Threats

Objectives:

- Review efforts to understand and quantify the economic impact of biosecurity threats.
- Discuss shared elements and differences with other microbial threats when estimating the cost of a biosecurity attack.

Moderator: TBD

[INSERT PRESENTATIONS]

5:25 pm Wrap-up

PETER SANDS, Workshop Chair

Executive Director

The Global Fund to Fight AIDS, Tuberculosis, and Malaria

5:30pm Adjourn

5:35pm Reception

DAY 2 – WEDNESDAY, June 13, 2018

8:30 am ET Welcome

PETER SANDS, Workshop Chair

Executive Director

The Global Fund to Fight AIDS, Tuberculosis, and Malaria

Keynote to define what we mean by preparedness and describe current state? 8:35 am

SPEAKER Affiliation

Session II: The Economic Cost of Preparedness for Microbial Threats

8:55 am Part A: National Preparedness

Objectives:

- Discuss implications for the International Health Regulations and Performance of Veterinary Services Pathway, particularly on trade and travel measures, as well as for upstream and downstream strategies, policies, and interventions—such as effective communication messages, simulation exercises, investment decisions, and One Health approaches—that various sectors of government, multilateral institutions, and others may carry out in preventing and mitigating the economic costs.
- Examine strategies to incorporate estimates of infectious disease risk to overall macroeconomic assessments of economic growth to ensure the risks are reflected in financial markets and business investment decisions or influence flows of development assistance, and to link these assessments to incentives for action to minimize the threats.

Moderator: TBD

[INSERT PRESENTATIONS]

10:15 am Break

10:30 am Part B: Accelerating Research and Development of Medical Products Objectives:

- Present on the opportunities and barriers to discover and develop medical products to prevent and treat infectious diseases.
- Examine the role of the private sector and public and private partnerships in the creation of research and development incentives.

Moderator: TBD

[INSERT PRESENTATIONS]

12:30 pm **Lunch**

1:30 pm Part C: Investing in Preparedness – What governance mechanisms and collaboration strategies do we need?

Objectives:

- Explore collaboration and coordination mechanisms among various stakeholders and across sectors in public health, animal health, economics, travel, trade, commerce, agriculture, among others.
- Discuss potential strategies and governance mechanisms to encourage investment on the discovery and development of medical products to address infectious diseases and antimicrobial resistance.

Moderator: TBD

[INSERT PRESENTATIONS]

3:15 pm **Closing Remarks**

PETER SANDS, Workshop Chair Professor of Medicine and Public Health Emory University

PETER DASZAK, Chair of the Forum on Microbial Threats

President

EcoHealth Alliance

3:30 pm **Adjourn**

From: "William B. Karesh" < karesh@ecohealthalliance.org>

Sent: 04/04/2018 10:24:44 AM (-07:00) **To:** "Jonna Mazet" <jkmazet@ucdavis.edu>

Subject: Re: USAID and Salonga National Park, DRC (UNCLASSIFIED)

Anne's been sampling animals for Ebola and monkeypox in DRC recently and will know specific locations and the situation in Salonga. Let me get some details from here and will get back to you. There's a long-term bonobo research site there and I know some folks that work there. It is remote, and generally safe because the communities are really small and isolated.

BK

William B. Karesh, D.V.M

Executive Vice President for Health and Policy

EcoHealth Alliance 460 West 34th Street - 17th Floor New York, NY 10001 USA

+1.212.380.4463 (direct) +1.212.380.4465 (fax) www.ecohealthalliance.org

President, OIE Working Group on Wildlife

Co-chair, IUCN Species Survival Commission - Wildlife Health Specialist Group

EPT Partners Liaison, USAID Emerging Pandemic Threats - PREDICT-2 Program

EcoHealth Alliance leads cutting-edge research into the critical connections between human and wildlife health and delicate ecosystems. With this science we develop solutions that promote conservation and prevent pandemics.

On Apr 4, 2018, at 12:53 PM, Jonna Mazet < jkmazet@ucdavis.edu> wrote:

----- Forwarded message -----

From: Andrew Clements < aclements@usaid.gov >

Date: Thu, Mar 29, 2018 at 11:08 AM

Subject: Fwd: USAID and Salonga National Park, DRC (UNCLASSIFIED)

To: Jonna Mazet < jkmazet@ucdavis.edu>, ksaylors@metabiota.com

Cc: djwolking@ucdavis.edu, predictmgt@usaid.gov

Jonna/Karen,

See request from DOD for input on designing its work in DRC. Please let me know if you have information to share.

Thanks!

Andrew

Andrew P. Clements, Ph.D.
Senior Scientific Advisor
Emerging Threats Division/Office of

Emerging Threats Division/Office of Infectious Diseases/Bureau for Global Health

U.S. Agency for International Development

Mobile phone: 1-571-345-4253 Email: <u>aclements@usaid.gov</u>

Begin forwarded message:

From: Kendra Chittenden < kchittenden@usaid.gov >

Date: March 29, 2018 at 4:51:56 PM GMT+2 **To:** Judith Almodovar <<u>jalmodovar@usaid.gov</u>>

Cc: "Miller, Mary E LTC USARMY MEDCOM USAMRIID (US)"

<mary.e.miller138.mil@mail.mil>, Carla Komich <<u>ckomich@usaid.gov</u>>, Andrea

Long-Wagar <<u>alongwagar@usaid.gov</u>>, Sarah Paige <<u>spaige@usaid.gov</u>>,

PREDICTMGT < predictmgt@usaid.gov >

Subject: Re: USAID and Salonga National Park, DRC (UNCLASSIFIED)

Judith- thanks, I am including the PREDICT AOR team as well.

On Thu, Mar 29, 2018 at 10:49 AM, Judith Almodovar < <u>jalmodovar@usaid.gov</u>> wrote:

Dear Ms. Miller,

I have reached out to some of my colleagues and they have offered the following information on Salonga:

Salonga is a complicated landscape to work in as it is very remote and hard to access. In addition to the logistics, there have been some security issues over the years in certain parts of the landscape, but it is not nearly as insecure as the landscapes in the East.

They have also recommended that you reach out to Allard Blom of WWF (allard.blom@wwfus.org) who can offer additional information.

The USAID PREDICT program is still in place; however, the POC;s are currently out of the office. I have copied them to this response.

Best regards,

Judith

On Mon, Mar 26, 2018 at 4:02 PM, Miller, Mary E LTC USARMY MEDCOM USAMRIID (US) mary.e.miller138.mil@mail.mil wrote:

CLASSIFICATION: UNCLASSIFIED

Hello Ms. Almodovar,

I work at the US Army's Research Institute of Infectious Diseases (USAMRIID) in Fort Detrick, MD, and study Ebola virus.

We are looking for stable sites in DRC that can support field work (non-lethal sample collection from small mammals), and collaborative research opportunities with US and host nation partners.

Salonga National Park, in Equateur province, would be ideal for the work due to the frequent and recent outbreaks surrounding the park, and USAID and INRB would be optimal partners.

We understand that Salonga is a remote site with limited infrastructure and resources, but would like to discuss ways to overcome these obstacles due to site's scientific importance.

Also, within the past few weeks, the US Embassy Kinshasa dropped DRC's security rating from 2 to 3.

It seems that Equateur province is still stable, and has not experienced the civil unrest seen in South Kivu, North Kivu, Ituri, and Kasai provinces.

Do you know if USAID is still working in Salonga, and if they still maintain collaborations with INRB through their PREDICT program?

On 2 April, we have a meeting with potential funders for our proposed project. Unfortunately, Ms. Komich will be out of the office until then. Could you please assist?

Thank you.

Very Respectfully, Mary

Mary E. Miller, PhD

LTC, MS

Deputy Chief, Division of Medicine

United States Army Research Institute of Infectious Diseases (USAMRIID) Fort Detrick, MD

Phone: <u>301-619-4832</u>

Email: mary.e.miller138.mil@mail.mil CLASSIFICATION: UNCLASSIFIED

Judith Almodovar

Rwanda Country Development Officer

jalmodovar@usaid.gov

(202) 712-0283

--

Kendra Chittenden, Ph.D. | Senior Infectious Disease Advisor| USAID | mobile (703-209-5424) |KChittenden@usaid.gov

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From: "William B. Karesh" <karesh@ecohealthalliance.org>

Sent: 04/04/2018 2:16:44 PM (-07:00)

To: "Jonna Mazet" <jkmazet@ucdavis.edu>; "Miller, Mary E LTC USARMY MEDCOM USAMRIID (US)"

<mary.e.miller138.mil@mail.mil>

Cc: "Anne Laudisoit" < laudisoit@ecohealthalliance.org>

Subject: Re: USAID and Salonga National Park, DRC (UNCLASSIFIED)

Hi Jonna,

Anne and I got on the phone with Mary Miller (copied here) to get to the key questions a bit more quickly. She had two main avenues of exploring for Ebola studies, one is doing field work in Salonga National Park and the logistics around that. We suggested that she explore the new park just north of Silonga since there is a well established biodiversity study operation there with the Harts, as an alternative but still close to her geographic target. And, logistics available for getting samples to Kin.

Her second area of interest is piggy-backing on work being done at INRB by others such as PREDICT or other groups to take advantage of existing contractual mechanisms, i.e. transferring funds through USAID then PREDICT-2 to a subawardee for INRB to do the testing she wants.

For the second part, I suggested that she talk with you because I'm not sure where we are with the award ceiling, timing, sub-award approvals, etc. etc.

She has a meeting on Monday with a funding organization and is hoping to be able to present a clearer picture of her plans.

BK

William B. Karesh, D.V.M

Executive Vice President for Health and Policy

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To: Jonna Mazet < jkmazet@ucdavis.edu>, ksaylors@metabiota.com

Cc: djwolking@ucdavis.edu, predictmgt@usaid.gov

Jonna/Karen,

See request from DOD for input on designing its work in DRC. Please let me know if you have information to share.

Thanks!

Andrew

Andrew P. Clements, Ph.D.
Senior Scientific Advisor
Emerging Threats Division/Office of Infectious Diseases/Bureau for Global Health
U.S. Agency for International Development

Mobile phone: 1-571-345-4253 Email: <u>aclements@usaid.gov</u>

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Cc: "Miller, Mary E LTC USARMY MEDCOM USAMRIID (US)"

<mary.e.miller138.mil@mail.mil>, Carla Komich <<u>ckomich@usaid.gov</u>>, Andrea

Long-Wagar <alongwagar@usaid.gov>, Sarah Paige <spaige@usaid.gov>,

PREDICTMGT predictmgt@usaid.gov>

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Very Respectfully, Mary Mary E. Miller, PhD

LTC, MS

Deputy Chief, Division of Medicine

United States Army Research Institute of Infectious Diseases (USAMRIID) Fort

Detrick, MD

Phone: <u>301-619-4832</u>

Email: <u>mary.e.miller138.mil@mail.mil</u> CLASSIFICATION: UNCLASSIFIED

--

Judith Almodovar

Rwanda Country Development Officer

jalmodovar@usaid.gov

(202) 712-0283

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Kendra Chittenden, Ph.D. | Senior Infectious Disease Advisor| USAID | mobile (703-209-5424) | KChittenden@usaid.gov

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From: predict-outbreak-request@ucdavis.edu on behalf of "REDACTED

Sent: 05/23/2018 5:08:07 PM (-07:00)

To: "William B. Karesh" < karesh@ecohealthalliance.org>; "PREDICT-oubreak" < predict-

outbreak@ucdavis.edu>

Subject: [predict] [predict-outbreak] RE: Most Maps of the New Ebola Outbreak Are Wrong - The Atlantic

Thanks for sharing Billy, it's an interesting article. It sounds like we need better .shp files available online.



 $\textbf{From:} \ predict-outbreak-request@ucdavis.edu \ [mailto:predict-outbreak-request@ucdavis.edu] \ \textbf{On Behalf Of} \ William \ B.$

Karesh

Sent: Wednesday, May 23, 2018 2:47 PM

To: PREDICT-oubreak cdu>

Subject: [predict] [predict-outbreak] Fwd: Most Maps of the New Ebola Outbreak Are Wrong - The Atlantic

Interesting added twist, the health zone and town maps being used are not correct.

https://www.theatlantic.com/health/archive/2018/05/most-maps-of-the-new-ebola-outbreak-arewrong/560777/

Most Maps of the New Ebola Outbreak Are Wrong

Villages, and sometimes whole regions of the Congo, are misplaced—but the ministry of health and a team of cartographers are racing to get better data.

Ed Yong May 21, 2018

On Thursday, the World Health Organization released a map showing parts of the Democratic Republic of the Congo that are currently being affected by Ebola. The map showed four cases in Wangata, one of three "health zones" in the large city of Mbandaka. Wangata, according to the map, lies north of the main city, in a forested area on the other side of a river.

That is not where Wangata is.

#DRC #Ebola cases per Health Zone in Equateur province as of 15 May 2018 http://www.who.int/csr/don/17-may-2018-ebola-drc/en/...

— Peter Salama (@PeteSalama) 3:23 PM - May 17, 2018

"It's actually here, in the middle of Mbandaka city," says Cyrus Sinai, indicating a region about 8 miles farther south, on a screen that he shares with me over Skype.

Almost all the maps of the outbreak zone that have thus far been released contain mistakes of this kind. Different health organizations all seem to use their own maps, most of which contain significant discrepancies. Things are roughly in the right place, but their exact positions can be off by miles, as can the boundaries between different regions.

Sinai, a cartographer at UCLA, has been working with the Ministry of Health to improve the accuracy of the Congo's maps, and flew over on Saturday at their request. For each health zone within the outbreak region, Sinai compiled a list of the constituent villages, plotted them using the most up-to-date sources of geographical data, and drew boundaries that include these places and no others. The maps at the top of this piece show the before (left) and after (right) images.

Consider Bikoro, the health zone where the outbreak may have originated, and where most cases are found. Sinai took a list of all Bikoro's villages, plotted them using the most up-to-date sources of geographical data, and drew a boundary that includes these places and no others. This new shape is roughly similar to the one on current maps, but with critical differences. Notably, existing maps have the village of Ikoko Impenge—one of the epicenters of the outbreak—*outside* the Bikoro health zone, when it actually lies *within* the zone.

"These visualizations are important for communicating the reality on the ground to all levels of the health hierarchy, and to international partners who don't know the country," says Mathias Mossoko, the head of disease surveillance data in DRC.

"It's really important for the outbreak response to have real and accurate data," adds Bernice Selo, who leads the cartographic work from the Ministry of Health's command center in Kinshasa. "You need to know exactly where the villages are, where the health facilities are, where the transport routes and waterways are. All of this helps you understand where the outbreak is, where it's moving, how it's moving. You can see which villages have the highest risk."

To be clear, there's no evidence that these problems are hampering the response to the current outbreak. It's not like doctors are showing up in

the middle of the forest, wondering why they're in the wrong place. "Everyone on the ground knows where the health zones start and end," says Sinai. "I don't think this will make or break the response. But you surely want the most accurate data."

It feels unusual to *not* have this information readily at hand, especially in an era when digital maps are so omnipresent and so supposedly truthful. If you search for San Francisco on Google Maps, you can be pretty sure that what comes up is actually where San Francisco is. On Google Street View, you can even walk along a beach at the other end of the world.

But the Congo is a massive country—a quarter the size of the United States with considerably fewer resources. Until very recently, they haven't had the resources to get accurate geolocalized data. Instead, the boundaries of the health zones and their constituent "health areas," as well as the position of specific villages, towns, rivers, hospitals, clinics, and other landmarks, are often based on local knowledge and hand-drawn maps. Here's an example, which I saw when I visited the National Institute for Biomedical Research in March. It does the job, but it's clearly not to scale.

A hand-drawn map of the Yambuku health zone, where the first ever Ebola outbreak happened (Ed Yong)

Much of the Congo is also incredibly remote, and many villages have never been included on a digital map. Some were added based on information from the last census, which was done in 1984, using data points that often weren't actually collected on the ground. On Sinai's screen, he shows me three white dots that are meant to represent villages in Bikoro. "I know they're not accurate," he says, "because they're in the middle of a lake." There still isn't an accurate map showing where all the cases are coming from. "We need to see that, and to see where the *contacts* of the cases are," says Ousmane Ly, a digital health advisor at the nonprofit PATH, who was seconded to the Ministry of Health in February. "This information is very important for us to see the progress of the epidemic and for the ministry and cabinet members to make decisions."

Claire Halleux, a co-founder of OpenStreetMap DRC, has been helping, too. "Apart from the few main roads and rivers, even the emergency teams don't know about where all the roads are," she tells me. To fix that problem, she and other volunteers have <u>used satellite imagery</u> to mark the positions of buildings, rivers, waterways, roads, and other landmarks, creating a blank base map. People on the ground can then use smartphones or GPS receivers to label the map with accurate names.

"We have people basically mapping the area all day long," Halleux says. "If you were looking at this area two weeks ago, you'd have found very little data. Since then, more than 300,000 objects have been added." This afternoon, Selo is leading an emergency meeting of the Référentiel Géographique Commun—a working group of everyone in the DRC who uses geospatial data. Their goal is to "all agree on a standardized set of data that everyone uses," she tells me. Better maps should then be available to everyone working on the outbreak, but "these won't be the final boundaries," Selo says. "They're not static. There will always be improvements as more data comes in and more validation is done."

Sinai's work isn't confined to the current outbreak. When I met him in the Congo in March, he was three years into an effort to map several provinces, including Kwango, which is south of the current Ebola outbreak, and east of the capital of Kinshasa. He pulled up satellite images of villages and other settlements, which had been identified using machine-learning tools, and met with health-zone officials to label these correctly. "It's mapping local knowledge onto digital reality," he told me at the time.

In the office of Pierre Mwela Mangezi, the province's medical director, Sinai presented his latest digital map, holding it up next to an older, rougher version that was hanging on the wall, and a simpler, hand-drawn one that was pinned to the door. "I'm going to need a bigger wall," Mangezi joked.

The differences between the maps are subtle, but crucial. For example, some health areas that shared a border on the old maps no longer do on the new ones. "It's very important," Mangezi said. "This is the first time that we've had a map of all the health areas in the province. Every 3 weeks, we send people out to health centers, and the maps help with that. Sometimes when we do vaccinations, we forget certain villages, and the maps will help us remember."

Using the maps, Sinai and his colleagues are also doing a microcensus of the region, to predict how many people live in each settlement and so estimate the total population. That project, funded by the Bill and Melinda Gates Foundation, is especially important because the Congo hasn't done a formal census since 1984. All population figures since then are estimates, based on a 3 percent growth rate—and errors can make health work more difficult.

"Let's say you have a village with 500 kids, and your estimate is that there are 100," Sinai explained. "Someone could go and say: I vaccinated 100

people so I got 100 percent of them—and they didn't. Alternatively, if you think there are 400 kids and there are actually just 200, half your doses are wasted, and the records will say that coverage is at just 50 percent." To get better estimates, teams of Congolese surveyors traveled to over 500 randomly selected sites around Kinshasa and its neighboring provinces, and did population counts for each building. To do so, they often had to trudge through thick forests and wade across rivers. They were guided only by handheld tablets, following blue dots in otherwise featureless green terrain. "There's a face and a story behind every data point," Sinai said. "When I saw the data, I was like: How did these guys get there?" At the back of a shaded restaurant, in the town of Kenge, Sinai greeted a team of six surveyors, most of whom he hadn't seen for over a year. After the hugs and handshakes, he opened his laptop to show them the results of their efforts. He zoomed in on a cluster of white dots, each one a village. "These are the first time that any of these have been placed on a map, to our knowledge," he said.

A man named Mitterand pointed out two locations that seemed 20 kilometers apart, but actually involved a 70-kilometer round trip, the last third of which he did on foot. Many of the others expressed surprise that many places were more isolated than even they expected, and had little access to even rudimentary healthcare. Some hoped that health workers could now more easily find these remote settlements. They felt proud that they had literally put these places on the map.

"You can make it real," said Susa, one of the surveyors.



From: REDACTED on behalf of "Jonna Mazet" <jkmazet@ucdavis.edu>

Sent: 06/12/2018 8:12:07 AM (-07:00)

To: "William B. Karesh" <karesh@ecohealthalliance.org>

Subject: Re: EBO-SURSY Project Advisory Committee meeting Report

Nice -- thanks!

On Tue, Jun 12, 2018 at 6:14 AM, William B. Karesh < karesh@ecohealthalliance.org > wrote: Just FYI - report from the meeting in Paris that Karen attended. Nice thank you to PREDICT at the end.

BK

Begin forwarded message:

From: Sophie Muset REDACTED

Subject: EBO-SURSY Project Advisory Committee meeting Report

Date: June 12, 2018 at 5:28:03 AM EDT **To:** Sophie Muset **REDACTED**

Dear colleagues, dear partners,

I am pleased to send you the EBO-SURSY Project Advisory Committee meeting Report for your information.

This report aims to reflect the discussions held at the meeting organized in Paris on June 18th.

Feel free to contact me if you have any questions.

Best regards,

Sophie

Sophie Muset

EBO-SURSY Project Lead Programme and Technical Coordinator

Coordonnatrice Principale de programme et Coordonnatrice technique du Projet EBO-SURSY

Coordinador principal del programa y Coordinator técnico del proyecto EBO-SURSY



From: "Tammie O'Rourke" <torourke@metabiota.com>

Sent: 07/12/2018 2:03:09 PM (-07:00)

To: REDACTED

Subject: Re: [predict-surveillance] Surveillance call tomorrow, July 12th @ 10am PT/1pm ET

Further to our discussion today about what the different government report statuses mean, I have added some text at the top of the web page that explains the different statuses. Also, there is another page called <u>Government Report Status</u> that lists all the reports for your country and the dates as it moves through the different phases of the government reporting process. Hopefully this helps to clarify the reports.

Let us know if you have questions.

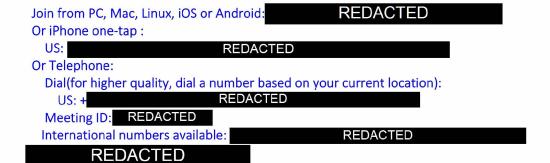
Tammie

On Wed, Jul 11, 2018 at 12:06 PM, Hi PREDICT Surveillance Team,

Our next call is **tomorrow**, **July 12th @ 10am PT/1pm ET**. Agenda and call-in options are below -- please let us know if you have other agenda items to add.

Agenda

- Y5 workplans questions (if any) (David)
- Quarterly tracker, government reports/test results in EIDITH (Tammie/Chris) -- attached
- Serology testing option (Chris)
- Syndromic surveillance -- inclusion criteria/suspected malaria patients
- What is each country doing for sequencing/cloning? **postponed until next joint call**
- Asia country updates
- Others?



Talk to you soon,

REDACTED

--

Tammie O'Rourke

Metabiota

Senior Information Management Developer

Emerging Pandemic Threats - PREDICT Program

tel +1-250-618-2460 • skype tammie.orourke • www.eidith.org

URL: www.metabiota.com

"Delwart, Eric" < Eric. Delwart@ucsf.edu> From: Sent: 07/30/2018 3:52:01 PM (-07:00) "Busch, Michael" < mbusch@bloodsystems.org>; ' To: ; "Jonna Mazet" <jkmazet@ucdavis.edu>; "tgoldstein@ucdavis.edu" <tgoldstein@ucdavis.edu>; "Lipkin, Ian W." <wil2001@cumc.columbia.edu>; "Anthony, Simon J." <sja2127@cumc.columbia.edu>; "Palacios, Gustavo F CTR USARMY MEDCOM USAMRIID (US)" REDACTED <gustavo.f.palacios.ctr@mail.mil>; " REDACTED REDACTED "Oliver Pybus" < REDACTED REDACTED >; "Marc Eloit" < REDACTED Subject: Clade X Pandemic response videos

Forgive the unsolicited email but i thought you might be interested in that John Hopkins video of hypothetical US gov responses to a new virus outbreak.

Clade X Pandemic Exercise

https://www.youtube.com/watch?time_continue=621&v=sJ1x8SlNxj0

From: "Christine Kreuder Johnson" <ckjohnson@UCDAVIS.EDU>

Sent: 09/11/2018 10:57:41 AM (-07:00)

To: "predict-surveillance@ucdavis.edu" predict-surveillance@ucdavis.edu" predict-surveillance@ucdavis.edu

surveillance@ucdavis.edu>

Cc: "Catherine Machalaba" <machalaba@ecohealthalliance.org>; "William B. Karesh"

<karesh@ecohealthalliance.org>; "Jonna Mazet" <jkmazet@ucdavis.edu>

Subject: Surveillance call notes

Attachments: 8.30.2018 surveillance call notes.docx

Hi everyone,

Our next surveillance call is this Thurs, September 13th @ 10am PT/1pm ET.

Proposed agenda is below, please share additional agenda items.

Notes from our last call are attached; as always, let us know if you have any changes before we share with our country teams next week.

Agenda

Check in on completing field activities in year 4 Serology planning updates Asia country updates Others?

Call in information:

Join from PC, Mac, Linux, iOS or Android: REDACTED

Or iPhone one-tap:

US: REDACTED

Or Telephone:

Dial(for higher quality, dial a number based on your current location):

US: REDACTED

Meeting ID REDACTED

International numbers available: REDACTED

Thank you

Chris

Aug 30th, 2018 Surveillance Team Call

Action Items and Reminders for next call:

- 1. Our next call will be Sept 14th, 2018
- 2. Upcoming deadlines -- Master IRB renewal (Google form due to UCD by Friday, Sept 7th) and GHSA annual report (Phase I countries only filled template due to UCD by Monday, Sept 10th)
- 3. By the end of September, please let Chris & REDACTED know whether it will be feasible to participate in the serology study. Please also review local IRBs to ensure samples can be shipped and tested in partner labs.
- 4. Remember -- sequences should be entered into EIDITH by Sept 10th in order to be reviewed in the next round of interpretations

Participants: Marc Valitutto, Carolina Churchill, Mindy Rostal, Christian Lange, Tammie O'Rourke, Karen Saylors, Corina Monagin, Dave McIver, David Wolking, Sarah Olson, Jennie Lane, Kevin Gonzalez, Woutrina Smith, REDACTED Denise Greig, Tracey Goldstein, Jaber Belkhiria, Ava Sullivan, Kevin Olival, Emily Hagan, Allison White, Hong-Ying Li, Leilani Francisco, Stephanie Martinez, Emma Lane, Matthew LeBreton, Brian Bird, Chris K Johnson

Bat book updates

- The Asia version of the bat book was recently shared with EB for comments. The Africa version of the bat book is available for teams to download on the PREDICT website: https://www2.vetmed.ucdavis.edu/ohi/predict/news/living-safely-with-bats.cfm
- As requested by some teams, there will be instructions at the beginning of the book for printing in flipbook/long edge format.

Behavior universal analysis prototype

• The behavior team is developing a universal analysis prototype that will focus on Bangladesh as a case study, and will be shared with surveillance team at some point after it is presented to EB next month. It will cover how a mixed methods approach with a behavioral scope can help inform potential intervention points.

USAID Behavioral Risk brown bag

• Leilani would like any feedback on topics that should be covered in the brown bag briefing in mid-October.

Master IRB renewal – due to UCD by Friday, Sept 7th

• The Master IRB is due for renewal in a few weeks – please ensure teams respond to the Google Form by Friday, Sept 7th.

GHSA Phase I report – due to UCD by Monday, Sept 10th

• The GHSA Phase I semi-annual report template was shared this week with the surveillance call agenda – please work with teams to populate the indicator report table as we've done in the past and return to David by Monday, Sept 10th.

Updating species names

• IM team is looking into mismatched species names and synonyms in EIDITH. The plan for now is to create an extra field that has the correct, most up to date species name and synonym based on ITIS so that these are standardized across the project. No field identified species information will

be overwritten. IM will generate a report so we can work with our teams to understand any issues in naming species, and check in on species identified in the field versus by barcoding.

Serology plan for human samples – progress, questions?

- Proposed priorities for samples from humans (and n) were shared with global leads by email for discussion and sharing with in country teams.
- The Master IRB includes provisions for samples to be shipped to partner laboratories and tested on various platforms (including serology). While all local IRBs should directly mirror the Master, we understand some in-country IRBs were required to be specific around laboratories performing the testing or even specific tests that would be used order to be approved. If this is the case, an amendment would be needed to participate in the serology study.
- We want to ensure all of our local IRBs allow samples to be shipped and tested on these platforms. Please take a look at your local IRB, and confirm with us that no amendment is needed to participate in the study by the end of September.

Material transfer agreements/export issues for human samples planned for serology

- Detailed language around the SeroChip and MAGPIX multiplex technology was shared with surveillance team last week to help with permissions, export letters, etc.
- In order to test our samples on the MAGPIX platform, USAMRIID will be funded through a subaward. They are currently drafting an MTA that we will review, ensure it meets all our requirements, and will share with surveillance team for concurrence.
- For shipment plans -- samples will need to be shipped to CII in NY for the SeroChip. For USAMRIID, samples need to be shipped to UCD to then pass on to USAMRIID. Remember that while we will cover the cost of this testing centrally, the cost of sample shipment must come from country budgets.
- This serology scope is along the lines of small pilot studies using newly developed advanced technology with a very limited budget and very short turnaround time for completion of testing and interpretation. We can only afford to test a fraction of samples collected at this point and hope to produce pilot data that could be followed up with new grants on a country by country basis. Unfortunately, we will not be able to train technicians in the US or send trained technicians in-country for this type of technology. We hope leads can express to teams that this study will be an opportunity to understand the disease burden and risk in country, and may help pave the way for future collaborations with partner labs doing this work and transferring technology locally in Africa and Asia. We also want to reassure in-country partners that data generated and authorship going forward will be in alignment with the PREDICT data sharing policy.

From: REDACTED

Sent: 09/12/2018 5:13:46 PM (-07:00)

To: "Christine Kreuder Johnson" <ckjohnson@UCDAVIS.EDU>; "predict-surveillance@ucdavis.edu"

<predict-surveillance@ucdavis.edu>

Cc: "Catherine Machalaba" <machalaba@ecohealthalliance.org>; "William B. Karesh"

<karesh@ecohealthalliance.org>; "Jonna Mazet" <jkmazet@ucdavis.edu>

Subject: RE: Surveillance call notes

Hi all.

Please find an updated agenda for tomorrow's call below – talk to you soon!

Agenda

- 1. IRB renewal (Corina/David)
- 2. Check in on completing field activities in Year 4 (Chris)
- 3. Serology planning updates
- 4. Year 5 expectations workplan overview, testing, etc (David/Tracey)
- 5. Asia country updates

From: Christine Kreuder Johnson

Sent: Tuesday, September 11, 2018 10:58 AM

To: REDACTED ; predict-surveillance@ucdavis.edu

Cc: Catherine Machalaba <machalaba@ecohealthalliance.org>; William B. Karesh <karesh@ecohealthalliance.org>;

Jonna Mazet < jkmazet@ucdavis.edu>

Subject: Surveillance call notes

Hi everyone,

Our next surveillance call is this Thurs, September 13th @ 10am PT/1pm ET.

Proposed agenda is below, please share additional agenda items.

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Asia country updates

Others?

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Dial(for higher quality, dial a number based on your current location):

US:

REDACTED

Meeting ID: REDACTED

International numbers available:

REDACTED

Thank you

Chris

From: "David McIver" <dmciver@metabiota.com>

Sent: 04/02/2019 12:50:56 PM (-07:00)

To: "Jonna Mazet" < jkmazet@ucdavis.edu>; "Kevin Olival" < olival@ecohealthalliance.org>

Cc: "Peter Daszak" <daszak@ecohealthalliance.org>; "Christine Johnson"

<ckjohnson@ucdavis.edu>; REDACTED ; "Karen Saylors" <ksaylors@metabiota.com>

Subject: Re: SpillOver update

Attachments: bat-pig-SADS-edi_1April2019_DM.docx,

Hi everyone - thanks for the call today!

I also thought Junin sounded a bit off. In this article, they list a number of isolates taken from rodents and the associated GenBank

IDs. https://www.sciencedirect.com/science/article/abs/pii/S0168170211002279?via%3Dihub (Example GenBank ID from a Calomys spp: https://www.ncbi.nlm.nih.gov/nuccore/JF446289)

Kevin - I've attached here a couple of thought on the EDI article. Very interesting stuff, nice job!

Great to talk with everyone - looking forward to seeing you all in Vancouver!

Cheers, Dave

On Apr 2, 2019, at 11:28 AM, Jonna Mazet < jkmazet@ucdavis.edu> wrote:

Thanks for the call. Here are the viruses we discussed and the reasons so far that we have excluded them:

- 1. We currently do not have rankings for 13 of the zoonotic viruses listed in Chris's paper. This is because of the following reasons:
 - a. We do not have PCR records (list below):
 - i. We just have serology or sources of unknown origin from the lit review and these were removed from the dataset.
 - ii. All the PCR records we have are from "Homo sapiens" and they were removed from the dataset.
 - iii. There were no records in the NCBI PCR data extraction
 - b. 2 viruses are not ICTV classified and so not included (Sealpox virus and Tioman virus)

List without PCR records:

Barmah forest virus

Bundibugyo ebolavirus
Chapare
mammarenavirus
Colorado tick fever
virus
Everglades virus
Guaroa
orthobunyavirus
Junin mammarenavirus
Lujo mammarenavirus
Omsk hemorrhagic
fever virus
Ross River virus

If you have genetic records in pubs for any of these viruses or ideas on vector data sets for habitat or diet beyond Vector Map, let us know.

Thanks,

Jonna

the viruses that raised eyebrows on our call were: Bundibugyo ebolavirus, Junin mammarenavirus, Lujo mammarenavirus. The team will check what they have to see if they have anything helpful.

Research from the PREDICT Modeling & Analytics team

November 8, 2018

For details on methods or analysis contact: PREDICT modeling@ ecohealthalliance.org

Extensive overlap of three SADS-CoV bat hosts within intensive pig farming regions in Asia

In October 2016, a novel coronavirus, swine acute diarrhea syndrome coronavirus (SADS-CoV) was discovered at commercial swine farms in Guangdong Province, China¹. The death of nearly 25,000 piglets was attributed to infection with SADS-CoV, a virus of likely bat-origin as very closely-related CoVs have been identified in Rhinolophus spp. horseshoe bats (R. affinis, R. sinicus, R. pusillus, and R. rex) roosting in caves near infected farms.

SADS-CoV threatens commercial pig populations at bat-pig interfaces where other viral pathogens (e.g. Nipah, Menangle, and Ebola Reston viruses) also have been found. It is therefore critical to identify geographic areas with the greatest potential for bat-pig transmission to mitigate the risk of SADS-CoV and other viral spillover, and to prioritize surveillance. Here we use spatial analyses to identify areas of greatest risk of SADS-CoV emergence across China and Southeast Asia by modeling the distribution of key Rhinolophus host species and their overlap with commercial pig farms.

Regions of Greatest Overlap

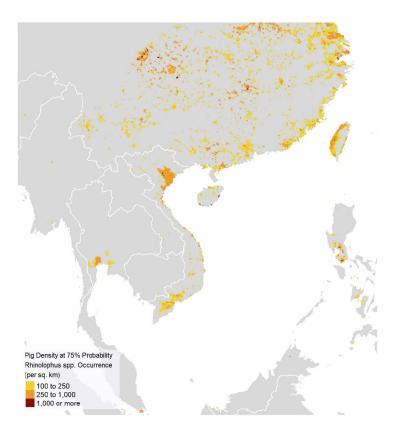


Figure 1. Areas of bat-pig overlap where probability of SADS-CoV Rhinolophus spp. reservoir occurrence is high (>75%) and pig densities are indicative of intensive pig farming (>100 heads per km2).









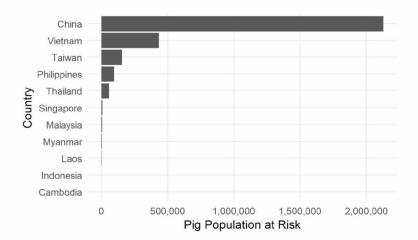






The largest areas of spatial overlap among SADS-CoV host species and pig farms are localized mainly to Southern China (including Taiwan), throughout Vietnam, the Philippines, and Thailand. Compared to other countries, China had the largest area of bat-pig overlap with 329,847 km² (3.4% of total country area) and 2,127,006 pigs located within predicted bat distributions. By Chinese province, the largest area of overlap was found in Jiangsu (35,226 km² amounting to 34.3% of the province's area and 242,299 pigs within this area). Sichuan had the largest pig population at risk (the pig population within an area that intersects with predicted bat occurrence), at 274,353 heads over 26,015 km² (5.4% of the total area of the province).

Conclusion: This analysis uses the best available science to identify key regions where the likelihood of SADS-CoV spillover is highest. It allows better geographic targeting of future research to understand SADS-CoV and interventions to block spillover across the pig-bat interface.

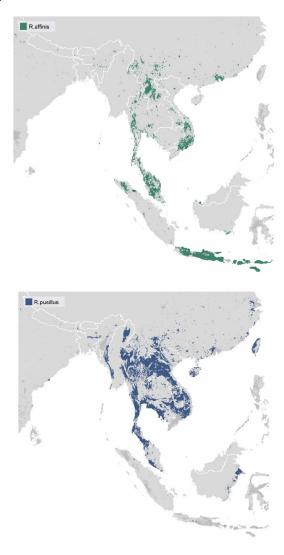




Figures 2-3. Total pig population at risk by country, and Chinese province. Pig population at risk is defined by the number of pigs (heads) within an area that intersects with predicted bat occurrence. Among China's 2,127,006 pigs in spatial overlap areas, Sichuan and Jiangsu provinces each had over 200,000 pigs in areas of SADS-CoV spillover risk.

Species Distribution Modeling

The PREDICT-2 Modeling & Analytics team used MaxEnt to create species distribution models for *Rhinolophus affinis*, *R. pusillus*, and *R. sinicus*, potential hosts implicated in the initial SADS-CoV spillover event. There were insufficient occurrence records to model the species distribution for *R. rex*, the fourth bat species in which SADS-CoV was previously detected¹. Occurrence records for each host species were derived from PREDICT-1, PREDICT-2, and NIAID 1R01AI110964 data, and the Global Biodiversity Information Facility (GBIF). Fourteen bioclimatic variables from BIOCLIM, land cover type, karst landscapes, night time lights, and human population density were inputs for the model. Predictive accuracy was high for the best-fitting models, with mean AUC values of 0.82 (R. affinis), 0.80 (R. pusillus), and 0.72 (R. sinicus).





Figures 4-6. Species distribution models of *R. affinis*, *R. pusillus*, and *R. sinicus* projected to IUCN species range extents (colored), and predicted distributions outside of IUCN range in grey. These bat species distribution models were used to map bat-pig overlap in Figure 1.

References

- 1. Zhou P, Fan H, Lan T, Yang XL, Shi WF, Zhang W, et al. Fatal acute diarrhoea syndrome caused by an HKU-2 related coronavirus of bat origin. Nature. 2018; 556(7700):255-258. doi: 10.1038/s41586-018-0010-9.
- 2. Proosdij ASJ, Sosef MSM, Wieringa JJ, Raes N. Minimum required number of specimen records to develop accurate species distribution models. Ecography. 2015; 39(6):542-552. doi: 10.1111/ecog.01509.
- 3. Duan R, Kong XQ, Huang MY, Fan WY, Wang ZG. The predictive performance and stability of six species distribution models. PLoS One. 2014; 9(11). doi: 10.1371%2Fjournal.pone.0112764.

From: "Kevin Olival" <olival@ecohealthalliance.org>

Sent: 04/16/2019 7:51:00 AM (-07:00)

To: "David McIver" <dmciver@metabiota.com>

Cc: "Jonna Mazet" <jkmazet@ucdavis.edu>; "Peter Daszak" <daszak@ecohealthalliance.org>;

; "Karen Saylors"

"Christine Kreuder Johnson" <ckjohnson@ucdavis.edu>; REDACTED

<ksaylors@metabiota.com>

Subject: Re: SpillOver update

Got these comments, thanks Dave!

On Apr 2, 2019, at 3:50 PM, David McIver < dmciver@metabiota.com > wrote:

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b. 2 viruses are not ICTV classified and so not included (Sealpox virus and Tioman virus)

List without PCR records:

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Bundibugyo ebolavirus
Chapare
mammarenavirus
Colorado tick fever
virus
Everglades virus
Guaroa
orthobunyavirus
Junin mammarenavirus
Lujo mammarenavirus
Omsk hemorrhagic
fever virus
Ross River virus

If you have genetic records in pubs for any of these viruses or ideas on vector data sets for habitat or diet beyond Vector Map, let us know.

Thanks,

Jonna

the viruses that raised eyebrows on our call were: Bundibugyo ebolavirus, Junin mammarenavirus, Lujo mammarenavirus. The team will check what they have to see if they have anything helpful.

<bat-pig-SADS-edi_1April2019_DM.docx>

From: "Wang Linfa" REDACTED

Sent: 06/23/2019 7:31:51 AM (-07:00)

To: "Jonna Mazet" < jkmazet@ucdavis.edu>

Subject: Re: Potential drop by at UCD on Monday 29 July

Attachments: First Announcement-Nipah Virus International Conference-Singapore.pdf

Dear Jonna,

Just in case it did not reach your mail server, I am resending the following message.

Also attached is a Nipah Virus International Conference flyer in case you or your colleague is interested.

Cheers,

LF

Linfa (Lin-Fa) Wang, PhD FTSE
Professor & Director
Programme in Emerging Infectious Diseases
Duke-NUS Medical School

REDACTED

From: Wang Linfa REDACTED

Date: Saturday, 15 June 2019 at 2:46 PM **To:** Jonna Mazet < jkmazet@ucdavis.edu>

Subject: Potential drop by at UCD on Monday 29 July

Dear Jonna,

I will be going to ASV this year and will visit Stanford and potentially UCD on the way back to Singapore.

If you are around on Monday 29 July, I will be interested in paying a visit and give a talk if you wish.

It's been many years since I was back at UCD!

Regards,

LF

Linfa (Lin-Fa) WANG, PhD FTSE
Professor & Director
Programme in Emerging Infectious Disease
Duke-NUS Medical School,





Nipah @ 20

SAVE THE DATE:

NIPAH VIRUS INTERNATIONAL CONFERENCE

December 9-10, 2019, Singapore



Since first being identified in Malaysia and Singapore in 1999, the Nipah virus has gone on to cause a number of deadly outbreaks across South and Southeast Asia. In light of its epidemic potential and with no vaccines or treatments currently available, the zoonotic disease is listed on the WHO's R+D Blueprint as a priority pathogen in need of urgent action.

To mark **the 20**th **anniversary** since the discovery of Nipah, an international scientific congress will be held to bring researchers and practitioners together to review the historic outbreaks, discuss the latest developments in diagnostics, vaccines and therapeutics, and foster greater international collaboration.

For more details, please contact:

Linfa WANG at

REDACTED

Registration opens in July. More information coming soon









From: "Wang Linfa" REDACTED

Sent: 06/28/2019 8:26:51 PM (-07:00)

To: "Jonna Mazet" <jkmazet@ucdavis.edu>
Cc: "Tracey Goldstein" <tgoldstein@ucdavis.edu>
Subject: RE: Potential drop by at UCD on Monday 29 July

Many thanks!

Linfa (Lin-Fa) WANG, PhD FTSE
Professor & Director
Programme in Emerging Infectious Disease
Duke-NUS Medical School.

REDACTED

From: Jonna Mazet [mailto:jkmazet@ucdavis.edu]

Sent: Saturday, 29 June, 2019 11:25 AM

To: Wang Linfa **Cc:** Tracey Goldstein

Subject: Re: Potential drop by at UCD on Monday 29 July

Connecting her here, but I see that she left on vacation today until the 6th, so I will also have our team reach out to get the logistics started.

Have a great weekend,

Jonna

On Fri, Jun 28, 2019 at 8:20 PM Wang Linfa

REDACTED

wrote:

Thanks and I can liaise with Tracey directly if you can add her in the email.

Linfa (Lin-Fa) WANG, PhD FTSE
Professor & Director
Programme in Emerging Infectious Disease
Duke-NUS Medical School,

REDACTED

From: Jonna Mazet [mailto:jkmazet@ucdavis.edu]

Sent: Saturday, 29 June, 2019 11:19 AM

To: Wang Linfa

Subject: Re: Potential drop by at UCD on Monday 29 July

Fantastic!
Jonna

On Mon, Jun 24, 2019 at 6:53 PM Wang Linfa

REDACTED

> wrote:

Dear Jonna,

REDACTED

It will be good if Tracey can host my visit. It's been a very long time since my last visit to UCD! Cheers Linfa Sent from my iPhone On 25 Jun 2019, at 5:51 AM, Jonna Mazet < ikmazet@ucdavis.edu> wrote: Dear Linfa, Just back from extensive travel and catching up. Thanks so much for reaching out and letting me know that you're coming to Davis! We'd love to host you. Unfortunately, REDACTED REDACTED Would you like to come for a visit, even though I won't be here? I'm sure Tracey Goldstein would love the chance to visit and arrange for a talk if you'd still like to come back to Davis for a visit. Really sorry that I won't be here, but I hope to see you again soon somewhere, maybe the Nipah meeting (thanks for the flyer, as well), Jonna Jonna AK Mazet, DVM, MPVM, PhD Professor of Epidemiology & Disease Ecology Executive Director, One Health Institute Global Director, PREDICT Project of USAID Emerging Pandemic Threats Program School of Veterinary Medicine University of California 1089 Veterinary Medicine Drive Davis, CA 95616, USA +1-530-752-3630 onehealthinstitute.net For scheduling and logistical issues, please contact: Ms. Brooke Genovese bgenovese@ucdavis.edu +1-530-752-3630 REDACTED On Sun, Jun 23, 2019 at 7:32 AM Wang Linfa Dear Jonna, Just in case it did not reach your mail server, I am resending the following message. Also attached is a Nipah Virus International Conference flyer in case you or your colleague is interested. Cheers, LF Linfa (Lin-Fa) Wang, PhD FTSE

Linfa (Lin-Fa) Wang, PhD FTSE
Professor & Director
Programme in Emerging Infectious Diseases
Duke-NUS Medical School

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From: "Tracey Goldstein" <tgoldstein@ucdavis.edu>

Sent: 07/07/2019 7:21:23 AM (-07:00)

To: "Jonna Mazet" <jkmazet@ucdavis.edu>

Cc: "Wang Linfa" REDACTED

Subject: Re: Potential drop by at UCD on Monday 29 July

Hello Linfa,

Yes it will be great to host and have you here! I will work on a time ad location for your seminar. Please also let me know if you would like to meet with anyone or see anything while you are here.

Looking forward to it.

Best Tracey

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Linfa (Lin-Fa) WANG, PhD FTSE

Professor & Director

Programme in Emerging Infectious Disease

Duke-NUS Medical School,



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Jonna
Jonna AK Mazet, DVM, MPVM, PhD
Professor of Epidemiology & Disease Ecology
Executive Director, One Health Institute
Global Director, PREDICT Project of USAID Emerging Pandemic Threats Program
School of Veterinary Medicine
University of California

1089 Veterinary Medicine Drive
Davis, CA 95616, USA
+1-530-752-3630
<u>onehealthinstitute.net</u>
For scheduling and logistical issues, please contact:
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Duke-NUS Medical School,

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--

Tracey Goldstein, PhD One Health Institute School of Veterinary Medicine University of California Davis, CA 95616

Phone: (530) 752-0412 Fax: (530) 752-3318

E-mail: tgoldstein@ucdavis.edu

From: "Tracey Goldstein" <tgoldstein@ucdavis.edu>

Sent: 07/09/2019 8:11:09 AM (-07:00)

To: "Wang Linfa" REDACTED

Cc: "Jonna Mazet" < jkmazet@ucdavis.edu>

Subject: Re: Potential drop by at UCD on Monday 29 July

Thanks, will work on scheduling

On Tue, Jul 9, 2019 at 7:58 AM Wang Linfa

REDACTED

wrote:

Thanks Tracey, a noon seminar or 3 pm seminar will be better for me as I need to arrive in Sacramento just before 6 pm.

Regards,

LF

Linfa (Lin-Fa) WANG, PhD FTSE

Professor & Director

Programme in Emerging Infectious Disease

Duke-NUS Medical School,



From: Tracey Goldstein [mailto:tgoldstein@ucdavis.edu]

Sent: Tuesday, 9 July, 2019 10:56 PM

To: Wang Linfa **Cc:** Jonna Mazet

Subject: Re: Potential drop by at UCD on Monday 29 July

Hi Linfa,

Thanks for getting back to me.

I will work on scheduling time with as may of us as I can. At the moment I was planning a 4pm seminar with a short reception afterwards for folks to be able to talk more informally with you. Will that work or would you prefer that I try to schedule a noon seminar?

Best	Tracey

On Tue, Jul 9, 2019 at 7:34 AM Wang Linfa REDACTED wrote:

Dear Tracey,

For this trip, I really just wish to meet with the PREDICT group of scientists. Most of my old contacts from UCD are either retired or not work in ID field. I do wish to visit a few old friends for dinner in Sacramento and it will be good if I can leave UCD around 4:30 pm-5 pm.

Thanks again.

LF

Linfa (Lin-Fa) WANG, PhD FTSE

Professor & Director

Programme in Emerging Infectious Disease

Duke-NUS Medical School,



From: Tracey Goldstein [mailto:tgoldstein@ucdavis.edu]

Sent: Sunday, 7 July, 2019 10:21 PM

To: Jonna Mazet **Cc:** Wang Linfa

Subject: Re: Potential drop by at UCD on Monday 29 July

Hello Linfa,

Yes it will be great to host and have you here! I will work on a time ad location for your seminar. Please also let me know if you would like to meet with anyone or see anything while you are here.

Looking forward to it.

Best Tracey

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Professor & Director

Programme in Emerging Infectious Disease

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REDACTED

From: Wang Linfa

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Phone: (530) 752-0412 Fax: (530) 752-3318 E-mail: tgoldstein@ucdavis.edu

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Tracey Goldstein, PhD One Health Institute School of Veterinary Medicine University of California Davis, CA 95616

Phone: (530) 752-0412

Fax: (530) 752-3318 E-mail: tgoldstein@ucdavis.edu

From: "William B. Karesh" <karesh@ecohealthalliance.org>

Sent: 08/28/2019 3:07:54 PM (-07:00)

To: "Jonna Mazet" <jkmazet@ucdavis.edu>; "Katherine Leasure" <kaleasure@ucdavis.edu>;

"Elizabeth Leasure" <ealeasure@ucdavis.edu>; "Ava Sullivan" <sullivan@ecohealthalliance.org>

Subject: Bali meeting and Subhash

Subhash would now like to attend the Bali meeting.

REDACTED

How should we proceed? tickets? hotel booking?

Billy

William B. Karesh, D.V.M

Executive Vice President for Health and Policy

EcoHealth Alliance 460 West 34th Street - 17th Floor New York, NY 10001 USA

+1.212.380.4463 (direct) +1.212.380.4465 (fax)

www.ecohealthalliance.org

President, OIE Working Group on Wildlife

Co-chair, IUCN Species Survival Commission - Wildlife Health Specialist Group

EPT Partners Liaison, USAID Emerging Pandemic Threats - PREDICT-2 Program

EcoHealth Alliance leads cutting-edge research into the critical connections between human and wildlife health and delicate ecosystems. With this science we develop solutions that promote conservation and prevent pandemics.

From: predict-request@ucdavis.edu on behalf of "David J Wolking" <djwolking@ucdavis.edu>

Sent: 08/30/2019 3:33:54 PM (-07:00)

To: "Catherine Machalaba" <machalaba@ecohealthalliance.org>
Cc: "David Wolking" <djwolking@ucdavis.edu>; "William B. Karesh"

<karesh@ecohealthalliance.org>; "Corina Grigorescu Monagin" <cgmonagin@ucdavis.edu>; "predict@ucdavis.edu"

cpredict@ucdavis.edu>

Subject: Re: [predict] Re: ACTION REQUIRED: Congratulations! You've been nominated to lead a session at the PREDICT All-Country Meeting: From OH Platforms to Action

Catherine this is amazing! Nice work. I'm consistently blown away with how quick you pull things together :-)

I'd suggest reaching out to the global leads (listed below for quick ref) to confirm participation from your panel below. Once confirmed, feel free to take it away and let us know if you have any questions.

Enjoy the weekend!

David

On Wed, Aug 28, 2019 at 5:22 PM Catherine Machalaba < <u>machalaba@ecohealthalliance.org</u>> wrote: Hey David,

Thank you - it would be a great honor! Billy and I are pretty familiar with the activities in Ghana. I think Bel would bring great insight as the moderator.

The list of countries looks great and will showcase a great range of activities and impact. Please see the proposed composition below- (but of course we're delighted to collaborate with any of the country teams on the panel. For Indonesia, maybe we can propose that Atie be the one to present. I think she has a great sense of the overall of scope of One Health needs and priorities in the country and tangible examples of where PREDICT has helped to operationalize key approaches.

Countries/Panelists:

Bangladesh* (Arif) - Jon Epstein (global lead)

Ghana*

(Samuel Bel-nono) - Terra Kelly (global lead)

Kenya*

- potential moderator if not Ghana - Dawn Zimmerman (global lead)

Liberia*
 (Jackson - Jim likely in other sessions) - Jon or James Desmond (global lead?

Indonesia

- (Imung to decide? Atie?) - Kevin Olival or Alice (global lead)

CIV- Anne (global lead)
 proposed to join the capacity session but

• likely a better fit here given the workshop could replace one of the other Africa countries? Kalpy would be fantastic for this session if we can place CIV on two panels. The One Health workshop was a huge success and very strongly supported by the USAID mission (especially Zandra), helping to show the value of each sector and identify where there were gaps that capacity strengthening could then effectively target (e.g. wildlife health capacity in the government). I think the Liberia-CIV perspectives on the panel will also be really informative, as there are not a lot of existing collaborations between the two neighboring countries but we found during the training that CIV was intensely interested in Liberia's experience in putting One Health into practice and really helped to turn a global, broad concept into something that they saw as feasible to implement in their own country. But if there isn't space, Billy can cover the workshop in his presentation and then maybe we can call on Kalpy to briefly say a few targeted words during this panel.

If there is time at the end of the session, I think it would be great to give the panelists a few minutes to engage the audience with a few prompts so we can hear additional examples and continue the exchange of approaches across countries and contexts.

I will look forward to coordinating with folks and the co-moderator when you connect us. We are excited for the opportunity for their important One Health contributions to shine! Thanks again!!!

Kind regards, Catherine Catherine Machalaba, MPH Policy Advisor and Research Scientist

EcoHealth Alliance 460 West 34th Street – 17th floor New York, NY 10001

1.212.380.4472 (direct)

REDACTED (mobile)
1.212.380.4465 (fax)

www.ecohealthalliance.org

Chair, Veterinary Public Health Special Primary Interest Group, American Public Health Association

Program Officer, IUCN SSC Wildlife Health Specialist Group

Science Officer, Future Earth oneHEALTH Project

EcoHealth Alliance leads cutting-edge scientific research into the critical connections between human and wildlife health and delicate ecosystems. With this science, we develop solutions that prevent pandemics and promote conservation.

On Aug 28, 2019, at 5:39 PM, David J Wolking < djwolking@ucdavis.edu > wrote:

Hi Catherine,

On behalf of the All-Country Meeting Coordinating Committee, we are really excited to see you in a few weeks in Bali! Due to your expertise and long-time working with PREDICT, we would like to nominate you both to co-moderate the panel session "From One Health Platforms to Action - Sustaining the One Health Approach - Selected OH Case Studies Highlighting Country Teams, One Health and Economics and One Health Partnership and Intergovernmental Collaboration". It's a 1 hour and 15 minute session on Day 3.

The structure is for two moderators to lead a discussion based on the theme of the session with a panel of participants from various PREDICT host countries. We have some ideas for co-moderators but since you and Billy have done so much work on the OH case studies thought we might give you the chance to suggest some individuals. We did nominate Arif to co-lead the capacity session, Kalpy from CIV may be helping with more lab related stuff, so it's a balancing act but happy to explore further with the bigger program in mind.

Below you will see some details on your panel along with suggested participants. The countries and panelists listed in black are those best suited for the session. Countries/panelists in red are either featured heavily in other sessions or did not provide a strong proposed theme in the Google Form. We tried to pick participants keeping in mind a host of factors including Consortium partner representation, global geography, proposed theme and participation on other panels for overall balance in the program. Ideally, each session will have between 4-6 panelists depending on length and the structure and goals for the session, which are largely your decision as moderators. Of course, if you have other ideas for good panel participants we can continue to explore.

First, please let us know if you are willing to lead the session. If so, we'd like you to review the theme and participants and get back to us with any questions or thoughts by this Friday, August 30th. On Monday (September 2nd) we plan to send out another email connecting you with your list of panelists to confirm their participation so you can begin preparations. After that, the rest is in your hands.

Please don't hesitate to reach out with any questions, happy to help!

David

From

One Health Platforms to Action - Sustaining the One Health Approach - Selected OH Case Studies Highlighting Country Teams, One Health and Economics and One Health Partnership and Intergovernmental Collaboration - Moderated by Catherine Machalaba and Ghana

(Bel?) reps?

1

hour and 15 mins Countries/Panelists: Bangladesh* (Arif) Ethiopia* (Nigatu) Ghana* (Samuel Bel-nono) - Ghana is a must have for this session as not engaged in others... Jordan* Kenya* - potential moderator if not Ghana Liberia* (Jackson - Jim likely in other sessions) Indonesia - (Imung to decide?) Nepal* Sierra Leone* Viet Nam*

Suggestions:

CIV

workshop could replace one of the other Africa countries?

- proposed to join the capacity session but likely a better fit here given the

From: "Parker, Tina (NIH/NIAID) [E]" <parkerti@niaid.nih.gov>

Sent: 09/03/2019 7:48:18 AM (-07:00)

To:"Catherine Machalaba" <machalaba@ecohealthalliance.org>; "assaf.anyamba@nasa.gov" <assaf.anyamba@nasa.gov>; "Berrian, Amanda" <berrian.4@osu.edu>; "Franck Berthe" <fberthe1@worldbank.org>;

"Greg Gray, M.D." <gregory.gray@duke.edu>; "olga_jonas@harvard.edu" <olga_jonas@harvard.edu>;

REDACTED "William B. Karesh" <karesh@ecohealthalliance.org>; "Michelle H

Larsen" <michelle.larsen@einstein.yu.edu>; "ramanan@cddep.org" <ramanan@cddep.org>; "Larry Madoff"

REDACTED "Keith Martin" < kmartin@cugh.org>; "Jonna Mazet" < jkmazet@ucdavis.edu>; "Liz Mumford"

"Lilian Pintea" < IPintea@janegoodall.org>; "Rafael Luis Ruiz De Castaneda"

REDACTED; "Dr. Melinda Rostal" <rostal@ecohealthalliance.org>; "Neil Vora"

"Jill Raufman" <Jill.Raufman@einstein.yu.edu>

Cc: "Parker, Tina (NIH/NIAID) [E]" <parkerti@niaid.nih.gov>

Subject: FW: NIAID Funding Opportunity: Ecology and Evolution of Infectious Diseases Program, NOT-

TW-19-007

All,

Here is a notice for a funding opportunity on ecology and evolution of infectious diseases and transmission dynamics. Up to \$2.5M over 5 years. This is a great example of funding for One Health!! Please feel free to share this.

Tina

From: National Institute of Allergy and Infectious Diseases (NIAID) <niaid@service.govdelivery.com>

Sent: Tuesday, September 3, 2019 9:59 AM

Subject: NIAID Funding Opportunity: Ecology and Evolution of Infectious Diseases Program, NOT-TW-19-007



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or problems with the subscription service, please contact <u>subscriberhelp.govdelivery.com</u>.

This service is provided to you at no charge by <u>National Institute of Allergy and Infectious Diseases</u> (NIAID).

×

This email was sent to $\underline{\text{parkerti@niaid.nih.gov}}$ using GovDelivery Communications Cloud on behalf of: National Institute of Allergy and Infectious Diseases \cdot 5601 Fishers Lane \cdot Bethesda, MD 20892 \cdot 1-866-284-4107

From: Catherine Machalaba <machalaba@ecohealthalliance.org>

To: Ronald Waldman <ronwaldman@email.gwu.edu>

CC: William B. Karesh karesh@ecohealthalliance.org; Jonna Mazet karesh@ucdavis.edu

Sent: 11/16/2019 9:54:59 AM

Subject: Re: Looking for great examples of preparedness and response

Hi Dr. Waldman,

Thank you- this is a wonderful opportunity and we have many examples to share. Amanda and Sarah Hersey are great (and we overlapped in Togo for the WAHO One Health and REDISSE meetings a few weeks ago). Delighted to connect with them to see how we can best feed into the process.

Thank you!!

Kind regards, Catherine

On Nov 16, 2019, at 11:28 AM, Ronald Waldman < ronwaldman@email.gwu.edu> wrote:

I figured. I've written Amanda, a great person and a good friend and, if she is willing, will you in direct touch with her. Catherine probably knows her well, especially because RTSL has someone in the pandemic office at the WB.

Ron

Tel: +1 202 374 2364

On Nov 16, 2019, at 11:19 AM, William B. Karesh «karesh@ecohealthalliance.org» wrote:

Thanks Ron!! No surprise that they didn't think any outbreaks start with animals.

We have quite a few great examples to share with them.

BK

On Nov 16, 2019, at 11:08 AM, Ronald Waldman < ronwaldman@email.gwu.edu> wrote:

Hi Jonna and Billy,

I hope all's well with you. I got this email from Resolve to Save Lives and I'm worried a bit that they sent it around only to human health people. I think this could be a good opportunity to make a case. Do you have anything that you think they might be interested in? I'd be happy to talk to them about what they are missing. This is Tom Frieden's project.

Ron

Tel: +1 202 374 2364

Begin forwarded message:

From: Amanda McClelland <amcclelland@resolvetosavelives.org>
Subject: Looking for great examples of preparedness and response

Date: November 14, 2019 at 6:57:02 PM EST

To: Ricardo Echalar < rechalar@usaid.gov >, Richard Greene < rgreene@usaid.gov >, Ronald

Waldman < ronwaldman@email.gwu.edu >

Dear Colleagues,

RTSL are planning an inaugural report that highlights outbreaks that were stopped before they spread out of control. **THINGS THAT NEVER HAPPENED!** The report aims to focus on the growing number of countries that are successfully detecting and responding to outbreaks every day. The report will feature a series of case studies from around the world that showcase how strong epidemic preparedness stops outbreaks from spreading; saving lives and money. It would be great to try and find some community or one health examples if possible.

Our hope is to further make the case for prioritizing and investing in epidemic preparedness by highlighting the success rather than always analyzing the "mistakes".

The report will include case studies from 2019, to be launched in early 2020.

Our ask to you: We are looking for a variety of great case studies that highlight country capacity. Submit any relevant cases you or a partner has worked on, and share the link with any colleagues who might be interested. We will review the case studies and select around 10 to be further developed. Our team will support the writing of the case study working with the country or partner to highlight their achievements, focused on the how preparedness supported improved response.

Submissions will be open through December 20th. Link: https://www.surveymonkey.com/r/LYWHRLC

Attached is a ppt to explain the project – feel free to share the call with partners or on social media and have included a sample message below.

Call for submissions! Did you work on an outbreak that was stopped before it spread out of control?
 Submit it to be featured in a global report by @ResolveTSL here: https://www.surveymonkey.com/r/LYWHRLC#PreventEpidemics

Thank you so much and please do not hesitate to ask any questions.

Amanda

From: predict-request@ucdavis.edu on behalf of "David J Wolking" <djwolking@ucdavis.edu>

Sent: 03/12/2020 9:51:08 AM (-07:00)

To: "Churchill, Carolina" <cchurchill@wcs.org>; "Amanda Fine" < REDACTED "Walzer,

Christian" REDACTED ; "Sarah Olson" REDACTED

Cc: "predict@ucdavis.edu" <predict@ucdavis.edu>; "Christine Kreuder Johnson"

<ckjohnson@ucdavis.edu>

Subject: [predict] Fwd: Updated Agenda & Logistics - Emerging Viral Zoonoses Data Discussion

Attachments: Remote Participation Agenda for Emerging Viral Zoonoses Data Discussion.pdf

Hi WCS team,

Here is the info on the Zoom data discussion that has replaced our inperson meetings on March 18-19th. Hope you can still join and I'm sure we'll followup very soon with more ideas and plans for each of the sessions.

David

```
----- Forwarded message -----
From: Cassandra Louis Duthil <clouisduthil@usaid.gov>
Date: Thu, Mar 12, 2020 at 9:01 AM
Subject: Updated Agenda & Logistics - Emerging Viral Zoonoses Data Discussion
                      REDACTED David John Wolking < djwolking@ucdavis.edu>, < cwalzer@wcs.org>,
Murray, Suzan < Murray S@si.edu >, Pavlin, Julie < JPavlin@nas.edu >, Goodtree, Hannah
<a href="mailto:</a> <a href="mailto:Andrew Clements <a href="mailto:aclements@usaid.gov">"><a href="mailto:Andrew Clements <a href="mailto:aclements@usaid.gov">"><a href="mailto:Andrew Clements@usaid.gov">"><a href="mailto:Andrew Clements@usaid.
Wantanee (FAORAP) Kalpravidh <
                                                                            REDACTED
                                                                                                                   , Jonna Mazet <jkmazet@ucdavis.edu>,
Christine Kreuder Johnson < ckjohnson@ucdavis.edu>, VonDobschuetz, Sophie (AGAH)
                  REDACTED
                                                           , Wenging REDACTED >, Ann REDACTED >, Filip Claes
                    REDACTED , William Karesh < <u>Karesh@ecohealthalliance.org</u>>, Peter Daszak
(AGAH)
<a href="mailto:</a> <a href="mailto:daszak@ecohealthalliance.org">daszak@ecohealthalliance.org</a>, VAN KERKHOVE, Maria D.
                                                                                                                           REDACTED
Nahoko REDACTED Barton Behravesh, Casey (CDC/OID/NCEZID) <dlx9@cdc.gov>, Towner,
Jonathan (Jon) (CDC/OID/NCEZID) < iit8@cdc.gov>, zuz4@CDC.GOV < zuz4@cdc.gov>, Stokes, Martha M
CIV (USA) <martha.m.stokes.civ@mail.mil>, Simon Anthony, D.Phil <anthony@ecohealthalliance.org>,
Brian Bird <a href="mailto:bhbird@ucdavis.edu">bhbird@ucdavis.edu</a>, Tracey Goldstein <a href="mailto:tgoldstein@ucdavis.edu">tgoldstein@ucdavis.edu</a>,
<monica.zamisch.ctr@darpa.mil>, Jessup, Christine (NIH/FIC) [E] <Christine.Jessup@nih.gov>, <Jean-
Paul.Chretien@ncmi.detrick.army.mil>, <jeffrey.j.morgan21.ctr@mail.mil>, Newman, Carl I CIV DTRA J3-7
(US) <carl.i.newman.civ@mail.mil>, Richards, Jean M CIV DTRA J3-7 (US)
<jean.m.richards5.civ@mail.mil>, Cecile Viboud <viboudc@mail.nih.gov>, Bresee, Joseph
(CDC/CCID/NCIRD) <isb6@cdc.gov>, Schar, Daniel (RDMA/OPH) <dSchar@usaid.gov>, Cara Chrisman
<cchrisman@usaid.gov>, Padmaja Shetty <pshetty@usaid.gov>, Patricia Bright <pshetty@usaid.gov>, Pereira,
Alisa (GH/HIDN) <apereira@usaid.gov>, Marilyn Crane <mcrane@usaid.gov>, Ricardo Echalar
<rechalar@usaid.gov>, Greene, Richard (USAID/Dhaka/DIR) <rgreene@usaid.gov>, Tiffany D'Mello
<ztq9@cdc.gov>, <rosenthj@ficod.fic.nih.gov>, <randal.j.schoepp.civ@mail.mil>,
<Darrel.K.Styles@aphis.usda.gov>, Sorenson, Robert (NIH/NIAID) [C] <robert.sorenson@nih.gov>,
lisa.hensley@nih.gov>, <rohit.chitale@darpa.mil>
```

Dear Colleagues,

Given the limitations on travel and large gatherings due to COVID-19, we have made the decision to continue with the Emerging Viral Zoonoses Data Discussion as a **virtual** meeting via Zoom Conferencing (please see below and attached for Zoom details).

As per the attached updated agenda, in an effort to accommodate the variety of time zones, the meeting will now be held:

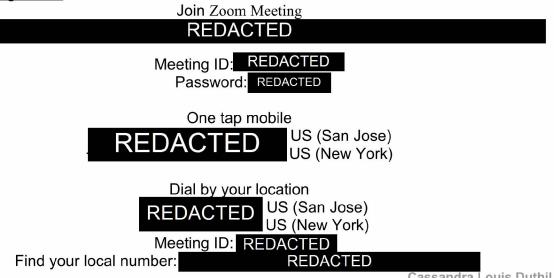
- Wednesday, March 18th, 10 am 1 pm EDT
- Thursday, March 19th, 10 am 1 pm EDT

We hope that even with this updated schedule, you will still be able to join us for what we believe will be an informative and productive meeting.

If you plan to attend and have not RSVP'd at this point, or if this change in timing alters your plans, kindly let me know via email at your earliest convenience.

Sincerely, Cassandra

Zoom Conferencing Details



Cassandra Louis Duthil, MBA
Program Assistant

Emerging Threats Division U.S. Agency for International Development (USAID)

New Telephone:202-916-2067 Cell: REDACTED | clouisduthil@usaid.gov

DRAFT AGENDA

Emerging Viral Zoonoses Data Discussion

March 18-19, 2020

Location: Remote Participation via Zoom (details below)

Day One Wednesday, March 18, 2020 10:00AM – 1:00PM EDT		
10:00 – 10:15 PM	Welcoming Remarks & Introductions	
10:15 - 11:15 PM	SESSION 1: Review of data related to spillover, amplification and spread of emerging zoonotic viruses	
11:15 - 12:00 PM	SESSION 2: Review of risk profiles and trends related to spillover, amplification, and spread of emerging zoonotic viruses	
12:00 - 12:55 PM	Facilitated discussion	
12:55 – 1:00 PM	Wrap-up & Logistics	

DRAFT AGENDA

Emerging Viral Zoonoses Data Discussion

March 18-19, 2020

Location: Remote Participation via Zoom (details below)

Day Two Thursday, March 19, 2020 10:00AM – 1:00PM EDT		
10:00 - 10:05 AM	Logistics & Day Two Introductions	
10:05 - 11:00 AM	Continued Facilitated discussion	
11:00 - 12:00 PM	SESSION 3: Review of tools and strategies related to spillover, amplification, and spread of emerging zoonotic viruses	
12:00 - 12:50 PM	Facilitated discussion	
12:50 - 1:00 PM	Closing Remarks	

DRAFT AGENDA

Emerging Viral Zoonoses Data Discussion

March 18-19, 2020 Zoom Conferencing Details

Join Zoom Meeting REDACTED

REDACTED

Meeting ID: REDACTED
Password: REDACTED

One tap mobile

REDACTED US (San Jose) US (New York)

Dial by your location

REDACTED US (San Jose)
US (New York)

Meeting ID: REDACTED

Find your local number: REDACTED

03/30/2020 2:07:20 PM (-07:00) Sent: "Steven A. Osofsky" <s.osofsky@cornell.edu> To: "Suzan Murray" <MurrayS@si.edu>; "Peter Daszak" <daszak@ecohealthalliance.org>; "Walzer, Cc: ; "Jonna Mazet" <jkmazet@ucdavis.edu>; "Keith Martin" <kmartin@cugh.org>; "Valitutto, Christian" REDACTED Marc" <ValituttoM@si.edu>; "Christine Kreuder Johnson" <ckjohnson@ucdavis.edu>; "Maggie Kinnaird" <mkinnaird@wwf.panda.org>; REDACTED "Fine, Amanda" REDACTED "Catherine Machalaba" <machalaba@ecohealthalliance.org>; "Hemley, Ginette" <ginette.HEMLEY@WWFUS.ORG>; "O Criodain, Colman" < REDACTED >; "Aileo Weinmann" <WeinmannA@nwf.org>; "Martin Gilbert" <m.gilbert@cornell.edu> Subject: RE: FOR REVIEW: Joint call to action on COVID-19 Attachments: Open Letter to Global PolicymakersDraftv3.docx Steve, Thanks for this streamlined draft, version 3. I have added one phrase that colleagues in Southeast Asia have urged us to include to capture the full range of interventions needed (it's highlighted) but otherwise have left all of your changes intact. Everyone, is this version acceptable to all? I'd love to be able to move this forward this week. Thanks, Jan From: Steven A. Osofsky <s.osofsky@cornell.edu> Sent: Thursday, March 26, 2020 12:10 PM To: Vertefeuille, Jan < Jan. Vertefeuille@WWFUS.ORG> Cc: Suzan Murray <MurrayS@si.edu>; Peter Daszak <daszak@ecohealthalliance.org>; Walzer, Christian REDACTED ; Jonna Mazet <jkmazet@ucdavis.edu>; Keith Martin <kmartin@cugh.org>; Valitutto, Marc <ValituttoM@si.edu>; Steven A. Osofsky <s.osofsky@cornell.edu>; Christine Kreuder Johnson <ckjohnson@ucdavis.edu>; Maggie Kinnaird <mkinnaird@wwf.panda.org>; REDACTED REDACTED; catherine Machalaba <machalaba@ecohealthalliance.org>; Hemley, Ginette <ginette.HEMLEY@WWFUS.ORG>; O Criodain, Colman <</pre> REDACTED >; Aileo Weinmann <WeinmannA@nwf.org>; Martin Gilbert <m.gilbert@cornell.edu> Subject: Re: FOR REVIEW: Joint call to action on COVID-19 Great to see so many colleagues chipping-in, recognizing we all come from different personal and institutional perspectives. In the spirit of trying to hone-in on a common messaging denominator, I've tried to simplify the piece even a bit more recognizing the complexities of the issues we've all been thinking about get sacrificed in the process. But perhaps that's necessary given this exercise's primary objective. Keep safe everyone, Steve

"Vertefeuille, Jan" < Jan. Vertefeuille@WWFUS.ORG>

From:

An Open Letter to Global Policymakers

The world is in crisis. The novel coronavirus disease known as COVID-19 is costing the lives of increasing numbers of people and devastating the global economy.

Tragically, this type of pandemic was predicted for years by infectious disease experts. We didn't know where or when it would arrive, but we knew it would occur and that it would likely come from a zoonotic outbreak – whereby a pathogen jumps from animals to humans. We could have and should have been prepared to prevent or halt it before it became extremely damaging.

We know what needs to be done to greatly decrease the likelihood of future pandemics. Wildlife trafficking substantially increases our globally shared risk. Wildlife markets that sell live animals of different species warehoused together in unsanitary conditions, like those that can often be found in Asian urban centers, are mixing vessels for the emergence of dangerous viruses in human populations.

We call on policymakers everywhere to immediately and urgently undertake these steps to reduce the chances of another pandemic:

- Shut down high-risk wildlife markets, with a priority focus on those in high-density urban areas
- Urgently scale up efforts to combat wildlife trafficking and halt trade of high-risk taxa
- Strengthen efforts to reduce consumer demand for high-risk wildlife products

In our hyper-connected modern world, the emergence of a new virus anywhere can impact people everywhere. We are now at the moment to join forces across nations, sectors, scientific disciplines and civil society to ensure that never again does high-risk wildlife trade lead to a global pandemic.

From: "Vertefeuille, Jan" <Jan. Vertefeuille@WWFUS.ORG>

Sent: 03/31/2020 8:30:19 AM (-07:00)

To: REDACTED ; "Steven A. Osofsky" <s.osofsky@cornell.edu>
Cc: "Suzan Murray" <MurrayS@si.edu>; "Peter Daszak" <daszak@ecohealthalliance.org>; "Walzer,
Christian" < REDACTED ; "Jonna Mazet" <jkmazet@ucdavis.edu>; "Keith Martin" <kmartin@cugh.org>; "Valitutto,
Marc" <ValituttoM@si.edu>; "Christine Kreuder Johnson" <ckjohnson@ucdavis.edu>; "Maggie Kinnaird"
<mkinnaird@wwf.panda.org>; "Fine, Amanda" REDACTED ; "Catherine Machalaba"

Subject: RE: FOR REVIEW by COB 2 APRIL: Joint call to action on COVID-19

Attachments: Open Letter to Global PolicymakersDraftv4.docx

Thanks, Sue.

Let's make the **deadline COB Thursday, 2 April**, for agreement. After that, I suggest that we allow – and encourage -- other groups or experts to sign on, but that the text will be closed for revisions.

I've put back in some of the background info that Maggie noted had been taken out, but otherwise left this otherwise untouched. Same text is in the attached document and below for easy access:

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From: Lieberman, Susan < REDACTED

Sent: Monday, March 30, 2020 11:44 PM

To: Vertefeuille, Jan <Jan. Vertefeuille@WWFUS.ORG>; Steven A. Osofsky <s.osofsky@cornell.edu>
Cc: Suzan Murray <MurrayS@si.edu>; Peter Daszak <daszak@ecohealthalliance.org>; Walzer, Christian

REDACTED
; Jonna Mazet <jkmazet@ucdavis.edu>; Keith Martin <kmartin@cugh.org>; Valitutto, Marc

<ValituttoM@si.edu>; Christine Kreuder Johnson <ckjohnson@ucdavis.edu>; Maggie Kinnaird

<mkinnaird@wwf.panda.org>; Fine, Amanda

REDACTED
Catherine Machalaba

<machalaba@ecohealthalliance.org>; Hemley, Ginette <ginette.HEMLEY@WWFUS.ORG>; O Criodain, Colman

REDACTED
>; Aileo Weinmann <WeinmannA@nwf.org>; Martin Gilbert <m.gilbert@cornell.edu>

Subject: RE: FOR REVIEW: Joint call to action on COVID-19

Thanks, Jan and Steve. What's your deadline? I imagine this is near final so we won't try to get it stronger again (and we appreciate that is now stronger than it was). We have to check with a few people.

All the best, and please do check out our policy statement at WCS and COVID-19.

Sue



Susan Lieberman, Ph.D.
Vice President, International Policy
Wildlife Conservation Society
2300 Southern Boulevard, Bronx, New York 10460 USA and
1325 G St. NW, Suite 500, Washington, DC 20005
Cell/mobile phone: + REDACTED

Please visit:
WCS and COVID-19
WCS International Policy Page

From: Vertefeuille, Jan [mailto:Jan.Vertefeuille@WWFUS.ORG]

Sent: Monday, March 30, 2020 5:07 PM

To: Steven A. Osofsky <s.osofsky@cornell.edu>

Cc: Suzan Murray < Murray S@si.edu>; Peter Daszak < daszak@ecohealthalliance.org>; Walzer, Christian

Skype: sslieberman; Twitter: @sslieberman

REDACTED ; Jonna Mazet < ikmazet@ucdavis.edu >; Keith Martin < kmartin@cugh.org >; Valitutto, Marc

<ValituttoM@si.edu>; Christine Kreuder Johnson <ckjohnson@ucdavis.edu>; Maggie Kinnaird

<mkinnaird@wwf.panda.org>; Lieberman, Susan < REDACTED Fine, Amanda < REDACTED ;; Catherine Machalaba <machalaba@ecohealthalliance.org>; Hemley, Ginette <ginette.HEMLEY@WWFUS.ORG>; O Criodain,

Colman < REDACTED >; Aileo Weinmann < WeinmannA@nwf.org >; Martin Gilbert < m.gilbert@cornell.edu >

Subject: RE: FOR REVIEW: Joint call to action on COVID-19

Steve,

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Everyone, is this version acceptable to all? I'd love to be able to move this forward this week.

From: Steven A. Osofsky < s.osofsky@cornell.edu>

Sent: Thursday, March 26, 2020 12:10 PM

To: Vertefeuille, Jan < Jan. Vertefeuille@WWFUS.ORG>

Cc: Suzan Murray < <u>MurrayS@si.edu</u>>; Peter Daszak < <u>daszak@ecohealthalliance.org</u>>; Walzer, Christian

REDACTED ; Jonna Mazet < jkmazet@ucdavis.edu >; Keith Martin < kmartin@cugh.org >; Valitutto, Marc

<<u>ValituttoM@si.edu</u>>; Steven A. Osofsky <<u>s.osofsky@cornell.edu</u>>; Christine Kreuder Johnson

<<u>ckjohnson@ucdavis.edu</u>>; Maggie Kinnaird <<u>mkinnaird@wwf.panda.org</u>>; REDACTED Fine, Amanda

REDACTED; Catherine Machalaba < <u>machalaba@ecohealthalliance.org</u>>; Hemley, Ginette

<<u>WeinmannA@nwf.org</u>>; Martin Gilbert <<u>m.gilbert@cornell.edu</u>>

Subject: Re: FOR REVIEW: Joint call to action on COVID-19

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In the spirit of trying to hone-in on a common messaging denominator, I've tried to simplify the piece even a bit more—recognizing the complexities of the issues we've all been thinking about get sacrificed in the process. But perhaps that's necessary given this exercise's primary objective.

Keep safe everyone,

Steve

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We know what needs to be done to greatly decrease the likelihood of future pandemics. Wildlife trafficking substantially increases our globally shared risk. Wildlife markets that sell live animals of different species warehoused together in unsanitary conditions, like those that can often be found in Asian urban centers, are mixing vessels for the emergence of dangerous viruses in human populations.

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From: "Aileo Weinmann" <WeinmannA@nwf.org>

Sent: 03/31/2020 1:55:27 PM (-07:00)

To: "Vertefeuille, Jan" < Jan. Vertefeuille@WWFUS.ORG>; REDACTED

REDACTED "Steven A. Osofsky" <s.osofsky@cornell.edu>

Cc: "Suzan Murray" < MurrayS@si.edu>; "Peter Daszak" < daszak@ecohealthalliance.org>; "Walzer,

Christian" REDACTED >; "Jonna Mazet" <jkmazet@ucdavis.edu>; "Keith Martin" <kmartin@cugh.org>; "Valitutto,

Marc" <ValituttoM@si.edu>; "Christine Kreuder Johnson" <ckjohnson@ucdavis.edu>; "Maggie Kinnaird"

<mkinnaird@wwf.panda.org>; "Fine, Amanda" - REDACTED -; "Catherine Machalaba"

<machalaba@ecohealthalliance.org>; "Hemley, Ginette" <ginette.HEMLEY@WWFUS.ORG>; "O Criodain, Colman"

< REDACTED ; "Martin Gilbert" < m.gilbert@cornell.edu>

Subject: RE: FOR REVIEW by COB 2 APRIL: Joint call to action on COVID-19

Hi, sharing some feedback from the National Wildlife Federation. This is not a deal breaker, but for your consideration –

Overall we think the letter looks fine, and appreciate the opportunity to review. This sentence, while likely factual, feels too sweeping given this Administration's ongoing efforts to demonize China for the emergence and spread of COVID-19. Suggestion: the addition of "some" or "many" would help (see suggested edit).

Wildlife markets that sell live animals of different species warehoused together in unsanitary conditions, like those that can often be found in some/many Asian urban centers...



Aileo Weinmann Director of Communications

he | him | his

National Wildlife Federation 202-797-6855

www.nwf.org

Uniting all Americans to ensure wildlife thrive in a rapidly changing world

From: Vertefeuille, Jan < Jan. Vertefeuille@WWFUS.ORG>

Sent: Tuesday, March 31, 2020 11:30 AM

To: slieberman@wcs.org; Steven A. Osofsky <s.osofsky@cornell.edu>

Cc: Suzan Murray <MurrayS@si.edu>; Peter Daszak <daszak@ecohealthalliance.org>; Walzer, Christian

REDACTED >; Jonna Mazet < jkmazet@ucdavis.edu>; Keith Martin < kmartin@cugh.org>; Valitutto, Marc

<ValituttoM@si.edu>; Christine Kreuder Johnson <ckjohnson@ucdavis.edu>; Maggie Kinnaird

<mkinnaird@wwf.panda.org>; Fine, Amanda REDACTED >; Catherine Machalaba

<machalaba@ecohealthalliance.org>; Hemley, Ginette <ginette.HEMLEY@WWFUS.ORG>; O Criodain, Colman

REDACTED ; Aileo Weinmann < WeinmannA@nwf.org>; Martin Gilbert < m.gilbert@cornell.edu>

Subject: RE: FOR REVIEW by COB 2 APRIL: Joint call to action on COVID-19

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Let's make the **deadline COB Thursday, 2 April**, for agreement. After that, I suggest that we allow – and encourage -- other groups or experts to sign on, but that the text will be closed for revisions.

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In our hyper-connected modern world, the emergence of a new virus anywhere can impact people everywhere. We are now at the moment to join forces across nations, sectors, scientific disciplines and civil society to ensure that never again does high-risk wildlife trade lead to a global pandemic.

From: Lieberman, Susan REDACTED

Sent: Monday, March 30, 2020 11:44 PM

To: Vertefeuille, Jan < Jan. Vertefeuille@WWFUS.ORG>; Steven A. Osofsky < s.osofsky@cornell.edu>
Cc: Suzan Murray < MurrayS@si.edu>; Peter Daszak < daszak@ecohealthalliance.org>; Walzer, Christian
REDACTED ; Jonna Mazet < jkmazet@ucdavis.edu>; Keith Martin < kmartin@cugh.org>; Valitutto, Marc < ValituttoM@si.edu>; Christine Kreuder Johnson < ckjohnson@ucdavis.edu>; Maggie Kinnaird
< mkinnaird@wwf.panda.org>; Fine, Amanda REDACTED ; Catherine Machalaba
< machalaba@ecohealthalliance.org>; Hemley, Ginette < ginette.HEMLEY@WWFUS.ORG>; O Criodain, Colman < REDACTED ; Aileo Weinmann < WeinmannA@nwf.org>; Martin Gilbert < m.gilbert@cornell.edu>

Subject: RE: FOR REVIEW: Joint call to action on COVID-19

Thanks, Jan and Steve . What's your deadline? I imagine this is near final so we won't try to get it stronger again (and we appreciate that is now stronger than it was). We have to check with a few people.

All the best, and please do check out our policy statement at WCS and COVID-19.

Sue



Susan Lieberman, Ph.D. Vice President, International Policy

Wildlife Conservation Society

2300 Southern Boulevard, Bronx, New York 10460 USA and 1325 G St. NW, Suite 500, Washington, DC 20005

Cell/mobile phone: + REDACTED

Skype: sslieberman; Twitter: @sslieberman

Please visit:
WCS and COVID-19
WCS International Policy Page

From: Vertefeuille, Jan [mailto:Jan.Vertefeuille@WWFUS.ORG]

Sent: Monday, March 30, 2020 5:07 PM

To: Steven A. Osofsky <s.osofsky@cornell.edu>

Cc: Suzan Murray < MurrayS@si.edu>; Peter Daszak < daszak@ecohealthalliance.org>; Walzer, Christian

REDACTED ; Jonna Mazet < ikmazet@ucdavis.edu >; Keith Martin < kmartin@cugh.org >; Valitutto, Marc

< <u>ValituttoM@si.edu</u>>; Christine Kreuder Johnson < <u>ckjohnson@ucdavis.edu</u>>; Maggie Kinnaird

Colman < REDACTED >; Aileo Weinmann < WeinmannA@nwf.org>; Martin Gilbert < m.gilbert@cornell.edu>

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Steve,

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Everyone, is this version acceptable to all? I'd love to be able to move this forward this week.

Thanks, Jan

From: Steven A. Osofsky <s.osofsky@cornell.edu>

Sent: Thursday, March 26, 2020 12:10 PM

To: Vertefeuille, Jan < Jan. Vertefeuille@WWFUS.ORG>

Cc: Suzan Murray < <u>MurrayS@si.edu</u>>; Peter Daszak < <u>daszak@ecohealthalliance.org</u>>; Walzer, Christian

REDACTED Jonna Mazet < jkmazet@ucdavis.edu>; Keith Martin < kmartin@cugh.org>; Valitutto, Marc

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<<u>ckjohnson@ucdavis.edu</u>>; Maggie Kinnaird <<u>mkinnaird@wwf.panda.org</u>>; REDACTED Fine, Amanda

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necessary given this exercise's primary objective.	

Keep safe everyone,

Steve

From: "Vertefeuille, Jan" <Jan. Vertefeuille@WWFUS.ORG>

Sent: 04/03/2020 10:07:29 AM (-07:00)

To: "Christine Kreuder Johnson" <ckjohnson@UCDAVIS.EDU>; "Peter Daszak"

<daszak@ecohealthalliance.org>; "Jonna Mazet" <jkmazet@ucdavis.edu>

Cc: "Steven A. Osofsky" <s.osofsky@cornell.edu>; "Keith Martin" <kmartin@cugh.org>; "Valitutto,

Marc" <ValituttoM@si.edu>; "Maggie Kinnaird" <mkinnaird@wwf.panda.org>; "Catherine Machalaba"

< machalaba@ecohealthalliance.org >; "Hemley, Ginette" < ginette. HEMLEY@WWFUS.ORG >; "O Criodain, Colman" | Colman |

REDACTED >; "Aileo Weinmann" < WeinmannA@nwf.org>; "Martin Gilbert" < m.gilbert@cornell.edu>;

"SacconeM@nwf.org" <SacconeM@nwf.org>

Subject: RE: FOR REVIEW by COB 2 APRIL: Joint call to action on COVID-19

Attachments: Open Letter to Global PolicymakersDraftv4.docx

Thank you, all. I've made the two changes requested:

- Removed the reference to Asia
- Capitalized Ebola

I'd like to now close the letter to further edits and propose moving into a brief phase of seeking some additional signatories before:

- Translating this into multiple languages to be addressed to relevant decisionmakers in countries of concern and relevant donor institutions
- Publishing it on a stand-alone microsite in multiple languages that allows everyone here to link to it as useful and offers additional scientists the chance to sign on after it's initially sent to decisionmakers
- Publishing it in national newspapers in relevant countries

Action items:

- For those signing on, please be sure to respond with your name and title as you'd like it to appear, or your institution's name. Otherwise, I will use the title on your email signature. (We may have a mix of individual and institutional signers, which I think is fine to keep things moving swiftly.)
- If anyone is interested in contributing to discussions around the above plans, please let me know. Otherwise, we will keep the larger group in the loop on decisions but not all of the back and forth on plans. Please do share names of others to approach, particularly in Asian countries where this is a domestic issue or forward this email to them. Anyone have access to Bill Gates??

Thanks! Jan

From: Christine Kreuder Johnson < ckjohnson@UCDAVIS.EDU>

Sent: Friday, April 3, 2020 11:08 AM

To: Peter Daszak <daszak@ecohealthalliance.org>; Jonna Mazet <jkmazet@ucdavis.edu>; Vertefeuille, Jan <Jan.Vertefeuille@WWFUS.ORG>

Cc: Steven A. Osofsky <s.osofsky@cornell.edu>; Suzan Murray <MurrayS@si.edu>; Keith Martin <kmartin@cugh.org>; Valitutto, Marc <ValituttoM@si.edu>; Maggie Kinnaird <mkinnaird@wwf.panda.org>; Catherine Machalaba <machalaba@ecohealthalliance.org>; Hemley, Ginette <ginette.HEMLEY@WWFUS.ORG>; O Criodain, Colman <machalaba@ecohealthalliance.org>; Aileo Weinmann <WeinmannA@nwf.org>; Martin Gilbert <m.gilbert@cornell.edu>

Subject: Re: FOR REVIEW by COB 2 APRIL: Joint call to action on COVID-19

Hi Jan et al.

Thank you for your efforts to make this a well-rounded statement. I'm happy to sign on as well if you can edit as Peter suggested – the live animal market problem is certainly alive and well in many parts of the world. Kind regards

Chris

Christine Kreuder Johnson, VMD, PhD
Professor of Epidemiology and Wildlife Health
Current Director, PREDICT, Emerging Pandemic Threats Program
Director, EpiCenter for Disease Dynamics
Associate Director, One Health Institute
VM: Medicine and Epidemiology
School of Veterinary Medicine
University of California
Rm 1040, VM3B 1089 Veterinary Medicine Drive
Davis, California 95616
+1.530.752.1238

From: Peter Daszak < daszak@ecohealthalliance.org>

Date: Thursday, April 2, 2020 at 8:37 PM

To: Jonna Mazet < jkmazet@ucdavis.edu >, "Vertefeuille, Jan" < Jan. Vertefeuille@wwfus.org >

Cc: "Steven A. Osofsky" <<u>s.osofsky@cornell.edu</u>>, Suzan Murray <<u>MurrayS@si.edu</u>>, Keith Martin

< kmartin@cugh.org>, "Valitutto, Marc" < ValituttoM@si.edu>, Christine Kreuder Johnson

<<u>ckjohnson@UCDAVIS.EDU</u>>, Maggie Kinnaird <<u>mkinnaird@wwf.panda.org</u>>, Catherine Machalaba

<a href="machalaba@ecohealthal

<m.gilbert@cornell.edu>

Subject: RE: FOR REVIEW by COB 2 APRIL: Joint call to action on COVID-19

Likewise, EcoHealth Alliance will sign onto this if you can alter the phrase "Asian urban centers" to remove the specific geography – these markets are found in urban centers globally.

Cheers,

Peter

Peter Daszak

President

EcoHealth Alliance 460 West 34th Street New York, NY 10001 USA

Tel.: +1-212-380-4474

Website: www.ecohealthalliance.org

Twitter: @PeterDaszak

EcoHealth Alliance develops science-based solutions to prevent pandemics and promote conservation

From: Jonna Mazet < jkmazet@ucdavis.edu > Sent: Thursday, April 2, 2020 10:49 PM

To: Vertefeuille, Jan < Jan. Vertefeuille@wwfus.org>

Cc: Steven A. Osofsky <s.osofsky@cornell.edu>; Suzan Murray <<u>MurrayS@si.edu</u>>; Peter Daszak <daszak@ecohealthalliance.org; Keith Martin kmartin@cugh.org; Valitutto, Marc <<u>ValituttoM@si.edu</u>>; Christine Kreuder Johnson <<u>ckjohnson@ucdavis.edu</u>>; Maggie Kinnaird mkinnaird@wwf.panda.org; Catherine Machalaba machalaba@ecohealthalliance.org; Hemley, Ginette <<u>ginette.HEMLEY@wwfus.org</u>>; O Criodain, Colman
REDACTED
kmartin Gilbert <m.gilbert@cornell.edu>

Subject: Re: FOR REVIEW by COB 2 APRIL: Joint call to action on COVID-19

You can list me, Jonna

Jonna AK Mazet, DVM, MPVM, PhD

Professor of Epidemiology & Disease Ecology
Executive Director, <u>One Health Institute</u>
Director, <u>One Health Workforce – Next Generation</u> of USAID Emerging Threats Division
Director Emeritus, <u>PREDICT Project</u> of USAID Emerging Threats Division
Board of Directors, <u>Global Virome Project</u>

School of Veterinary Medicine University of California, Davis

<u>Institute for Global Health Sciences</u> University of California, San Francisco

For scheduling and logistical issues, please contact:

Ms. Mary Radford maradford@ucdavis.edu

On Wed, Apr 1, 2020 at 7:38 AM Vertefeuille, Jan < <u>Jan.Vertefeuille@wwfus.org</u>> wrote:

Sue and WCS colleagues,

That's a disappointing decision, but thanks for working with us to refine the messaging and we look forward to continuing to collaborate on addressing this public health risk.

For others, we have worked to make this a strong call to action that allows enough flexibility to be adaptable to different contexts – high-risk markets and high-risk taxa will vary by geographic and cultural context and policy advocacy will need to be different from country to country. I look forward to others' input and sign-off.

And Aileo, your comment is noted and we can modify the language around Asian urban markets.

Best, Jan

From: Lieberman, Susan <slieberman@wcs.org>

Sent: Tuesday, March 31, 2020 5:51 PM

To: Vertefeuille, Jan <Jan. Vertefeuille@WWFUS.ORG>; Steven A. Osofsky <s.osofsky@cornell.edu>;

Suzan Murray < Murray S@si.edu>; Peter Daszak < daszak@ecohealthalliance.org>; Walzer, Christian <cwalzer@wcs.org>; Jonna Mazet <ikmazet@ucdavis.edu>; Keith Martin <kmartin@cugh.org>; Valitutto, Marc <ValituttoM@si.edu>; Christine Kreuder Johnson <ckjohnson@ucdavis.edu>; Maggie Kinnaird <mkinnaird@wwf.panda.org>; Fine, Amanda <afine@wcs.org>; Catherine Machalaba <machalaba@ecohealthalliance.org>; Hemley, Ginette <ginette.HEMLEY@WWFUS.ORG>; O Criodain, REDACTED ; Aileo Weinmann < WeinmannA@nwf.org >; Martin Gilbert <m.gilbert@cornell.edu>

Subject: RE: FOR REVIEW by COB 2 APRIL: Joint call to action on COVID-19

Thank you for initiating this effort, and to everyone for all of your work to find consensus.

We appreciate that some of our suggestions have been incorporated. However, upon reflection and internal discussion, WCS is not able to sign on to this joint call.

As you know, WCS has just issued our policy statement and recommendations on the issue, and it would be confusing to sign on to something that is weaker. We think calling for action on "high risk markets" and "high risk taxa" leaves far too much flexibility and room for interpretation and limited actions; we also see this issue as going beyond wildlife trafficking. Even if governments stopped all wildlife trafficking tomorrow, that would not eliminate the risk of another similar viral outbreak. We are also working very closely with our government partners in some of the countries we are working in, with a particularly local context, and signing on to this statement also risks confusion as to what we are advocating for.

We would like to be kept in the loop as this develops, and to collaborate when possible.

Thank you for your understanding,

Sue



Susan Lieberman, Ph.D. **Vice President, International Policy**

Wildlife Conservation Society

2300 Southern Boulevard, Bronx, New York 10460 **USA** and

1325 G St. NW, Suite 500, Washington, DC 20005

Cell/mobile phone: + REDACTED

Skype: sslieberman; Twitter: @sslieberman

Please visit:

WCS and COVID-19

WCS International Policy Page

From: Vertefeuille, Jan [mailto:Jan.Vertefeuille@WWFUS.ORG]

Sent: Tuesday, March 31, 2020 11:30 AM

To: Lieberman, Susan <slieberman@wcs.org>; Steven A. Osofsky <s.osofsky@cornell.edu>

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Subject: RE: FOR REVIEW by COB 2 APRIL: Joint call to action on COVID-19

EXTERNAL EMAIL - Please Use Caution

Thanks, Sue.

Let's make the **deadline COB Thursday**, **2** April, for agreement. After that, I suggest that we allow – and encourage -- other groups or experts to sign on, but that the text will be closed for revisions.

I've put back in some of the background info that Maggie noted had been taken out, but otherwise left this otherwise untouched. Same text is in the attached document and below for easy access:

An Open Letter to Global Policymakers

The world is in crisis. The novel coronavirus disease known as COVID-19 is costing the lives of increasing numbers of people and devastating the global economy.

Tragically, this type of pandemic was predicted for years by infectious disease experts. We didn't know where or when it would arrive, but we knew it would occur and that it would likely come from a zoonotic outbreak – whereby a pathogen jumps from animals to humans. We could have and should have been prepared to prevent or halt it before it became extremely damaging.

We know what needs to be done to greatly decrease the likelihood of future pandemics. Wildlife trafficking substantially increases our globally shared risk. Wildlife markets that sell live animals of different species warehoused together in unsanitary conditions, like those that can often be found in Asian urban centers, are mixing vessels for the emergence of dangerous viruses in human populations.

We call on policymakers everywhere to immediately and urgently undertake these steps to reduce the chances of another pandemic:

- Shut down high-risk wildlife markets, with a priority focus on those in high-density urban areas
- Urgently scale up efforts to combat wildlife trafficking and halt trade of high-risk taxa
- Strengthen efforts to reduce consumer demand for high-risk wildlife products

High-risk human-wildlife interactions and interfaces that facilitated the emergence of COVID-19, SARS, ebola and H1N1 continue to exist in emerging disease hotspots globally.

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Produced in Native Format

AFROHUN NUPAS Virtual Workshop April 8, 2020





















Meeting Objectives:

- To review the OHW-NG Transition Plan and confirm milestones
- To review the findings by the global team of the AFROHUN NUPAS Assessment and confirm baseline scoring for OHW-NG documentation
- To foster a dialogue with AFROHUN Secretariat staff regarding the key areas for capacity-building as part of the Transition Plan.





















Meeting Agenda

- Review OHW-NG Transition Plan and confirm milestones (30 min)
- NUPAS Assessment Findings (90 min)
 - Methods
 - Criteria I: Presentation & Discussion
 - Criteria 2: Presentation & Discussion
 - Criteria 3: Presentation & Discussion
 - Criteria 4: Presentation & Discussion
 - Criteria 5: Presentation & Discussion
- Identify priority capabilities that require improvement before Y3 transition to direct funding (30 min)





















OHW-NG Transition Plan EcoHealth
Alliance

Ata Health Strategies

At USAID

FROM THE AMERICAN PEOPLE

WE CONTROL OF MANAGEMENT AND MANA

NUPAS Assessment Objectives

- 1. To determine whether the organization has sufficient financial and managerial capacity to manage USAID funds in accordance with U.S. Government and USAID requirements
- 2. To determine the most appropriate method of financing to use under the potential USAID award
- 3. To determine the degree of support and oversight necessary to ensure proper accountability of funds provided to the organization.











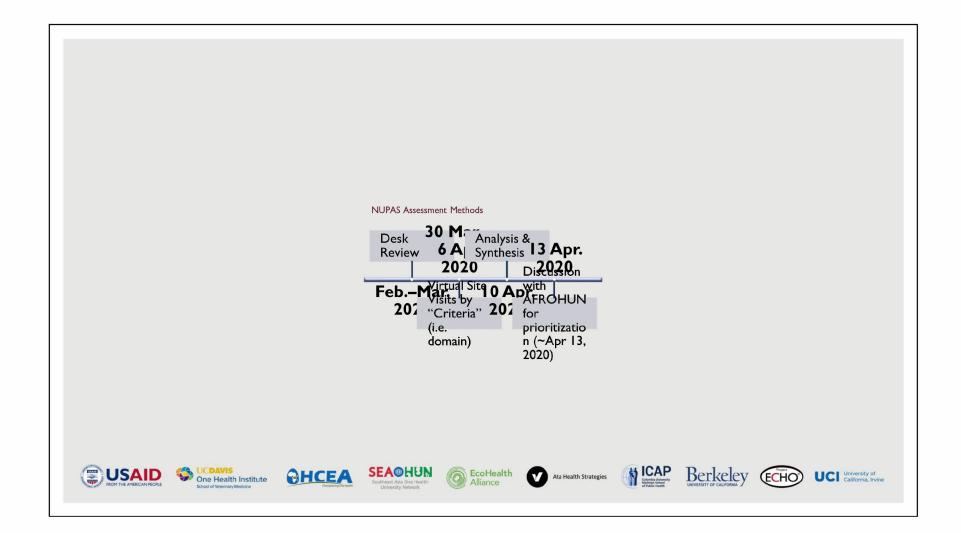


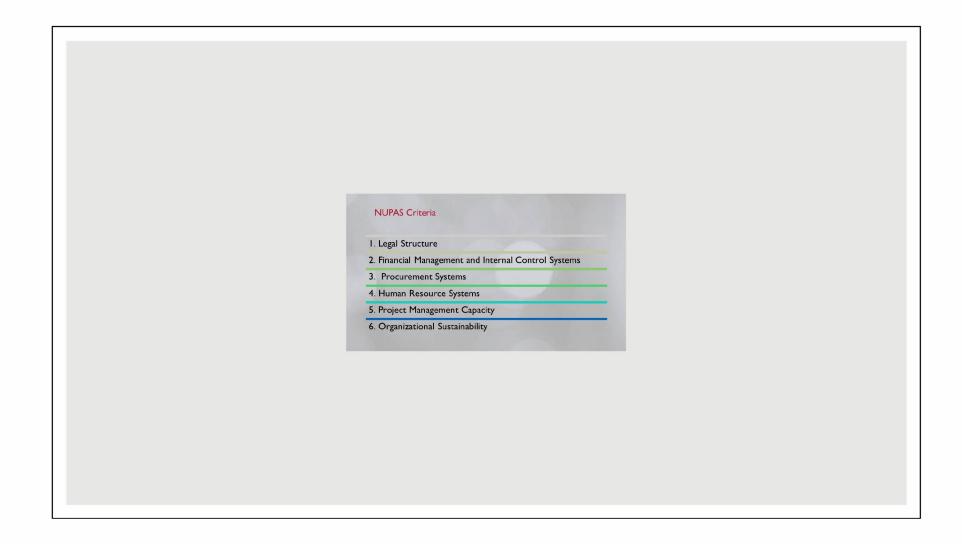












NUPAS Scoring Guide

- Inadequate (Scoring I): Significant control weaknesses could expose the organization to significant financial or other loss or otherwise significantly impair its ability to manage USAID funds. (Key deficiencies and SW that are not remediable before the award, or high risk.)
- Weak (Scoring 2): Significant control weaknesses could expose the organization to unacceptable/inadequate levels of unmanaged risk. (Some deficiencies and SW that are not easily remediable before the award, or moderate to high risk.)
- Adequate (Scoring 3): Although a control weakness was noted, compensating controls and other factors exist to reduce the residual risk within the organization to acceptable levels. (No deficiencies, SW [if any] are remediable before the award, or low to moderate risk)
- Strong (Scoring 4): Overall, a strong control framework is in place given the inherent business risks. Some improvements may be recommended to routine detailed control activities. (No deficiencies or SW or low risk.)





















Additional guidance

- If an organization does not meet certain minimum requirements (i.e., scoring a 1 to 1.5), and otherwise is found responsible, the AO can use special award conditions make the award and provide conditions that allow the organization to meet all of the minimum requirements during
- It is not necessary for an organization to have all the illustrative capabilities and attributes listed under each of the four elements (1.1 through 6.2) to support a particular scare. Other elements affecting a determination of responsibility can be taken into consideration such as: performance, education, knowledge and experience of finance staff, tone of management, sensitivity to internal controls, and commitment of management and employees to the organization's mission.











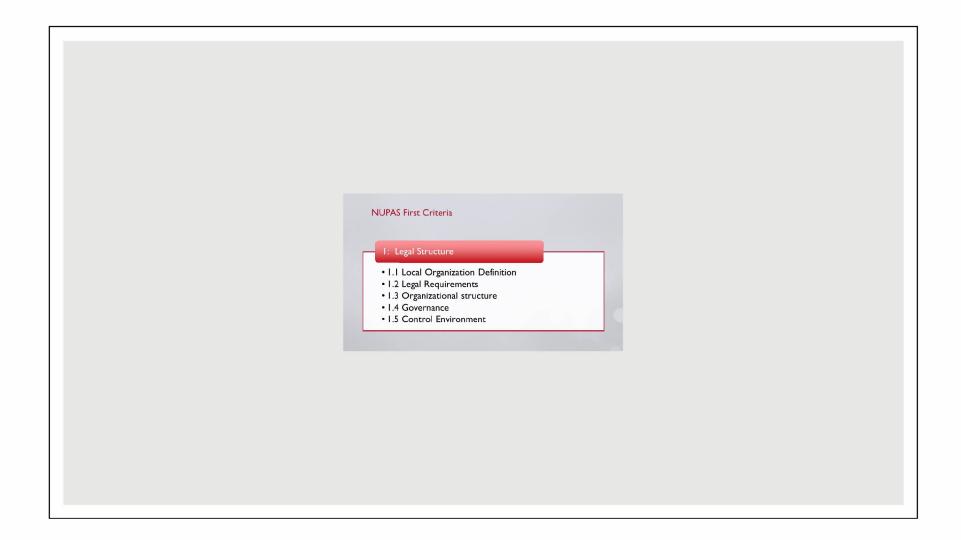














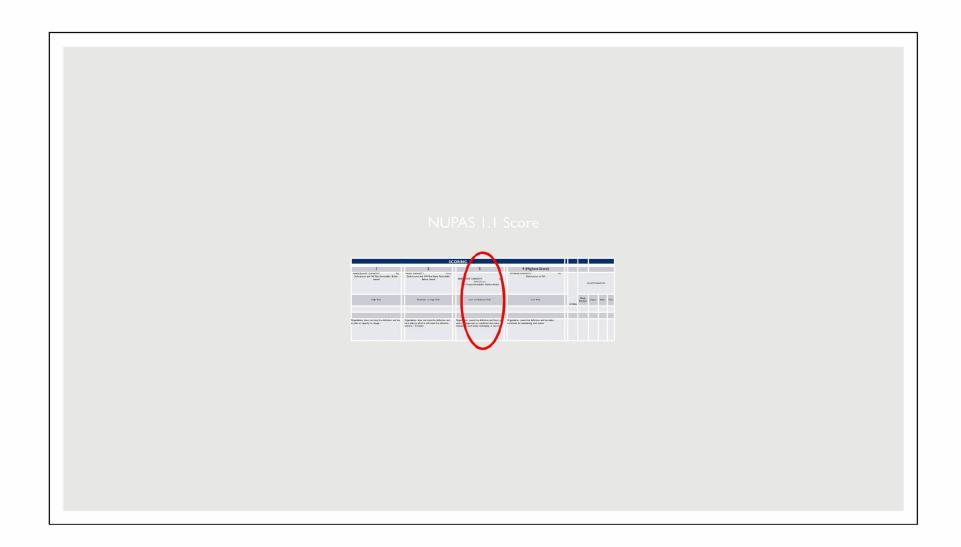
Criteria I Findings Composition of California, Irvine USAID
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School of Veterinary Medicine EcoHealth Alliance HCEA

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Prioritizing capacity-building in NUPAS criteria USAID FROM THE AMERICAN PEOPLE One Health Institute EcoHealth Alliance Characteristics Berkeley ECHO UCI California, Irvine **OHCEA**

From: "Matthew Blake" < mblake@ucdavis.edu>

Sent: 04/13/2020 5:56:48 PM (-07:00)

To: "alexandra zuber" <alexandrazuber@atahealthstrategies.com>; "Elizabeth Leasure"

<ealeasure@UCDAVIS.EDU>

Cc:"f.castillo@berkeley.edu" <f.castillo@berkeley.edu>; "oromero@haas.berkeley.edu" <oromero@haas.berkeley.edu>; "margaritamartins@berkeley.edu" <margaritamartins@berkeley.edu>; "William B. Karesh" <karesh@ecohealthalliance.org>; "daszak@ecohealthalliance.org" <daszak@ecohealthalliance.org>; "Jonna"

Mazet" <jkmazet@ucdavis.edu>; "Sam Halabi" <sfh9@georgetown.edu> **Subject:**Re: NUPAS documents for our meeting today

Attachments: NUPAS Assessment AFROHUN criteria 2 and 4.pptx, NUPAS Review Consolidated 4.13.2020.xlsx

With attachments this time...

From: alexandra zuber <alexandrazuber@atahealthstrategies.com>

Date: Monday, April 13, 2020 at 10:07 AM

To: Elizabeth Leasure <ealeasure@UCDAVIS.EDU>, Matthew Blake <mblake@ucdavis.edu> **Cc:** "f.castillo@berkeley.edu" <f.castillo@berkeley.edu>, "oromero@haas.berkeley.edu"

<oromero@haas.berkeley.edu>, "margaritamartins@berkeley.edu" <margaritamartins@berkeley.edu>,

"William B. Karesh" <karesh@ecohealthalliance.org>, "daszak@ecohealthalliance.org"

<daszak@ecohealthalliance.org>, Jonna Mazet <jkmazet@ucdavis.edu>, Sam Halabi <sfh9@georgetown.edu>

Subject: Re: NUPAS documents for our meeting today

Okay sounds good. **Matt**, can you insert your sections to Liz's excel and slides and send today? I am sending the consolidated package to AFROHUN tomorrow. Thanks!

Also, **Elizabeth**, Woutrina and Jonna asked this morning if you think any of the issues of AFROHUN's Excelbased budgeting should be noted in the NUPAS review at this time, as something that should be addressed?

Alexandra Zuber, MPP, DrPH

Founder and CEO, Ata Health Strategies, LLC Email: <u>alexandrazuber@atahealthstrategies.com</u>

Phone: +1 (617) 680-3950 LinkedIn: <u>alexandrazuber/</u>

Website: www.atahealthstrategies.com

Twitter: @alexandrazuber

From: Elizabeth Leasure <ealeasure@UCDAVIS.EDU>

Sent: Monday, April 13, 2020 12:01 PM

To: alexandra zuber <alexandrazuber@atahealthstrategies.com>; Matthew Blake <mblake@ucdavis.edu>

Cc: f.castillo@berkeley.edu <f.castillo@berkeley.edu>; oromero@haas.berkeley.edu <oromero@haas.berkeley.edu>;

margaritamartins@berkeley.edu <margaritamartins@berkeley.edu>; William B. Karesh

<karesh@ecohealthalliance.org>; daszak@ecohealthalliance.org <daszak@ecohealthalliance.org>; Jonna Mazet
<jkmazet@ucdavis.edu>; Sam Halabi <sfh9@georgetown.edu>

Subject: RE: NUPAS documents for our meeting today

Hi Alex. I made a couple changes as I was working through everything to put the slides together. An updated spreadsheet is attached. Criteria 2 is pending completion by Matt, so he'll need to provide an updated version with his info added.

Thanks,

Liz

Elizabeth Leasure

Financial Operations Manager

One Health Institute

REDACTED (cell)

530-754-9034 (office)

Skype: ealeasure

From: alexandra zuber <alexandrazuber@atahealthstrategies.com>

Sent: Monday, April 13, 2020 8:28 AM

To: Elizabeth Leasure <ealeasure@UCDAVIS.EDU>; Matthew Blake <mblake@ucdavis.edu>

Cc: f.castillo@berkeley.edu; oromero@haas.berkeley.edu; margaritamartins@berkeley.edu; William B. Karesh <karesh@ecohealthalliance.org>; daszak@ecohealthalliance.org; Jonna Mazet <jkmazet@ucdavis.edu>; Sam Halabi <sfh9@georgetown.edu>

Subject: Re: NUPAS documents for our meeting today

Also, team remember to please send me final NUPAS excel tools today as well... Or email me if you feel the tool you already sent is complete and requires no further changes. Thanks again,

Alexandra Zuber, MPP, DrPH

Founder and CEO, Ata Health Strategies, LLC

Email: alexandrazuber@atahealthstrategies.com

Phone: +1 (617) 680-3950

LinkedIn: alexandrazuber/

Website: www.atahealthstrategies.com

Twitter: @alexandrazuber

From: alexandra zuber alexandra zuber alexandrazuber@atahealthstrategies.com

Sent: Monday, April 13, 2020 11:25 AM

To: Elizabeth Leasure <ealeasure@UCDAVIS.EDU>; Matthew Blake <mblake@ucdavis.edu>

 $\textbf{Cc:} \ \underline{f.castillo@berkeley.edu} < \underline{f.castillo@berkeley.edu} >; \ \underline{oromero@haas.berkeley.edu} < \underline{oromero@haas.berkeley.edu} >; \\ \underline{oro$

margaritamartins@berkeley.edu <margaritamartins@berkeley.edu>; William B. Karesh

< karesh@ecohealthalliance.org>; daszak@ecohealthalliance.org < daszak@ecohealthalliance.org>; Jonna Mazet

<jkmazet@ucdavis.edu>; Sam Halabi <sfh9@georgetown.edu>

Subject: Re: NUPAS documents for our meeting today

Thank you! Matt, can you add your slides to this version?

Alexandra Zuber, MPP, DrPH

Founder and CEO, Ata Health Strategies, LLC

Email: alexandrazuber@atahealthstrategies.com

Phone: +1 (617) 680-3950

LinkedIn: alexandrazuber/

Website: www.atahealthstrategies.com

Twitter: @alexandrazuber

From: Elizabeth Leasure < ealeasure@UCDAVIS.EDU>

Sent: Friday, April 10, 2020 7:52 PM

To: Matthew Blake <mblake@ucdavis.edu>; alexandra zuber <alexandrazuber@atahealthstrategies.com>

Cc: <u>f.castillo@berkeley.edu</u> <<u>f.castillo@berkeley.edu</u>>; <u>oromero@haas.berkeley.edu</u> <<u>oromero@haas.berkeley.edu</u>>;

margaritamartins@berkeley.edu <margaritamartins@berkeley.edu>; William B. Karesh

<karesh@ecohealthalliance.org>; daszak@ecohealthalliance.org <daszak@ecohealthalliance.org>; Jonna Mazet

< ikmazet@ucdavis.edu>; Sam Halabi < sfh9@georgetown.edu>

Subject: RE: NUPAS documents for our meeting today

The slide deck with my criteria 2 slides added is attached.

Matt-

I created slides for your criteria 2 sections (2.3, 2.9, 2.10, 2.11, 2.12), so you just need to fill them in.

Thanks!

Liz

Elizabeth Leasure Financial Operations Manager One Health Institute

REDACTED (cell) 530-754-9034 (office) Skype: ealeasure

From: Elizabeth Leasure

Sent: Friday, April 10, 2020 3:28 PM
To: 'Sam Halabi' <sfh9@georgetown.edu>

Cc: alexandra zuber <alexandrazuber@atahealthstrategies.com>; Matthew Blake <mblake@ucdavis.edu>; f.castillo@berkeley.edu; oromero@haas.berkeley.edu; margaritamartins@berkeley.edu; William B. Kareshkaresh@ecohealthalliance.org; daszak@ecohealthalliance.org; Jonna Mazet <imarkedwaresh@ucdavis.edu>

Subject: RE: NUPAS documents for our meeting today

Hi all. I put my slides together a little differently, but I'm happy to revise as needed. The procurement and travel slides are completed in the deck attached, and I'll start working on the criteria 2 slides.

Thanks!

Liz

Elizabeth Leasure Financial Operations Manager One Health Institute

REDACTED (cell)

530-754-9034 (office) Skype: ealeasure

From: Sam Halabi < sfh9@georgetown.edu > Sent: Friday, April 10, 2020 9:27 AM

To: Elizabeth Leasure <ealeasure@UCDAVIS.EDU>

Cc: alexandra zuber <alexandrazuber@atahealthstrategies.com>; Matthew Blake <mblake@ucdavis.edu>; f.castillo@berkeley.edu; oromero@haas.berkeley.edu; margaritamartins@berkeley.edu; William B. Karesh karesh@ecohealthalliance.org; Jonna Mazet <a hr

Subject: Re: NUPAS documents for our meeting today

Dear team,

Attached you'll find the revised Excel and PowerPoint for Criterion 1 - Legal Requirements - which hopefully capture the revisions we discussed and, with respect to the latter, provide a useful template for others. I'm of course happy to receive thoughts/edits/suggestions and recirculate.

Best, Sam

On Thu, Apr 9, 2020 at 12:56 PM Elizabeth Leasure <ealeasure@ucdavis.edu> wrote:

An updated spreadsheet with travel and procurement added is attached. Still working on criteria 2.

Elizabeth Leasure Financial Operations Manager One Health Institute

REDACTED (cell) 530-754-9034 (office) Skype: ealeasure

From: alexandra zuber alexandrazuber@atahealthstrategies.com>

Sent: Thursday, April 9, 2020 9:07 AM

To: Matthew Blake <<u>mblake@ucdavis.edu</u>>; Elizabeth Leasure <<u>ealeasure@UCDAVIS.EDU</u>>; <u>f.castillo@berkeley.edu</u>; <u>oromero@haas.berkeley.edu</u>; Sam Halabi <<u>sfh9@georgetown.edu</u>>; <u>margaritamartins@berkeley.edu</u>

 $\textbf{Cc:} \ William \ B. \ Karesh < \underline{karesh@ecohealthalliance.org} >; \\ \underline{daszak@ecohealthalliance.org}; \ Jonna \ Mazet$

<jkmazet@ucdavis.edu>

Subject: NUPAS documents for our meeting today

A big thank you to the team for completing your NUPAS assessments.

We have 4 of the 6 criteria completed and consolidated in the attached Excel. Two more criteria are forthcoming tomorrow. I am looking very forward to discussing these findings with you today, and coming to agreement on what the global team feels are priorities for AFROHUN capacity-building.

I have also enclosed a possible PPT template with draft agenda for our NUPAS virtual site visit next week, so we can discuss this today as well. Thanks to Sam for helping me with an early draft of this PPT.

Lastly, today we will briefly discuss the launch of the SEAOHUN NUPAS assessment process, which is right around the corner.

As a reminder, our agenda for today is in our calendar invite.

Talk soon,

Alexandra Zuber, MPP, DrPH
Founder and CEO, Ata Health Strategies, LLC
Email: alexandrazuber@atahealthstrategies.com

Phone: +1 (617) 680-3950 LinkedIn: <u>alexandrazuber/</u>

Website: www.atahealthstrategies.com

Twitter: @alexandrazuber

From: alexandra zuber <alexandrazuber@atahealthstrategies.com>

Sent: Tuesday, April 7, 2020 1:44 PM

To: Matthew Blake <<u>mblake@ucdavis.edu</u>>; Elizabeth Leasure <<u>ealeasure@ucdavis.edu</u>>; <u>f.castillo@berkeley.edu</u></<u>r.castillo@berkeley.edu</u>>; <u>oromero@haas.berkeley.edu</u></r>
<<u>sfh9@georgetown.edu</u>>; <u>margaritamartins@berkeley.edu</u></r>

Cc: William B. Karesh < karesh@ecohealthalliance.org >; daszak@ecohealthalliance.org

<daszak@ecohealthalliance.org>; Jonna Mazet < jkmazet@ucdavis.edu>

Subject: NUPAS tool reminder & *your input on SEAOHUN dates*

Hello AFROHUN NUPAS team,

This is a friendly reminder to send me your NUPAS Excel tool by tomorrow, April 8, COB.

Also, last week I discussed a proposed timeline with SEAOHUN regarding their NUPAS, SWOT, and OCA. I further extended our original timeline to give us all a bit more breather. Can you let me know if you have any restrictions that would prevent you from working on these items during these times?

Thanks all,

Proposed timeline of activities:

- SEAOHUN attends ECHO OLS Virtual Immersion: April 16, 17, and 20
- NUPAS desk review: April 6-17, 2020
- NUPAS virtual site visits: April 27-May 1, 2020
- SWOT Interviews with Secretariat Staff: April 21-22
- SWOT Interviews with SEAOHUN Board members (4 countries): April 22-May 1
- SWOT Focus group discussions with each SEAOHUN country team (coordinators, university representatives): April 20-30, 2020
- May 11-22: Three 2 hour Zoom blocks:
 - Review NUPAS gaps & prioritize (2 hours)
 - Review OCA gaps & prioritize (2 hours)
 - Review SWOT findings and discuss implications for planning (2 hours)
 - Time window? Possible 5-7 pm PDT/ 7-9 am. We will check with UC Davis team and get back to SEAOHUN.
- Week of May 25: 1-2 Action Planning Days- review & confirm plan for capacity-building/ collaboration in Y1

Alexandra Zuber, MPP, DrPH

Founder and CEO, Ata Health Strategies, LLC Email: alexandrazuber@atahealthstrategies.com

Phone: +1 (617) 680-3950 LinkedIn: alexandrazuber/

Website: www.atahealthstrategies.com

Twitter: @alexandrazuber

From: alexandra zuber <alexandra zuber@atahealthstrategies.com>

Sent: Wednesday, April 1, 2020 4:54 PM

 $\textbf{To:} \ Matthew \ Blake < \underline{mblake@ucdavis.edu} >; \ \underline{Elizabeth} \ Leasure < \underline{ealeasure@ucdavis.edu} >; \ \underline{f.castillo@berkeley.edu}$

<<u>f.castillo@berkeley.edu</u>>; <u>oromero@haas.berkeley.edu</u> <<u>oromero@haas.berkeley.edu</u>>; Sam Halabi <sfh9@georgetown.edu>; margaritamartins@berkeley.edu <margaritamartins@berkeley.edu>

Subject: NUPAS next steps- Call + Template

Hi (ANT) Team,

Thanks for all your active work this week on calls with AFROHUN. I'm excited to see us bring this together.

In follow-up to my email last week (below), I'd like to send you some updates and a template for documenting your NUPAS review.

First, I proposed Mon, April 10 for our 2 hour Zoom session on the NUPAS with AFROHUN. They will confirm the date tomorrow and I'll notify you.

Second, I'd like to convene us on an internal call later next week to review our scores and rationale, and plan for our presentation to AFROHUN. Please can you populate this <u>Doodle</u> to share your availability?

Last, I believe the most straight forward approach to collating your findings will be for **each of you/ us to complete the attached Excel tool** for your/ our domains. This will serve as our formal written record of the review. **Please complete all the fields for your domains and send to me via email no later than COB Wed, April 8.** I will aim to consolidate and send back to you before our call. We will later translate the priorities/ highlights to a PPT we deliver to AFROHUN.

Some guidance on the NUPAS Excel tool:

- 1. In the attached tool, I separated the column "rationale" from "recommendations", so we could speak to each clearly and so that it is easier to extract in to a PPT slide
- 2. In your description of rationale, please be sure to speak to <u>each</u> of the criteria in the domain, whether AFROHUN met or failed to meet that domain and how/why. Or whether it is unclear at this time.
- 3. Please consider the attached "NUPAS questions for consideration" for your domains, which were an Appendix to the NUPAS document as helpful probing questions for each domain. Some match 1:1 the domain criteria, others are more granular.
- 4. Please do your best to substantiate each finding with reference to a document, interview, or general observation.
- 5. Error on the side of being more detailed in this rationale section, as we want a fulsome record. I would suggest 2-4 paragraphs, but use your judgement.
- 6. Note that AFROHUN will likely see this document, so please write sensitively.
- 7. Note if anything is "unclear" or "unknown" at this time.
- 8. For recommendations, please indicate what improvements you believe could/ should be made, in particular to move to the next higher score.

Let me know if you have any questions or concerns, or recommendations on how we proceed over the next two weeks. I'll be at home \bigcirc 617-680-3950.

Thanks again, Alexandra

Alexandra Zuber, MPP, DrPH

Founder and CEO, Ata Health Strategies, LLC Email: alexandrazuber@atahealthstrategies.com

Phone: +1 (617) 680-3950 LinkedIn: alexandrazuber/

Website: www.atahealthstrategies.com

Twitter: @alexandrazuber

From: alexandra zuber <alexandrazuber@atahealthstrategies.com>

Sent: Wednesday, March 25, 2020 5:30 PM

To: Matthew Blake <<u>mblake@ucdavis.edu</u>>; Elizabeth Leasure <<u>ealeasure@ucdavis.edu</u>>; <u>f.castillo@berkeley.edu</u>

 $<\!\underline{f.castillo@berkeley.edu}\!>; \underline{oromero@haas.berkeley.edu}<\!\underline{oromero@haas.berkeley.edu}\!>; Sam Halabi$

<sfh9@georgetown.edu>; margaritamartins@berkeley.edu <margaritamartins@berkeley.edu>

Subject: NUPAS next steps

Hi team,

Matt and Liz have been pulled in to some important COVID work, so I'm going to be coordinating our NUPAS assessment together moving forward. Fortunately, Matt and Liz will continue to play an important role as reviewers of many NUPAS domains as part of our team and we welcome their engagement in as much as they have time to provide it.

We have an agreed upon a schedule of dates for our NUPAS virtual site visits (attached), and I'm waiting to hear from AFROHUN if we can proceed to schedule these calls (i.e. send calendar invites). Stay tuned on that. Our original time slots were dropped from their table, but I would recommend we work out specific timing with the individuals themselves when we schedule the calls.

In the meantime, I would recommend <u>putting a placeholder in your calendars</u> for these dates, and also <u>downloading the new documents AFROHUN submitted for our NUPAS review</u>. Terra uploaded these to our AFROHUN NUPAS folder, in the general UC Davis OHW-NG Box.

I also uploaded to that folder AFROHUN's self-assessment on the OCA tool. It's also here attached for easy reference.

We are aiming for completion of our virtual site visits by **April 6**, and a presentation of findings to the Secretariat as early as April 10 (but more optimally the next week). I have a call with AFROHUN on April 1, at which point we hope to lock in this date.

In between, I'd like us to come together to review our findings together and decide on major take-aways and priorities and proof the presentation. I'll ask each of you to present your findings in a few slides, and then I can consolidate them in one deck. I'll send a template in the coming week.

As for SEAOHUN, they are compiling their documents for our desk review, and have promised to submit to us by end of March. **We should be ready to begin the desk review for them by April 6.** We need to work out with them when the NUPAS virtual site visits would work best thereafter. The next call I have with them is April 1, so I will learn more then.

Thanks all for your continued work and flexibility,

Alexandra Zuber, MPP, DrPH

Founder and CEO, Ata Health Strategies, LLC Email: alexandrazuber@atahealthstrategies.com

Phone: +1 (617) 680-3950 LinkedIn: alexandrazuber/

Website: www.atahealthstrategies.com

Twitter: @alexandrazuber

Produced in Native Format

AFROHUN NUPAS Virtual Workshop April 15, 2020





















Meeting Objectives:

- To review the OHW-NG Transition Plan and confirm milestones
- To review the findings by the global team of the AFROHUN NUPAS Assessment and confirm baseline scoring for OHW-NG documentation
- To foster a dialogue with AFROHUN Secretariat staff regarding the key areas for capacity-building as part of the Transition Plan.





















Meeting Agenda

- Review OHW-NG Transition Plan and confirm milestones (30 min)
- NUPAS Assessment Findings (90 min)
 - Methods
 - Criteria I: Presentation & Discussion
 - Criteria 2: Presentation & Discussion
 - Criteria 3: Presentation & Discussion
 - Criteria 4: Presentation & Discussion
 - Criteria 5: Presentation & Discussion
- Identify priority capabilities that require improvement before Y3 transition to direct funding (30 min)





















OHW-NG Transition Plan EcoHealth
Alliance

Ata Health Strategies

At USAID

FROM THE AMERICAN PEOPLE

WE CONTROL OF MANAGEMENT AND MANA

NUPAS Assessment Objectives

- 1. To determine whether the organization has sufficient financial and managerial capacity to manage USAID funds in accordance with U.S. Government and USAID requirements
- 2. To determine the most appropriate method of financing to use under the potential USAID award
- 3. To determine the degree of support and oversight necessary to ensure proper accountability of funds provided to the organization.











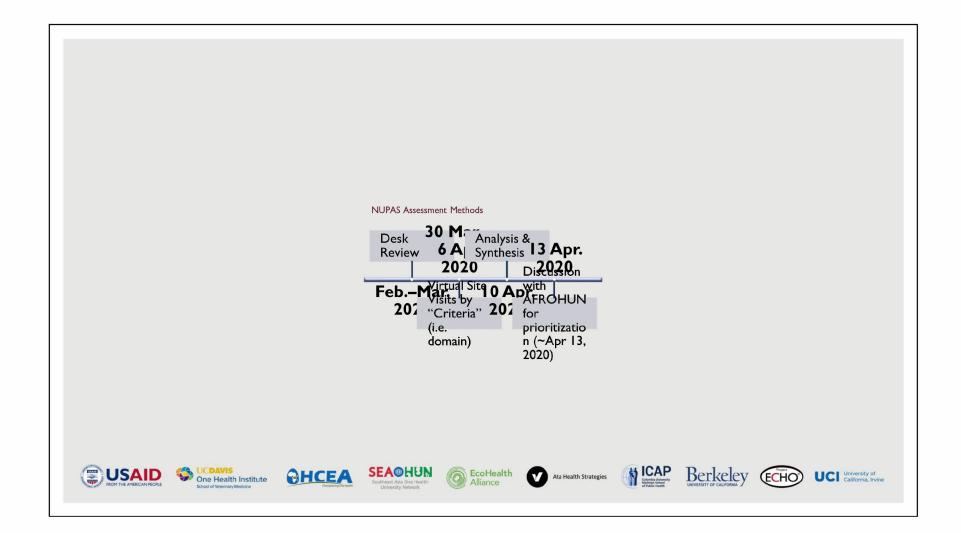


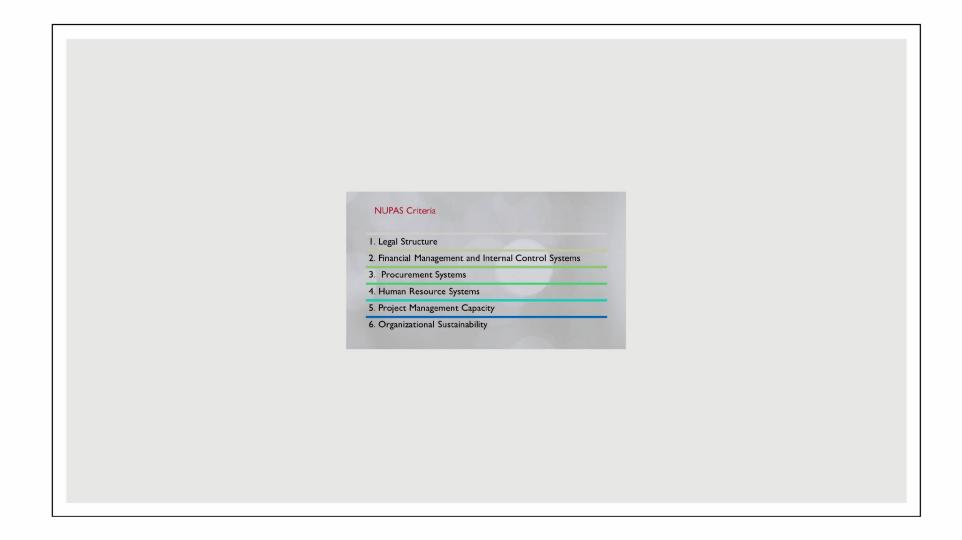












NUPAS Scoring Guide

- Inadequate (Scoring I): Significant control weaknesses could expose the organization to significant financial or other loss or otherwise significantly impair its ability to manage USAID funds. (Key deficiencies and SW that are not remediable before the award, or high risk.)
- Weak (Scoring 2): Significant control weaknesses could expose the organization to unacceptable/inadequate levels of unmanaged risk. (Some deficiencies and SW that are not easily remediable before the award, or moderate to high risk.)
- Adequate (Scoring 3): Although a control weakness was noted, compensating controls and other factors exist to reduce the residual risk within the organization to acceptable levels. (No deficiencies, SW [if any] are remediable before the award, or low to moderate risk)
- Strong (Scoring 4): Overall, a strong control framework is in place given the inherent business risks. Some improvements may be recommended to routine detailed control activities. (No deficiencies or SW or low risk.)





















Additional guidance

- If an organization does not meet certain minimum requirements (i.e., scoring a 1 to 1.5), and otherwise is found responsible, the AO can use special award conditions make the award and provide conditions that allow the organization to meet all of the minimum requirements during
- It is not necessary for an organization to have all the illustrative capabilities and attributes listed under each of the four elements (1.1 through 6.2) to support a particular scare. Other elements affecting a determination of responsibility can be taken into consideration such as: performance, education, knowledge and experience of finance staff, tone of management, sensitivity to internal controls, and commitment of management and employees to the organization's mission.













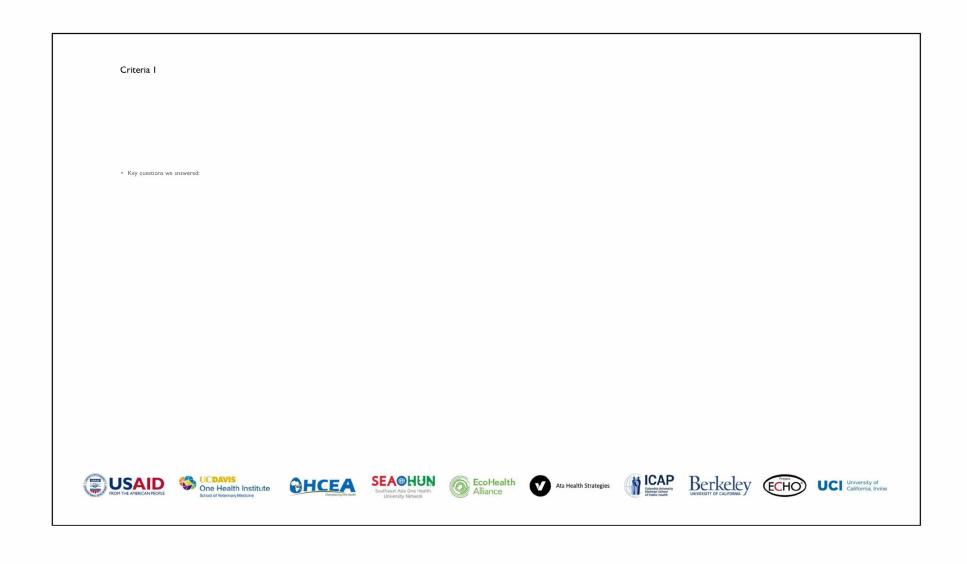










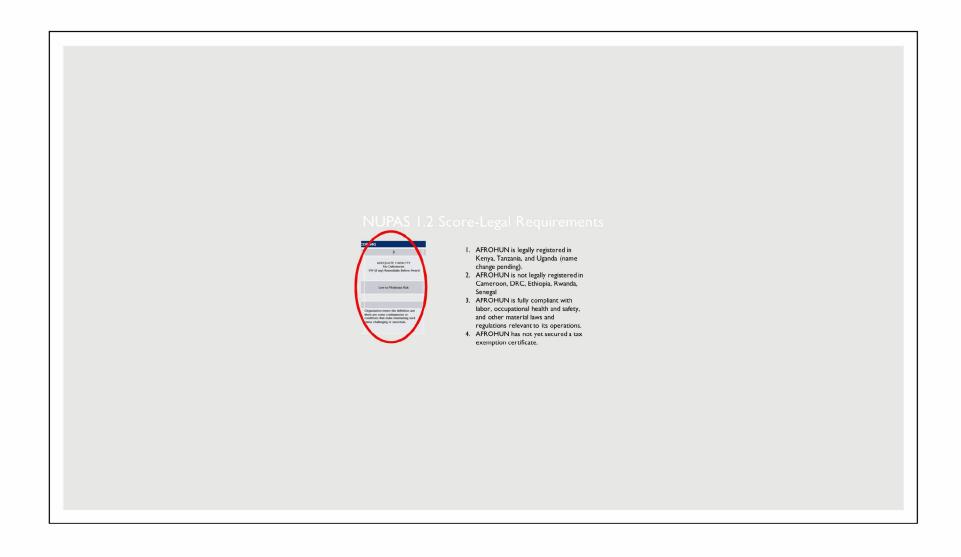




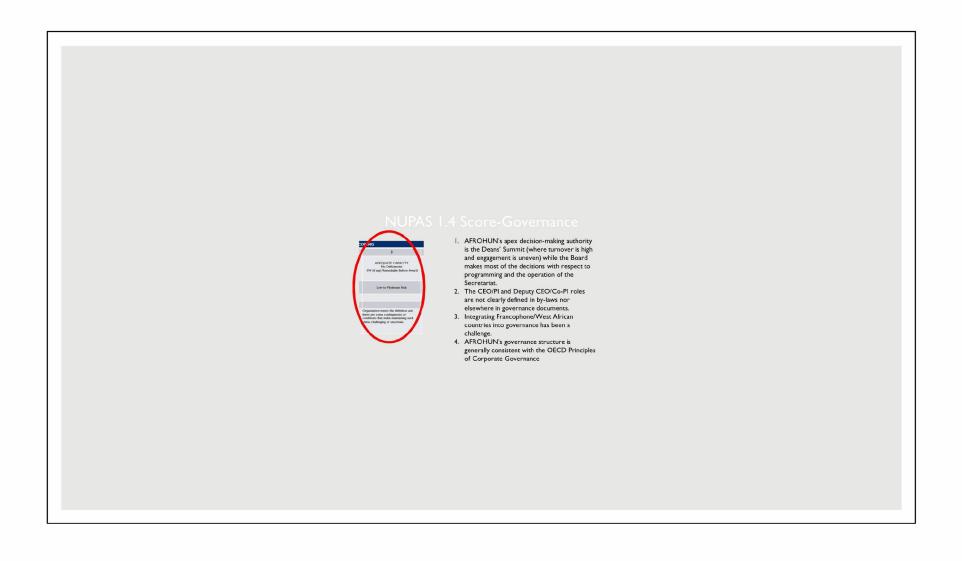


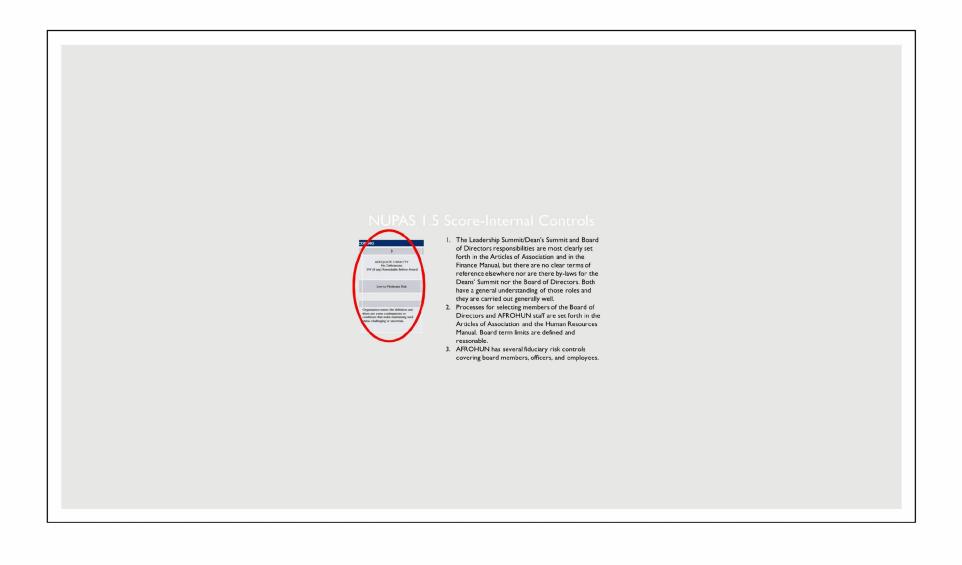
Criteria I Findings Composition of California, Irvine USAID
FROM THE AMERICAN PEOPLE

WCDAVIS
One Health Institute
School of Veternany Medicine EcoHealth Alliance HCEA









Criteria I Recommendations

- It is a priority to secure legal corporate/entity registrations for Cameroon, DRC, Ethiopia, Rwanda, Senegal and additional countries where AFROHUN undertakes activities.
- Finalize name charges where AFROHUN is already registered.
- Draft by-laws that give specific terms of reference for deans, cirectors, and officers (CEO/Pland Deputy CEO/Co-Pl) including designated committees and functions for Deans' Summit and Board of Directors and criteria for their selection and succession.
- Be-plane should ensure that dress are sufficiently diverse and have the necessary technical skills to fulfill other role and provide for specific commitment to principle of good governance. This includes ferminated the provide of t





















Criteria 2: Financial Management & Internal Control Systems 2.1 – Banking Relationship and Accounts

ADEQUATE CAPACITY No Date moles THE Proof Record	A (Highest Scote) STRONG CAPACITY MICONINSCOLOUTE			
	LowEnk			
		_	_	
O gentration have been recovered in a registered benking institution set the second is adequate by the minion/ goals. Opcoming and resintaining auditional assessmits I mitted broader file amount may be benking.	Organization kesbank accounts it a register of commercial familing involvations that are appropriate for its macker/gods.	3.75	1.50	4.00
task places for a recognized and a control basis. Adequate documentary solution and a solution process of agency accommod proposition and a solution and a s	Bank accounts are accusedly recorded on a rest filt back. As a recording or a rest filt back. I show the date the receive to a shown defined on the receive and who present strategies and appropriate filters, with a compounting or grown a offset.	3.50	1.00	4.00
Pakses signifere <u>adoptate</u> , regularments covering regular bank resum literam. Adequate as loss in lather annotational grammones 60 kpp.	De Bans of excision <u>special</u> would ensemble covering organism blank reconcidention. Appropriate action is fallen on any seconcerning increases of stage.	3.75	1.50	4.00
	Average score	3.67	3.33	4,00

- Desk Review Score: 3.33; Baseline Score after Virtual Site visit: 4.0
- AFROHUN has multiple accounts (2 in Uganda one in each country they operate in) with a registered commercial bank.
- Bank reconciliations done on a monthly basis.
 These reconciliations are done by the country administrator at the country level and reviewed and approved by the Secretariat.
- The Financial Manual sufficiently covers a number of key topics, including account management and reconcliation.
- No changes recommended.





















Criteria 2: Financial Management & Internal Control Systems 2.2 – Accounting/Bookkeeping System



- Desk Review Score: 3.00; Baseline Score after Virtual Site visit: 3.5
- AFROHUN Secretariat and country chapters use the desktop version of the Quickbooks platform for account management;
- Recommend switching to the online version to allow the Secretaria: to operate more effectively and monitor country-level spending in real time.
- Financial transactions are logged on a regular basis a double-entry system.
- Recommend additional training for country administrators and managers in financial management, as many of these individuals do not have experience in this area.











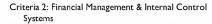












nts General Ledger, Financial Statements



- Desk Review Score: 3.00; Baseline Score after Virtual Site visit: 3.0
- Chart of Accounts and General Ledger may need to be revisited with any accounting system change even just to online Quickbooks system
- In general, the basics of the accounting function of AFROHUN are in adequate shape.





















Criteria 2: Financial Management & Internal Control Systems 2.4 – Variance Analysis (Budget to Actual Cost)

3 ADEQUATE CAPACITY No Deficiencies SWEFen; Ferrefields before Award	4 (Highest Score) STRONG CAVACITY No bullistecks or SW			
Low to Moderate Rok	New Plat	score	Dail Easter Virtual of	
Indexists Silvenial imports and or companied by houtige rides and seriance analysis (budget to actual and creates).	<u>Ingenerate</u> Francistropars, are exemptation by horiger data and existing analysis (hartjet to actual and covers).	3.50	3.00	400
regreen menagen goversty nonew lines (alregarly and tide corrective action.	mogram managers con property encounterward reports and take corrective action.	3.40	3.00	3.80
The signification has affected problems, presentures and positives in placeful adequate war ance analysis (budget to what roof) of program and injurishing financial data.	The organisation has <u>appropriate</u> , pulsos, proceduros and gracitios or plan to remor expossy interrugular vector and rising the result cost of program and operating francial data	3.50	3.00	400
	Average Score	3.47	5.00	3.55

- Desk Review Score: 3.00; Baseline Score after Virtual Site visit: 3.93





















Criteria 2: Financial Management & Internal Control Systems 2.5 – Allowable and Unallowable Cost























Criteria 2: Financial Management & Internal Control Systems

2.7 – Payments-Segregation of Duties

	4 (Highest Score)			
ADEQUATE CAPACITY No Colicionales SW (Flory) Remediable Solore Award	STRONG CAPACITY No Deficiencies or SW			
	(nor tisk			Minusi sits visit
Payment are supported by adecuate focumentation Policies, procedures and practices may fall short of best precision.	There are well thought out and documented policies, procedures and practices that saleguard the payment process.	3.75	3.50	4.00
focumentation Policies, procedures and practices may fall short of best	documented policies, procedures and practices that saleguard the	3.75	3.50	4.00

- Desk Review Score: 3.25;
 Baseline Score after Virtual Site visit: 4.0
- Financial manual clearly describes policies and procedures for the payment process.
- Supporting documentation provided by AFROHUN indicates that these procedures are being followed consistently.
- No changes recommended.





















Criteria 2: Financial Management & Internal Control Systems

2.8 – Accounting Cycle-Segregation of Duties

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- Desk Review Score: 3.0;
 Baseline Score after Virtual
 Site visit: 4.0
- Financial manual clearly describes segregation of duties for approvals, with multiple individuals and approvals throughout accounting processes.
- No changes recommended.











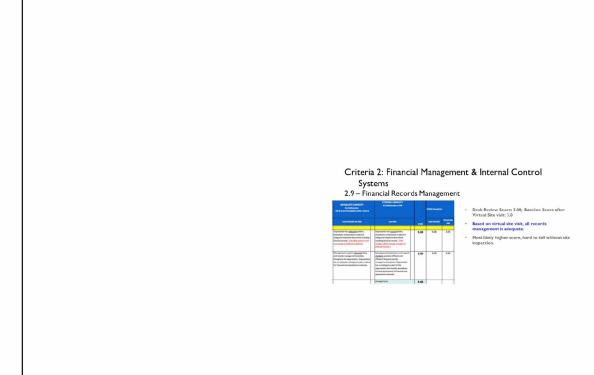






















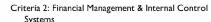












Systems
2 10 – Sources of Fur

- Desk Review Score: 2.50; Baseline Score after Virtual Site visit: 2.75
- Without additional outside funding, this section cannot be assessed
- SKA all exist to perform, need funding to execute.

























OHCEA

USAID FROM THE AMERICAN PEOPLE

One Health Institute

SEA@HUN Southeast Asia One Health University Network EcoHealth Alliance

Ata Health Strategies

Perkeley University of California, Irvine

Criteria 2: Financial Management & Internal Control Systems

2.13 - Financial Management Personnel



- · CVs provided by Secretariat and reviewed,
- Regional Manager for Finance & Administration, in particular, has extensive financial management experience (including pre-OHW USAID project experience) and a masters-level degree in accounting.
- Financial staff have clear grasp of the principles and practices of financial management, and have the capacity to produce financial reports, conduct budget analyss, and develop cost projections to meet the operational needs of AFROHUN.





















Criteria 3: Procurement Systems 3.1 – Procurement Policies, Procedures, & Practices



- Desk review score: 3.4; Baseline score after virtual site visit: 4.0
- Procurement procedures are robust and clearly stated in the Operations Manual;
- Varying levels of review and approval are required based on the value of the acquisition using a tiered structure;
- Multiple individuals and committees (ad hoc evaluation committee, contracts committee) are involved in the process, with clearly delineated roles and responsibilities;
- Administrative staff are well versed in the procurement procedures and requirements, and new staff are oriented on OHCEA's policies, including procurement.





















Criteria 3: Procurement Systems

3.2 - Compliance with Policies & Procedures-

Reasonableness of Price



- Desk Review Score: 3.25; Baseline Score after Virtual Site visit: 3.90
- Criteria for decision making is well-defined in the Operations Manual, though language specifically addressing how to determine if a cost is "reasonable" is not included in the document itself;
- Supporting documentation for exemplar procurement transactions at multiple levels was reviewed and found to be complete and consistent with the procedures outlined in the Operations Manual.
- Recommend adding guidance for determining cost "reasonableness" to the Operations Manual.





















Criteria 3: Procurement Systems

3.3 - Procurement and Subawards

WEAKLAPACIN	ADECEMENT CAPACITY No Deficiencies No E and Screedally Salve Asset	# (prighest Score) STRONG CAPACITY No Conference or DM			
Organisation for suppossible and relativity resident paid provided interrupt and extends and resingenees.	Chaptering of the palabella color on and proportions that are always that color on the color of	Ingenition the publicate state and produce that are the state or precise purposes of precise purposes of precise purposes of precise purposes of management.	2.0	244	2.06
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Constitution of the area in the	Emplysechain lean hand and accords follow polices and procedures	Englans are estimated and (2000/05) false the organization's police and providing	3.4	1.00	3.80
	_	neighbor.	3.23	1.00	9.27

- Desk Review Score: 3.0; Baseline Score after Virtual Site visit: 3.27





















Criteria 4: Human Resources Systems

4.1 - Overall HR Policies & Procedures



- Desk Review Score: 3.00; Baseline Score after Virtual Site visit: 3.00
- Solid and effective HR policies exist, and the staff appears at least according to th virtual site visit to know them, understand them, and use them for operational purposes.
- Recommend Per the earlier consultant report, it would be best to create and maintain a budget and policy for staff.





















Criteria 4: Human Resources Systems

4.2 - Staff Time Management



- Desk Review Score: 3.00; Baseline Score after Virtual Site visit: 3.00
- Paper time sheets may be the most effective given AFROHUN operations;
- Recommend electronic time sheets would be preferable as the organization gets larger
- Having only seen January timecards, and no specific OHW-NG activities were taking place (e.g. trainings) of which I am aware, it is hard to say how granular an individual time sheet gets for activity tracking.
- Recommend moving to a system of activity reporting on timesheets so that in NUPAS 2, AFROHUN can show the ease with which budget tracking on a per-person basis can take place.





















Criteria 4: Human Resources Systems

4.3 – Payroll System



- Desk Review Score: 3.2; Baseline Score after Virtual Site visit: 3.2
- Everything seems to be adequate and reconciled: no concerns
- Recommend: moving to a 3rd-party payroll system to relieve staff and ensure geographic compliance across the region.





















Criteria 4: Human Resources Systems 4.4 - Travel Policies & Procedures























Prioritizing capacity-building in NUPAS criteria Berkeley ECHO UCI California, Irvine USAID FROM THE AMERICAN PEOPLE One Health Institute EcoHealth Alliance

From: predict-request@ucdavis.edu on behalf of "David J Wolking" <djwolking@ucdavis.edu>

Sent: 04/16/2020 1:40:05 PM (-07:00)

To: "William B. Karesh" <karesh@ecohealthalliance.org>

Cc: "David Wolking" <djwolking@ucdavis.edu>; "Ava Sullivan" <sullivan@ecohealthalliance.org>;

"Chris Johnson" <ckjohnson@ucdavis.edu>; "predict@ucdavis.edu" <predict@ucdavis.edu>

Subject: [predict] Re: PPE procurement and USAID funds

Thanks Billy!!

On Thu, Apr 16, 2020 at 1:04 PM William B. Karesh < karesh@ecohealthalliance.org > wrote:

Ehab is in London right now. I guess it's like Chris and Jonna's **REDACTED** - no one really disappears completely. But, we stopped paying Ehab and the Jordan team on schedule last year.

The lab team there at JUST are really good and could provide technical advice and support to the GoJ as they do routinely as needed.

He joined the call because Chris and Andrew both said they were interested in what might be needed in Jordan, so we asked him and Zaidoun to join the call if they had time.

Hope that helps but let me know if you need more info.`

BK

William B. Karesh, D.V.M

Executive Vice President for Health and Policy

EcoHealth Alliance 460 West 34th Street - 17th Floor New York, NY 10001 USA

+1.212.380.4463 (direct)

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www.ecohealthalliance.org

President, OIE Working Group on Wildlife

Co-chair, IUCN Species Survival Commission - Wildlife Health Specialist Group

EPT Partners Liaison, USAID Emerging Pandemic Threats - PREDICT-2 Program

EcoHealth Alliance develops science-based solutions to prevent pandemics and promote conservation.

On Apr 16, 2020, at 3:22 PM, David J Wolking < djwolking@ucdavis.edu> wrote:

Hey,

See message below on Jordan. Is Ehab **REDACTED**? Any insight on that below? He joined our call today so figured he was in the loop and still in Jordan very much engaged.

David

----- Forwarded message -----

From: **David J Wolking** < <u>djwolking@ucdavis.edu</u>>

Date: Thu, Apr 16, 2020 at 12:21 PM

Subject: Re: PPE procurement and USAID funds To: Andrew Clements aclements@usaid.gov

Cc: David J Wolking < djwolking@ucdavis.edu >, Alisa Pereira Emerging Threats Division < apereira@usaid.gov >, Amalhin Shek < ashek@usaid.gov >, Christine Kreuder Johnson

<ckjohnson@ucdavis.edu>, Tracey Goldstein <tgoldstein@ucdavis.edu>

Hi Andrew,

Ehab joined our Africa region call today and said he was in touch with the mission in Jordan, I'll follow-up on his sabbatical status and location as that change hasn't been communicated to us. Great that they have funds and a mechanism, really excellent news!

I think we could manage remote technical support but of course we'd should clarify what the expectations and needs are in advance. We are planning to provide global team technical assistance to all country networks (exception the China, Egypt, etc...) so happy to continue the discussion with USAID/Jordan and Billy to find a path forward.

David

On Thu, Apr 16, 2020 at 11:05 AM Andrew Clements <a clements@usaid.gov> wrote:
On a related topic (sort of), I had a chat today with the Jordan mission. They think the need there is to hire a coordinator who can help the GOJ plan and coordinate testing. They said the Predict person (assume they meant Ehab) is REDACTED

The mission has the funds and mechanism to do a local hire, but hey were wondering if Predict can provide remote technical support to that person if needed.

Andrew P. Clements, Ph.D.
Senior Scientific Advisor
Emerging Threats Division/Office of Infectious Diseases/Bureau for Global Health
U.S. Agency for International Development

Mobile phone: 1-571-345-4253 Email: <u>aclements@usaid.gov</u> On Apr 16, 2020, at 6:29 PM, David J Wolking < djwolking@ucdavis.edu > wrote:

Hi Andrew, Amalhin, and team,

After holding a calls with our Asia and Africa networks this week, we have a question about PPE procurement. Can funds from our extension be used for local (e.g., in-country) procurement of PPE? We understand it as a pause on PPE procurement from our supply chain not necessarily a "prohibition" across the board on any PPE purchases if done locally to help with emerging needs.

Thanks for helping us understand and guide our teams,

David

--

David J. Wolking
Senior Manager, Global Programs, <u>One Health Institute</u>
Global Operations Officer, <u>PREDICT Project</u> of USAID Emerging Threats Division
Senior Manager, <u>PREEMPT Project</u>
School of Veterinary Medicine
University of California, Davis

--

David J. Wolking
Senior Manager, Global Programs, <u>One Health Institute</u>
Global Operations Officer, <u>PREDICT Project</u> of USAID Emerging Threats Division
Senior Manager, <u>PREEMPT Project</u>
School of Veterinary Medicine
University of California, Davis

--

David J. Wolking
Senior Manager, Global Programs, <u>One Health Institute</u>
Global Operations Officer, <u>PREDICT Project</u> of USAID Emerging Threats Division
Senior Manager, <u>PREEMPT Project</u>
School of Veterinary Medicine
University of California, Davis

--

David J. Wolking
Senior Manager, Global Programs, <u>One Health Institute</u>
Global Operations Officer, <u>PREDICT Project</u> of USAID Emerging Threats Division
Senior Manager, <u>PREEMPT Project</u>
School of Veterinary Medicine
University of California, Davis

From: "Deborah Thomson DVM" - REDACTED

Sent: 06/09/2020 7:12:05 PM (-07:00)

To: "Dr. Mark Lutschaunig" < mlutschaunig@avma.org >; "Johnson, JJ"

<JJ.Johnson@mail.house.gov>; "Joe Annelli" REDACTED "Chris Krueder-Johnson"

<ckjohnson@ucdavis.edu>; "Jonna Mazet" <jkmazet@ucdavis.edu>; "Peter Daszak" <daszak@ecohealthalliance.org>; michele.barry@stanford.edu

Subject: Press Releases | Press | Chairman's Newsroom | Chairman | The U.S. Senate Committee on

Health, Education, Labor & Pensions

Flagging this important and timely opportunity to provide feedback

Https://www.help.senate.gov/chair/newsroom/press/senate-health-committee-chairman-alexander-says-congress-should-prepare-this-year-for-the-next-pandemic

From: Jonna Mazet <jkmazet@ucdavis.edu>

To: Christine Kreuder Johnson <ckjohnson@ucdavis.edu>

CC: Ava Sullivan <sullivan@ecohealthalliance.org>;Aleksei MacDurian

<chmura@ecohealthalliance.org>;Kevin Olival <Olival@ecohealthalliance.org>;Tammie

O'Rourke <torourke@metabiota.com>;William B. Karesh

<karesh@ecohealthalliance.org>;David John Wolking <djwolking@ucdavis.edu>

Sent: 7/14/2020 10:32:12 AM

Subject: Re: Reminder: P2 EB Call - Monday July 6th @ 11AM Pacific

---- Message truncated -----

"Martyn Jeggo" < From: REDACTED 09/25/2017 2:23:47 PM (-07:00) Sent: "David De Pooter" <d.depooter@onehealthplatform.com> To: "Jonna Mazet" <jkmazet@ucdavis.edu>; "Amadou Sall" REDACTED : "MARK Cc: REDACTED >; "Wang Linfa" · **REDACTED** "William B. RWEYEMAMU" < Karesh" <karesh@ecohealthalliance.org>; "Dr. Ottorino Cosivi" <cosivio@paho.org>; "Andrew P. Dobson" <dobber@princeton.edu>; "Casey Barton Behravesh" <dlx9@cdc.gov>; "malik" REDACTED ; "Baljit Singh" REDACTED REDACTED >; "Gerdts, Volker" • ; "Marietjie Venter" >; "Penina Munyua" <ikg2@cdc.gov>; "Lorne Babiuk" < REDACTED **REDACTED** >; "Susan Kutz" REDACTED ; "Patrick Leighton" < REDACTED REDACTED a; "Craig REDACTED REDACTED >; "Ab Osterhaus" < Stephen" < ; "John MacKenzie" ; "Chris Vanlangendonck" <c.vanlangendonck@onehealthplatform.com> REDACTED Re: 5th International One Health Congress: Scientific Programme Committee telephone Subject: conference on October 6th

Hi David,

Unfortunately I will be flying back from Amsterdam at that time (Food Safety Meeting),

Many apologies,

Martyn

Professor Martyn Jeggo, GCEID (Geelong Centre for Emerging Infectious Diseases) DACTE

On 25 Sep 2017, at 8:30 pm, David De Pooter <d.depooter@onehealthplatform.com> wrote:

Dear Scientific Programme Committee members,

Many thanks again for the valuable feedback you provided after our latest TC on 25 July. I have now assembled all your comments and would like to suggest that we set up a telephone conference on October 6th to review the input and to finalize the programme schedule. I'll provide a more detailed meeting agenda closer to the date, but may I ask to confirm your availabilities as soon as possible? The TC will start at 16:00 CET (10am EDT - 10pm AWST/SGT)

Kindest regards,

David De Pooter management ONE HEALTH PLATFORM



www.onehealthplatform.com

<OHP_5OHC_bannerMelbourne_press.jpg>

From: predict-request@ucdavis.edu on behalf of "Leilani Francisco"

<francisco@ecohealthalliance.org>

Sent: 09/27/2017 9:10:54 AM (-07:00) **To:** "Shana Gillette" <sgillette@usaid.gov>

Cc: predict@ucdavis.edu; "William B. Karesh" <karesh@ecohealthalliance.org>; "Kendra

Chittenden" < kchittenden@usaid.gov>

Subject: [predict] RE: picture book - next steps

Thanks Shana.

We've since received feedback from Andrew and the team that the bat book should be shared with BT-A so they can benefit from the technical content around bats, etc.

We've made a few updates to the draft and will be sending it out to the larger EHP group chain shortly.

If you have any questions or would like to discuss, please feel free to give me a call anytime.

Best, Leilani

From: Shana Gillette [mailto:sgillette@usaid.gov]
Sent: Tuesday, September 19, 2017 2:47 PM

To: Leilani Francisco < francisco@ecohealthalliance.org >

Cc: predict@ucdavis.edu; William B. Karesh karesh@ecohealthalliance.org; Kendra Chittenden

< kchittenden@usaid.gov>

Subject: Re: picture book - next steps

Yes, that is correct

On Tue, Sep 19, 2017 at 2:17 PM, Leilani Francisco < francisco@ecohealthalliance.org> wrote:

Hi Shana,

It was great seeing you last week and thanks for the pre-call before the meeting with Breakthrough-Action.

During the pre-call there was mention of not biasing responses before formative exploration could be conducted on community-based recommendations. To confirm, did you want us to hold off on sharing the picture book with Breakthrough-Action for now or other?

Thanks in advance, Leilani

--

Leilani Francisco, PhD, MA, PMP

Senior Scientist | PREDICT-2 Senior Behavioral Risk Surveillance Coordinator

EcoHealth Alliance 460 West 34th Street – 17th floor New York, NY 10001

+1.212.380.4493 (direct)

REDACTED (mobile)

 $\pm 1.212.380.4465$ (fax)

www.ecohealthalliance.org

EcoHealth Alliance leads cutting-edge scientific research into the critical connections between human and wildlife health and delicate ecosystems. With this science, we develop solutions that prevent pandemics and promote conservation.

Shana Gillette, PhD Senior Risk Mitigation Adviser

Emerging Threats Division Office of Infectious Disease Bureau for Global Health

U.S. Agency for International Development (USAID)

Office Phone: 202-712-1456

Work Mobile: REDACTED Personal Cell:

Email: sgillette@usaid.gov

From: "William B. Karesh" <karesh@ecohealthalliance.org>

Sent: 11/15/2017 10:33:51 AM (-08:00) **To:** "Jonna Mazet" <jkmazet@ucdavis.edu>

Subject: Re: One of the EU projects

I'm three blocks away from Imperial College right now. Noticed it from the taxi on my way to the hotel today.

BK

On Nov 15, 2017, at 6:07 PM, Jonna Mazet < <u>jkmazet@ucdavis.edu</u>> wrote:

http://predemics.biomedtrain.eu/cms/default.aspx

My contact was:

Donnelly, Christl A < REDACTED

Prof Christl A Donnelly FMedSci

http://www.imperial.ac.uk/people/c.donnelly

http://predemics.biomedtrain.eu/cms/default.aspx

From: "James Ayukekbong" <jayukekbong@metabiota.com>

Sent: 11/29/2017 11:19:09 AM (-08:00) **To:** "Brian Bird" <bhbird@ucdavis.edu>

Cc: "William B. Karesh" <karesh@ecohealthalliance.org>; "predict-outbreak@ucdavis.edu"

outbreak@ucdavis.edu>; "Prime Mulembakani" <pmulembakani@metabiota.com>; "Karen Saylors"

<ksaylors@metabiota.com>; "Eddy Rubin" <erubin@metabiota.com>; "Tracey Goldstein" <tgoldstein@ucdavis.edu>;
"David John Wolking" <djwolking@ucdavis.edu>; "Anne Laudisoit" <laudisoit@ecohealthalliance.org>; "Jonna Mazet"

<jkmazet@ucdavis.edu>; "David McIver" <dmciver@metabiota.com>

Subject: Re: Outbreak - DRC - Cattle

Attachments: PREDICT-DRC Cattle die-off_Bondo Bas-Uele 29Nov2017.doc

Hi everyone,

Find attached the updated outbreak report of the cattle die-off event in Bas Uele, DRC as of today Wednesday 29/11/2017.

I am sorry for the delay of this report, we have been having some challenges getting information from the field.

Dear Brian, below are answers to specific questions raised;

- Are the cattle die-offs continuing? The report stated that the Minister of Ag was closing cattle markets on Nov 30th if the outbreak didn't subside. Is that still going to occur? Yes, the die-offs are continuing, the current death toll is 4150 cattle. Quarantine and prohibitions on circulation of sick cattle is in place as well as incineration of dead cattle
- Still no human illnesses associated with this event? No human transmission reported so far
- Have any further discussions been had regarding the testing of these specimens? No
 - Was FAO able to supply specific mycoplasma reagents? FAO didn't supply reagents for the testing of Mycoplasma as they didn't get approval from their officials. LABOVET has not progressed with any testing as they advised they don't have reagents.
 - Are we engaging in testing using the PREDICT priority family protocols? Yes
 - If so when may we expect the testing to be completed?
 - The PREDICT received 10 samples from the INRB on Monday the 27/11/2017 not 11 as previously reported (a sample was identified as duplicate). These samples are currently being tested for PREDICT priority viral families.
 - Preliminary results for Coronavirus and Paramyxovirus were negative for all 10 samples tested. Results of the other viral families will be available by Friday.

I will provide the complete preliminary results of PREDICT testing and any other updates by Friday. Meantime, I am happy to answer other questions or concerns.

Kind regards,

J.A Ayukekbong, PhD

Regional Coordinator /Central Africa USAID PREDICT | Metabiota Email: jayukekbong@metabiota.com Mobile: - REDACTED

Website: <u>www.metabiota.com</u> Skype: ayukekbong.ayukepi

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expressly permitted in this email transmission. If you have received this email in error, please delete it without copying or forwarding it, and notify the sender of the error by email reply.

From: Brian Bird <bhbird@ucdavis.edu>

Sent: Tuesday, November 28, 2017 1:19:06 PM

To: James Ayukekbong

Cc: William B. Karesh; predict-outbreak@ucdavis.edu; Prime Mulembakani; Karen Saylors; Eddy Rubin; Tracey Goldstein;

David John Wolking; Anne Laudisoit; Jonna Mazet

Subject: Re: Outbreak - DRC - Cattle

Hi everyone,

I am just writing to inquire about a status update for this cattle health event?

- Are the cattle die-offs continuing? The report stated that the Minister of Ag was closing cattle markets on Nov 30th if the outbreak didn't subside. Is that still going to occur?
- Still no human illnesses associated with this event?
- Have any further discussions been had regarding the testing of these specimens?
 - O Was FAO able to supply specific mycoplasma reagents?
 - Are we engaging in testing using the PREDICT priority family protocols?
 - If so when may we expect the testing to be completed?

Thanks, and any updates are much appreciated!

-Brian

From: James Ayukekbong <jayukekbong@metabiota.com>

Date: Tuesday, November 21, 2017 at 1:18 PM

To: Jonna Mazet < jkmazet@ucdavis.edu>

Cc: "William B. Karesh, D.V.M" <karesh@ecohealthalliance.org>, PREDICT-outbreak <predict-outbreak@ucdavis.edu>, Prime Mulembakani <pmulembakani@metabiota.com>, Brian Bird <bhbird@ucdavis.edu>, Karen Saylors <ksaylors@metabiota.com>, Eddy Rubin <erubin@metabiota.com>, Tracey Goldstein <tgoldstein@ucdavis.edu>, David J Wolking <djwolking@ucdavis.edu>, Anne Laudisoit <laudisoit@ecohealthalliance.org>

Subject: Re: Outbreak - DRC - Cattle

Dear all,

Find attached the updated outbreak report as of today Tuesday 21/11/2017.

Thank you Brian for the edits and revision of the initial submission, I have used tract change to accept your edits and provided revision were necessary.

Please, permit me to append below answers to the specific comments/questions raised.

"Thank you, James, for the completed health event form. Please take a look at this edited version and use this for further updates. I marked the tracked changes, and added in some documentation from the official Bas-Uele report for completeness. You'll also see some of my questions as comments.

A few important questions for follow-up:

1. The translated government report from 05 November suggests the size of this event to be 2000 animals (two-thousand). But your report from 15 October suggests only 120 (one hundred twenty)? Can you

help clarify that difference? Perhaps there are multiple reports from Bas-Uele? I'm just trying to keep the numbers consistent and updated as much as possible.

We can confirm that the size of the event is reported as >2000 cattle and have revised the number in the form.

- 2. Which cPCR tests are you considering running <u>if testing is approved?</u> This could have budgetary impacts, as we are very close to the limits in DRC and is worthy of consideration.

 We are considering testing for Filo, Flavi, Paramyxo, Influenza and Coronaviruses.
- 3. I would also recommend that in your discussions tomorrow with the other laboratory partners that a screening for bacterial pathogens on the lung biopsy material be considered. The gross appearance of the lesions in the photos of the government report are possibly suggestive of a bacterial etiology.

 Screening of Mycoplasma and bacteria pathogens is being considered, although LABOVET has presented resource challenges such as lack of reagents.

Have there been any reports of sick persons appearing after contact with these cattle? No human transmission reported yet."

Kind regards,

J.A Ayukekbong, PhD

Regional Coordinator /Central Africa USAID PREDICT | Metabiota Email: jayukekbong@metabiota.com

Mobile: REDACTED
Website: www.metabiota.com
Skype: ayukekbong.ayukepi

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From: jonna.mazet@gmail.com <jonna.mazet@gmail.com> on behalf of Jonna Mazet <jkmazet@ucdavis.edu>

Sent: Tuesday, November 21, 2017 11:35:26 AM

To: James Ayukekbong

Cc: William B. Karesh; predict-outbreak@ucdavis.edu; Prime Mulembakani; Brian Bird; Karen Saylors; Eddy

Rubin; Tracey Goldstein; David John Wolking; Anne Laudisoit

Subject: Re: Outbreak - DRC - Cattle

Dear James,

Testing of these 11 samples is approved. Please let us know, as you always do, if you are asked to provide additional support or will need to expend additional funds for this response. Brian will continue to work with you on a daily basis for this outbreak.

Thanks,

Jonna

On Mon, Nov 20, 2017 at 3:47 PM, James Ayukekbong < jayukekbong@metabiota.com > wrote:

Dear Jonna,

We can test these 11 samples within our regular surveillance plan and budget and we would still be able to perform

testing of PREDICT samples that has been planned for this year.

Cow is widely consumed in the country, as the cause of the die-off is unknown, there is fear of a potential zoonosis.

Support towards establishing the cause will inform public health surveillance approach by the government. I recommend PREDICT involvement in testing these samples.

Kind regards,

J.A Ayukekbong, PhD

Regional Coordinator /Central Africa
USAID PREDICT | Metabiota
Email: jayukekbong@metabiota.com
Mobile: + REDACTED

Website: www.metabiota.com Skype: ayukekbong.ayukepi

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From: REDACTED on behalf of Jonna Mazet

<jkmazet@ucdavis.edu>

Sent: Monday, November 20, 2017 2:14:45 PM

To: James Ayukekbong

Cc: William B. Karesh; predict-outbreak@ucdavis.edu; Prime Mulembakani; Brian Bird; Karen Saylors; Eddy

Rubin; Tracey Goldstein; David John Wolking; Anne Laudisoit

Subject: Re: Outbreak - DRC - Cattle

Hi James,

Can you test the samples within the regular surveillance plan and budgets, or would you need to supplement? As you know, we have a tight country cap on what we can spend in DRC, so if we test these cattle will it be at the expense of not being able to do other work that has been planned for this year? If so, do you still recommend going ahead as requested by INRB?

Thanks for the outbreak form, too,

Jonna

On Mon, Nov 20, 2017 at 1:54 PM, James Ayukekbong < jayukekbong@metabiota.com > wrote:

Dear all,

Find attached the PREDICT outbreak report of cattle die-off in the Bondo territory of the Bas Uélé province in DRC.

We have receive a request from the INRB to test the 11 samples shipped to the INRB and our team is ready to commence testing upon approval.

I will update as we learn more about the outbreak. In the meantime, am happy to answer any other concerns.

Kind regards,

J.A Ayukekbong, PhD

Regional Coordinator /Central Africa
USAID PREDICT | Metabiota
Email: jayukekbong@metabiota.com
Mobile: REDACTED

Website: www.metabiota.com Skype: ayukekbong.ayukepi

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From: William B. Karesh < karesh@ecohealthalliance.org >

Sent: Monday, November 20, 2017 11:25:05 AM

To: James Ayukekbong

Cc: Jonna Mazet; predict-outbreak@ucdavis.edu; Prime Mulembakani; Brian Bird; Karen Saylors; Eddy

Rubin; Tracey Goldstein; David John Wolking; Anne Laudisoit

Subject: Re: Outbreak - DRC - Cattle

Wonderful. Thanks for the up date James.

BK

William B. Karesh, D.V.M

Executive Vice President for Health and Policy

EcoHealth Alliance 460 West 34th Street - 17th Floor New York, NY 10001 USA

+1.212.380.4463 (direct) +1.212.380.4465 (fax) www.ecohealthalliance.org

President, OIE Working Group on Wildlife

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On Nov 20, 2017, at 2:08 PM, James Ayukekbong < <u>jayukekbong@metabiota.com</u> > wrote:

Thanks Billy,

Our team has been advised of this cattle die-off in North-Eastern DRC and I am preparing a PREDICT outbreak report to be shared by the end of the day.

Best regards,

J. Ayukekbong, PhD

Regional Coordinator /Central Africa USAID PREDICT | Metabiota Email: jayukekbong@metabiota.com

Mobile: <u>+</u> REDACTED Website: <u>www.metabiota.com</u> Skype: ayukekbong.ayukepi

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From: REDACTED

on behalf of Jonna Mazet

<jkmazet@ucdavis.edu>

Sent: Monday, November 20, 2017 10:21:15 AM

To: William B. Karesh

Cc: James Ayukekbong; predict-outbreak@ucdavis.edu; Prime Mulembakani; Brian Bird;

Karen Saylors; Eddy Rubin; Tracey Goldstein; David John Wolking; Anne Laudisoit

Subject: Re: Outbreak - DRC - Cattle

Thanks very much, Jonna

On Mon, Nov 20, 2017 at 10:11 AM, William B. Karesh < karesh@ecohealthalliance.org > wrote:

Hi folks,

Anne Laudisoit sent us a report on a cattle die-off in northern DRC, around Buta. Samples apparently being sent to INRB.

Anne is copied here (she teaches at the Uni. of Kisangani) and is coming on board with EHA to be our country liaison for ROC and Cdl.

See report attached.

Billy



PREDICT Outbreak or Health Event Rapid Report

Today's Date: 29 November 2017

Working Title of Investigation: Cattle die-offs in Bondo, Bas-Uele Province, DR Congo

Cumulative day of the outbreak investigation: 45

Please describe the disease signs and symptoms and species affected (humans, domesticated animals, wildlife:

On 15 October 2017, an alert of cattle die-off was sent from the provincial Ministry of Agriculture, Fish and Livestock of Bas-Uele to the National Minister of Fishery and Livestock. According to this alert, about 2,000 cattle imported from Chad by the Mbororo tribe through the Central African Republic died in the Baya village, Bondo territory, Bas-Uele province with symptoms including diarrhea, weight-loss, swelling knees and chancroid.

From a translated version of an official government report dated 05 November 2017: "The onset of the disease begins with weight loss accompanied by abundant diarrhea. Then, the disease evolves with swelling of the knees (water retention). Finally, galls (scabies like) appear on the tail followed by loss of hair. In some severe cases, on the naked tail, syphilitic or tubercular-like lesions resembling eschar were observed."

On 17 November 2017, a second alert of further cattle die-offs was reported from Bas-Uele province.

To date, there are no reports of human illnesses associated with this livestock health event.

Location	
Country:	Democratic Republic of Congo
District:	Bondo Territory
Village/Town:	Baya village
GPS Coordinates (if known):	
Date that first case(s) of illness	Unknown
occurred (if known or estimate):	
Date that PREDICT was first	17 November 2017
notified of outbreak:	

Key Information	Description	on of Findings/	Actions/Outco	mes
How many affected individuals?		Suspected:	Confirmed:	Deaths:
	Humans			
	Domestic			>4,150 cattle
	Animals			
	Wild Animals			
How was outbreak first noticed?	The Bas-Uele provincial minister of agriculture, Fishery and			
	Livestock notified t	he DRC Goverr	iment of cattle d	lie-offs in the













XXII	Bondo territory which borders the Central African Republic.
Where was the first reported case? What	The first cases were reported from the village of Baya;
is/was the extent of geographic spread?	We have no current information regarding the extent of
Include comments on the apparent speed	geographic spread from the initial village, if any.
of spread.	V 17 N
Has the country requested support from	Yes, on 17 November 2017, the head of the Virology
PREDICT (include date of request)?	laboratory at INRB requested the support of PREDICT to test
	with PREDICT protocols the 11 blood samples received from
If an archigh correspond a constructed	the field. The Ministry of Health through the INPR subject is the
If so, which government agency requested PREDICT support?	The Ministry of Health through the INRB, which is the national referential public health laboratory.
When was PREDICT response initiated	20 November 2017
(date)?	20 November 2017
Are other EPT partners involved in the	Yes, the FAO-ECTAD project.
response (which ones and how)?	
What type of assistance did PREDICT	PREDICT CC contacted the head of the Central Veterinary
initially provide? Which PREDICT	Laboratory of Kinshasa (LABOVET) and the FAO-ECTAD
personnel were involved?	team to coordinate with the INRB a plan for testing the
	samples that were received at INRB. A meeting was held at the
	PREDICT office on 21 November 2017 at 3.00 PM with the
	LABOVET, FAO-ECTAD, INRB and the Director of Animal
	Health and Production.
When was the first official	The first official acknowledgement was on 15 October, 2017
acknowledgement of the outbreak (by	by the Bas-Uele Provincial Ministry of Agriculture, Fishery
which government agency or other	and Livestock.
reputable body and date)?	
When was a response initiated and by	An investigation team from the Provincial Ministry of
whom? Which agencies were involved?	Agriculture was sent to the field on 13-20 October 2017, with
Who was in charge of the national	support from the Bas-Uele provincial Health Office.
response?	
Was the cause of the outbreak confirmed	No
by a laboratory? If so, give details of the	
initial confirmation (cause, species,	
specimen types tested and dates of testing	
if known).	
Where was the laboratory testing	Specimens were received at the Virology laboratory of INRB
performed (name of laboratory)?	on 7 November 2017, but have not been tested yet.
Number of days between initiation of	NA
government response and lab	
confirmation of laboratory results.	
Summary of the Outbreak or Event:	To be filled after active outbreak or event activity has
	ceased
Working name of the outbreak:	













Total number of cases:		Suspected:	Confirmed:	Deaths:
	Humans			
	Domestic			
	Animals			
	Wild Animals			
Summary of PREDICT Team response				
activities during the outbreak.				

PREDICT Outbreak or Health Event Response Daily Activities/Timeline

Working Title of Investigation: Cattle die-off in Bondo, Bas-Uele Province, DR Congo

Key Events:

Date	Day#	Notification or Action Taken
15 Oct 2017	-32	Alert of a cattle die-off was sent from the provincial Ministry of Agriculture, Fish and Livestock of Bas-Uele to the National Minister of Fishery and Livestock in Kinshasa DRC.
11/17/2017	1	PREDICT CC was informed by the head of the Virology laboratory at INRB that 11 blood specimens (whole blood in anticoagulant) from died and sick cattle from Bas-Uélé were received at INRB on 7 November 2017 (Specimens were sent from Bas Uélé on the 6 November according to the official Ministry report).
11/20/2017	4	PREDICT CC contacted the head of the Central Veterinary Laboratory of Kinshasa, the National coordinator of the FAO-ECTAD team and the staff at INRB in charge for testing the samples to coordinate actions on testing the samples. It was decided that serology and PCR should be performed. A meeting will be held on 11/21/2017 to decide on sharing of samples between the three laboratories (LABOVET, INRB and PREDICT).
		PREDICT CC contacted the Director of the "Centre de Surveillance de la Biodiversite" – CSB at the University of Kisangani to request for more information on the epidemiologic findings and data on the number of animals involved in the die-off. No information is available yet in Kisangani from the field.
11/21/2017	5	A meeting was held at the PREDICT office between the PREDICT team and the general administrator of the LABOVET, the national coordinator of the FAO-ECTAD team, one staff from the Ministry of Fishery and Livestock Direction of Animal Health and Productions. During this meeting:













		 The veterinarians said they are suspecting contagious bovine pleuropneumonia (CBPP). It was proposed that LABOVET should consider Serology and PCR for Mycoplasma in the testing plan. LABOVET indicated that they do not have reagents for testing and requested support from FAO, but the FAO-ECTAD is not sure as this is not a zoonosis and their project will support only outbreaks involving the five priority pathogens for DRC. However they mentioned that the request will be sent forward to FAO officials for a decision. In preparation for that assistance LABOVET will prepare a list of reagents needed and the quantities. As approved, PREDICT will test samples for PREDICT priority viral families (filovirus, coronavirus, paramyxovirus, flavivirus, and influenza viruses). Ministers of Agriculture and Fishery and Livestock will visit the LABOVET facility tomorrow. In an unrelated health event in a different region of the country, it was mentioned at the meeting that LABOVET received today 3 carcasses of cattle from Bankana on the "Plateau des Bateke" (Eastern Kinshasa) for necropsy, lesions were suggestive of Anthrax.
11/29/2017	13	 The Bas Uele provincial Ministry of Agriculture has advised that the situation is getting worst and the disease is spreading rapidly. They have indicated that about 2150 more cattle have died bringing the current mortality to about 4150 cattle. The disease has been spreading from the Baya chiefdom to Guamangi, Sao, Deni, and Goa in the Bondo territory with similar symptoms; weight loss, diarrhea, swelling of knees, lung infection, in some cases on the naked tail, syphilitic or tubercular-like lesions resembling eschar. There have not been any treatment action initiated yet, other than quarantine of sick cattle and prohibitions on circulation of sick cattle as well as incineration of dead cattle by the local red cross agents. Additionally, any slaughter must be certified by a veterinarian. The PREDICT received 10 samples from the INRB on Monday the 27/11/2017 not 11 as previously reported (a sample was identified as duplicate). These samples are currently being tested for PREDICT priority viral families.













 Preliminary results for Coronavirus and Paramyxovirus were negative for all 10 samples tested. Results of the other viral families will be available by Friday FAO has not got approval from their officials for support on this event, LABOVET has still not been able to do the test for Mycoplasma and bacteria due to lack of reagents.













In-Country Government Outbreak or Health Event Points of Contact

Public Health ministry or department:

Name:	Benoit Kebela Ilunga
Email:	REDACTED
Mobile Phone:	REDACTED
Livestock minist	ry or department:
Name:	Leopold Mulumba
Email:	REDACTED
Mobile Phone:	REDACTED
Wildlife/Enviror	ment ministry or department:
Name:	Jeff Mapilanga
Email:	REDACTED
Mobile Phone:	REDACTED
OIE focal point:	
Name:	Honore N'Lemba Mabela
Email:	REDACTED
Mobile Phone:	NLDAGILD
IHR focal point:	
Name:	Theophile Bokenge

ink local point:	
Name:	Theophile Bokenge
Email:	REDACTED
Mobile Phone:	

FAO:	
Name:	Philippe Kone
Email:	REDACTED
Mobile Phone:	REDACTED

WHO:	
Name:	Ernest Dabire
Email:	REDACTED
Mobile Phone:	

EPT ONE HEALTH WORKFORCE Project:		
Name:	Diafuka Saila Ngita	
Email:	<u>Diafuka.saila ngita@tufts.edu</u>	













Mobile Phone:	REDACTED	

EPT PREPAREDNESS and RESPONSE Project:			
Name:			
Email:			
Mobile Phone:			
Other Important Co	ontacts:		
Organization:			
Name:			
Email:			
Mobile Phone:			
T			
Organization:			
Name:			
Email:			
Mobile Phone:			
Organization:			
Name:			
Email:			
Mobile Phone:			
·			
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Mobile Phone:			
Organization:			
Name:			
Email:			
Mobile Phone:			











From: "David J Wolking" <djwolking@ucdavis.edu>

Sent: 01/05/2018 1:51:44 PM (-08:00)

To: "Katherine Leasure" <kaleasure@ucdavis.edu>; "Jonna Mazet" <jkmazet@ucdavis.edu>

Cc: "William B. Karesh" <karesh@ecohealthalliance.org>

Subject: Re: FAO presentation in Brussels

Attachments: PREDICT 2018 Brussels All Country Meeting Agenda_revised.pdf, PREDICT 2018 Brussels All

Country Meeting Agenda_revised.docx

Katie and Jonna,

Revised agenda here with time now for Andrew and Subhash. I took the FAO 15 mins out of the panel since that is more flexible and now we may only have 3 panelists due to pending visa issues.

Think this version is the one we may end up printing in Belgium unless there are any other emergency changes.

David

On Fri, Jan 5, 2018 at 1:00 PM, William B. Karesh < <u>karesh@ecohealthalliance.org</u>> wrote: Okay, thanks.

Day 3 morning also looks like there could be some slosh time to squeeze them in.

I'll tell them to be prepared for any day.

Thanks !!

BK

William B. Karesh, D.V.M

Executive Vice President for Health and Policy

EcoHealth Alliance 460 West 34th Street - 17th Floor New York, NY 10001 USA

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On Jan 5, 2018, at 3:52 PM, Jonna Mazet < jkmazet@ucdavis.edu> wrote:

Tight on time, but we'll get them back in on the first day.

Can you let them know, and we'll adjust the agenda and print to hand out?

Thanks,

J

On Thu, Jan 4, 2018 at 7:15 AM, William B. Karesh < <u>karesh@ecohealthalliance.org</u>> wrote: I think I missed this when reviewing the agenda, but I do think we discussed having someone from FAO give a 15-20 minute or so presentation on what they are doing for EPT-2.

Think we can squeeze then in somewhere?

BK

William B. Karesh, D.V.M

Executive Vice President for Health and Policy

EcoHealth Alliance 460 West 34th Street - 17th Floor New York, NY 10001 USA

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Begin forwarded message:

From: "Morzaria, Subhash (TCE)" < REDACTED

Subject: RE: Data Meeting in Brussels, Date: January 4, 2018 at 10:02:24 AM EST

To: "William B. Karesh" < karesh@ecohealthalliance.org>
Cc: "Claes, Filip (FAORAP)" < REDACTED >, "VonDobschuetz,
Sophie (AGAH)" < REDACTED >, 'Amanda Andre'
<amanda.andre@ecohealthalliance.org>

Dear Billy,
My message to you crossed the e/m that I received from USDavies with details of the agenda.

The agenda does not indicate any presentation from partners, including FAO. Can you please let us know how you would like FAO to make inputs in the discussions? This would help us better prepare for the meeting.

Look forward to catching up with you all next week.

Best,

Subhash





PREDICT All-Country Meeting Radisson Blu – Brussels Rue du Fossé aux Loups 47, 1000 Bruxelles, Belgium January 9-11, 2018

Agenda

Day 1 - January 9 (EU Officials in the afternoon session)

Morning Session: Royal A (UC Davis), Royal B (EHA), Stockholm Boardroom

(Metabiota), Copenhagen Boardroom (WCS)

9:00 am Breakouts by Global Partner (internal PREDICT Consortium partners

only)

12:00 pm Lunch on Own

Afternoon Session: Royal Ballroom

2:00 pm Welcome (Andrew Clements & Jonna Mazet)

2:15 pm PREDICT Overview & Orientation to Meeting (Jonna Mazet)

3:00 pm FAO Emerging Pandemic Threats Overview (Subhash Morzaria)

3:15 pm Progress Toward Forecasting EID Events: Modeling & Analytics

(Peter Daszak)

3:45 pm Status of PREDICT Surveillance & Path Toward Success (Christine

Johnson)

4:15 pm Strengthening One Health Networks (William Karesh)

4:45 pm PREDICT in Action Panel (moderator David Wolking) with representatives

from East Africa, West Africa, South Asia, and Southeast Asia (Prof. Rudovick Kazwala, Prof. Aiah Gbakima, Dr. Arif Islam, Dr. Joko

Pamungkas)

5:30 pm Welcome Reception

Day 2 - January 10: Royal Ballroom (Breakout Room: Copenhagen Boardroom)

9:00 am EIDITH Structural Overview & Orientation to Pull-outs (Tammie

O'Rourke)

9:45 am Viral Detection & Discovery (Tracey Goldstein & Simon Anthony)

10:45 am Break

11:15 am	Steps Toward Characterizing Risk (Overview of Workshop)	
12:15 pm	Poster Competition & Lunch	
1:30 pm	Risk Characterization Workshop (Christine Johnson & Kevin Olival)	
3:30 pm	End of Day 2 – Dinner on Own (Executive Board and External Advisors meeting 3:30-4:30 pm)	
Day 3 - January 11: Royal Ballroom (Breakout Room: Copenhagen Boardroom)		
9:00 am	OH Policy and Partnership Activities (Billy Karesh and Catherine Machalaba)	
9:45 am	Capacity Strengthening - Foundations to Futures (Woutrina Smith)	
10:30 am	Behavioral Risk Intervention Development (Leilani Francisco)	
12:00 pm	Lunch	
1:00 pm	Using Data and Modeling for Interventions and Policy (Peter Daszak)	
2:00 pm	Assisting Governments with Outbreaks (Brian Bird and James Ayukekbong)	
3:00 pm	Break	
3:15 pm	Feedback for Team from External Advisors & USAID (Billy Karesh)	
4:00 pm	Final Report Planning Session (David Wolking)	
4:30 pm	Planning for Successful Project Completion (Jonna Mazet)	
7:00 pm	Team Dinner at La Manufacture with PREDICT Staff, Advisors, & USAID Management	









Address: Rue Notre-Dame-du-Sommeil 12, 1000 Bruxelles, Belgium









PREDICT All-Country Meeting Radisson Blu – Brussels Rue du Fossé aux Loups 47, 1000 Bruxelles, Belgium January 9-11, 2018

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4:30 pm	Planning for Successful Project Completion (Jonna Mazet)	
7:00 pm	Team Dinner at La Manufacture with PREDICT Staff, Advisors, & USAID Management Address: Rue Notre-Dame-du-Sommeil 12, 1000 Bruxelles, Belgium	











From: "Amanda Paust" <apaust@usaid.gov>
Sent: 01/16/2018 12:56:11 PM (-08:00)

To: "David J Wolking" <djwolking@ucdavis.edu>

Cc: "Amalhin Shek" <ashek@usaid.gov>; "Catherine Machalaba"

<machalaba@ecohealthalliance.org>; "Billy Karesh" <karesh@ecohealthalliance.org>; "Jonna Mazet" <jkmazet@ucdavis.edu>; "Nicole Ureda" <nureda@ucdavis.edu>; "Justin Cox" <jcox@ucdavis.edu>

Subject: Re: P2 Photos_2017

Thanks David,

Yes-labs and field testing would be great. We're looking for hi-res or as close to as possible. Less posed pictures, but some are ok if they are of high-level events. We would ideally like them by this coming Friday. Please include captions and photo credits as well.

Thanks again!

Mandy Paust, M.A.

GHSA Analyst

Emerging Threats Division

Office of Infectious Disease, Bureau for Global Health

U.S Agency for International Development

Desk phone: (202)712.0635 Mobile: REDACTED

apaust@usaid.gov

On Tue, Jan 16, 2018 at 3:43 PM, David J Wolking < djwolking@ucdavis.edu > wrote: Hey Amalhin,

Just a quick note on the distribution list, Nicole Ureda and Justin Cox are no longer working with PREDICT.

I'll take a look at our photo archive and see what we can come up with. Are you looking for content and pics of teams in the field, lab, mix, etc.? Also what's the deadline to share so you have them for the report?

Apologies for the delay, we're just getting back into the swing of things after Brussels and the MLK holiday.

Best,

David

On Fri, Jan 12, 2018 at 12:13 PM, Amalhin Shek <<u>ashek@usaid.gov</u>> wrote: Happy New Year everyone!

We are currently wrapping up the GHSA Annual report and would like to know if you by any chance have photos from GHSA country activities in a specific drive we might be able to access. If so would you mind sharing some of your top picks with us?

Thanks in advance,

Amalhin Shek I Budget & Communications

Emerging Threats Division, Office of Infectious Disease

USAID/Washington, Bureau for Global Health

Phone: 202-216-3541(o) REDACTED (c) | RRB-3.6.056

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USAID-HECFAA, VP of Community Engagement

From: "William B. Karesh" <karesh@ecohealthalliance.org>

Sent: 01/26/2018 10:57:17 AM (-08:00) **To:** "Jonna Mazet" <jkmazet@ucdavis.edu>

Cc: "Brooke Genovese" < bgenovese@ucdavis.edu>; "David John Wolking"

<djwolking@ucdavis.edu>; "Amanda Andre" <amanda.andre@ecohealthalliance.org>

Subject: Re: Still Time Left to Join Us at our PMAC 2018 One Health Side Event

Ahhh, We've never heard from the OHW group. No big surprise there though.

В

On Jan 26, 2018, at 1:53 PM, Jonna Mazet < jkmazet@ucdavis.edu> wrote:

Wonderful -- I was confused because I know that there was also a plan for a OHW side meeting, and I had asked to add a speaker. they never responded to my email, so I didn't want us to be invoked on that one.

Thanks, J

On Thu, Jan 25, 2018 at 1:53 PM, William B. Karesh karesh@ecohealthalliance.org wrote: Yes. This is the side event I've mentioned a few times on SMT and EB calls that we are doing with P&R. Catherine and I selected most of the speakers. Catherine will be giving opening and closing remarks. It should be a really good session if anyone has time to go to it. It was set up as an open session, and for an audience of 90 and its already over-subscribed. Unfortunately, it overlaps with the morning of the GVP meeting.

Billy

William B. Karesh, D.V.M

Executive Vice President for Health and Policy

EcoHealth Alliance
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New York, NY 10001 USA

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President, OIE Working Group on Wildlife

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On Jan 25, 2018, at 4:46 PM, Brooke Genovese < beginning wrote:

Hey Billy/David,

Inquiring on Jonna's behalf (as she's already in transit/meetings) about this side session at PMAC. Jonna is interested in if we gave them permission to use the PREDICT logo/branding? She doesn't have an issue if we gave our blessing, but just wanted to be sure.

Also, do we know If any PREDICT-people are presenting?

Thanks! -Brooke

Brooke Genovese
PREDICT Project Support
Executive Analyst
One Health Institute
School of Veterinary Medicine
Tel: 530-752-6459
bgenovese@ucdavis.edu

From: REDACTED on behalf of Jonna Mazet

<jkmazet@ucdavis.edu>

Date: Thursday, January 25, 2018 at 1:42 PM
To: Brooke Genovese < bgenovese@ucdavis.edu>

 $\textbf{Subject:} \ \mathsf{Fwd:} \ \mathsf{Still} \ \mathsf{Time} \ \mathsf{Left} \ \mathsf{to} \ \mathsf{Join} \ \mathsf{Us} \ \mathsf{at} \ \mathsf{our} \ \mathsf{PMAC} \ \mathsf{2018} \ \mathsf{One} \ \mathsf{Health} \ \mathsf{Side} \ \mathsf{Event}$

----- Forwarded message -----

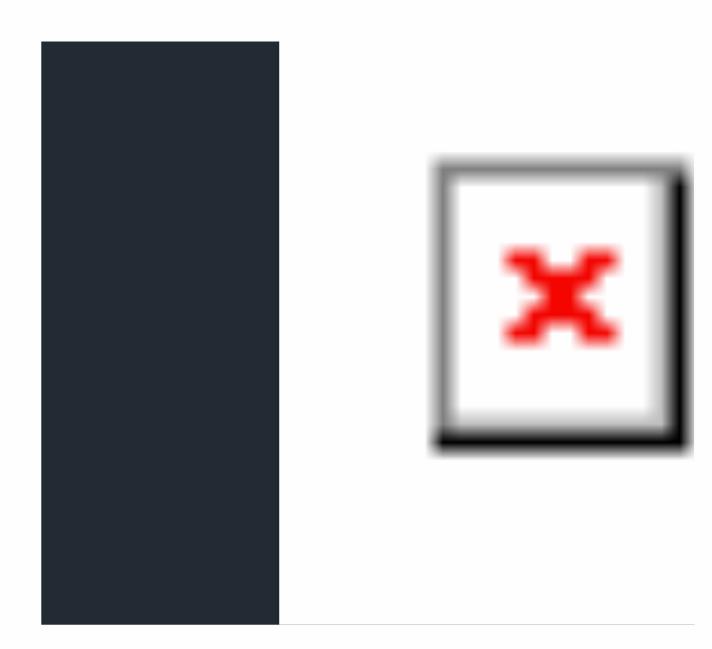
From: **Preparedness & Response Project** < <u>news@preparednessandresponse.org</u>>

Date: Thu, Jan 25, 2018 at 12:17 PM

Subject: Still Time Left to Join Us at our PMAC 2018 One Health Side Event

To: Jonna Mazet < jkmazet@ucdavis.edu>

MORE SPACE AVAILABLE - Operationalizing One Health Official Side Event at PMAC 2018





New spaces open - still time left to reserve!

Operationalizing One Health

From Assessment to Action

Two weeks ago, we sent the first invite out to our upcoming interactive, USAID-sponsored side event on "Operationalizing One Health: From Assessment to Action" at the Prince Mahidol Award Conference (PMAC) in Bangkok, Thailand on Monday, 29 January 2018. We were thrilled by the response - the event is limited by the size of the venue, and quickly reached capacity.

Because of your interest and enthusiasm, we've reopened seats for attendance at the event. Please RSVP at our <u>event registration site</u> - even if registration is closed, consider joining us on the day of the event. There may still be space available, and we look forward to seeing you there.

Operationalizing One Health: From Assessment to Action

Diverse panelists will discuss One Health frameworks, capacity assessment tools, and lessons learned in the implementation of One Health to address zoonotic disease and antimicrobial resistance risks.

Prince Mahidol Award Conference (PMAC) 2018 Side Event

Monday, January 29

8:30 a.m. - 12:30 p.m.

Centara Grand Bangkok Convention Centre at CentralWorld

LOTUS 12 room on the 22nd floor

8:30 a.m.: Registration

9:00 a.m.: Setting the Stage with One Health Frameworks

Plenary featuring Dr. Franck Berthe, World Bank

10:15 a.m.: One Health and Capacity Assessment Tools

Panel discussion with WHO, FAO, OIE, USAID's One Health Workforce (OHW), and USAID's P&R

11:15 a.m.: One Health Planning Tools

Panel discussion with USAID, CDC, WHO, the Toward a Safer World Network, and the Royal Thai Government

12:15 p.m.: Ensuring Ownership & Accountability

Closing Remarks by P&R and PREDICT

RSVP NOW

USAID Emerging Pandemic Threats suite: the Preparedness & Response, PREDICT, and One Health Workforce projects

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From: REDACTED

Sent: 03/20/2018 6:21:22 PM (-07:00)

Cc: "Catherine Machalaba" <machalaba@ecohealthalliance.org>; "William B. Karesh"

<karesh@ecohealthalliance.org>; "Jonna Mazet" <jkmazet@ucdavis.edu>

Subject: Surveillance et al. call this Thurs, March 22nd @ 10am PT/1pm ET

Attachments: 3.8.2018 surveillance call notes.docx, PREDICT Surveillance Risk Characterization session

feedback Jan 2018.docx

Hi PREDICT Surveillance Team,

Our next (and first combined surveillance/behavior/pathogen detection) call is this <u>Thurs, March 22nd @ 10am PT/1pm ET</u>. Call info and agenda are below – please let me know if you have others to add. Also, notes from our last call are attached for your review.

Draft agenda

- 1. Pathogen detection updates (Tracey)
- 2. Government Reports (Tracey/Tammie)
- 3. Behavior Updates (Leilani) -- Bat Book roll out, brief intro to behavioral risk surveillance objectives, behavioral risk instruments and tools, One Health approach to intervention development, Interim Data Review report
- 4. Risk Characterization feedback from meeting in Brussels
- 5. M&E Interface Characterization (Chris)
- 6. Semi-annual reporting *Data into EIDITH by April 6th*
- EIDITH updates adding seasons?
 No country updates this call

Call in info

Join from PC, Mac, Linux, iOS or Android

REDACTED

Or iPhone one-tap:

REDACTED

Or Telephone:

REDACTED

Meeting ID: REDACTED

International numbers available:

REDACTED

REDACTED

Talk soon! Megan

REDACTED

Research Associate
Emerging Pandemic Threats PREDICT Project
EpiCenter for Disease Dynamics
One Health Institute
UC Davis School of Veterinary Medicine

DEDACTED

skype: REDACTED

March 8th, 2018 Surveillance Team Call

Action Items and Reminders for next call:

1) No country updates next call

Participants: Sarah Olson, Dave McIver, Tammie O'Rourke, Dan O'Rourke, Jim Ayukekbong, Megan Vodzak, Mindy Rostal, Allison White, Ava Sullivan, Emily Hagan, Alice Latinne, Emma Lane, Leti Gutierriez, Leilani Francisco, Saba Quasmieh, Stephanie Martinez, Kevin Olival, Kirsten Gilardi, Woutrina Smith, Tracey Goldstein, Brooke Genovese, Terra Kelly, David Wolking, Brian Bird, Marcy Uhart, Matthew LeBreton, Jennie Lane, Jon Epstein, REDACTED Chris K Johnson

Additional funding for testing

- We submitted a request for additional testing needs and priorities beyond our currently funded PREDICT-2 budgets that included additional sample types for countries that can only afford to test one sample from an individual in the current budget, adding serological testing for exposure to viruses in humans at concurrent sampling sites, expanding PCR testing in EHP countries to include additional viral families in addition to filoviruses, and testing livestock samples in African countries where FAO previously collected concurrent samples with PREDICT-2 but that will not be tested by FAO for a proposed a \$2 million effort.
- USAID has offered \$550k (including indirect costs) to focus on expanding viral family testing in EHP countries & conducting testing on human serology samples already collected to date in select countries. Thus, for serological testing, there will be no additional field effort as this is a proof of concept to inform on and hopefully provide support for additional work beyond PREDICT-2. Sites of interest will be where we have sampled humans in the community where we have also sampled bats, rodents, and/or NHPs concurrently (within a month). Relevant serological assays are still being determined.

Age class modification

Following up on suggested age class modifications discussed last call, Mindy and Leti shared a
document with proposed changes updates to taxa specific SOPs. We will be working with
Capacity Team to finalize these changes.

Combining surveillance with behavior calls

- For future surveillance calls, we want to be sure to use our time productively and focus on remaining logistical needs, data and cleaning, test results, and risk characterization. We proposed combining surveillance calls with the pathogen detection and behavior teams. Surveillance team was in support of trying this out for the next few months.
- To give more time for discussion, we will only do country updates every other call. We will still alternate between Asia/Africa updates, but now on a monthly schedule, i.e. so the next Asia country updates will be in April, next Africa updates in May, and so forth.

Barcoding questions

- There have been several questions since the release of the barcoding data app in EIDITH. To help streamline understanding of the data upload process and understand some of the systematic errors, we will go through a few examples together in an upcoming call.
- Q: When inputting species, the species synonyms that come up have not been consistent. Is there a codebook for species synonyms?
 - o IM team uses several books for references, but a codebook does not exist and is a tool that's needed.
- Q: Is the identify of a species identified in the field ever replaced by the species name as determined by barcoding?
 - o Field identity is not ever replaced, but the app will add another field for barcoding

EIDITH updates

- The following countries still need to check in with IM team on the out of order answers on HQ questions Q29/31 (see notes from last few calls).
 - o Myanmar
 - o Kenya
 - o Cambodia
 - o Tanzania
 - o Senegal
- The EHP questionnaire template for uploading data will be available soon.

Africa country updates; field and lab activities updates, GHSA highlights, zoonotic disease prioritization workshops, update on data entry and any hurdles/concerns.

Egypt –Y4 completed 3 sampling trips for bats and humans. All field and surveillance data in EIDITH, completed 3 human sampling trips. Uploaded viral sequences for first time.

Jordan – Started sampling at concurrent site 2. Human sampling, 240 samples collected from site 1. Mission director visited one site to watch bat sampling. Having local meetings with ministries.

Ethiopia – Civil unrest slowing things down, still trying to stay active on wildlife surveillance.

Kenya – Lab testing ongoing. Recently held training with participants with 9 different provinces, sampling in Laikipia.

Tanzania —Adding new clinic now that USAID approved starting surveillance in March. Started syndromic surveillance in rural TZ near Uganda border.

Uganda – There was slowdown waiting for sub-awards, now back on track sampling humans and wildlife. Rwanda – Sequences starting to be uploaded into EIDITH.

Eastern DRC – Will resume field sampling in new year.

DRC – Obtained target for rodent and bat sampling for current season. Shifted to bushmeat markets to sample rodents and NHPs. Lab is caught up with testing and submission of events. Enrolled 100 patients in one of the hospital sites. EPT2 meeting organized by FAO today to train in-country partners from Ministries working to increase capacity in next JEE meeting 11-16th March.

RoC – Current focus in RoC is on human behavioral activities in bushmeat markets around Brazzaville; completed 12 human questionnaires and 50 ethnographic interviews in bushmeat markets and are in the process of uploading this data into EIDITH. Planning to conduct a focus group around bushmeat in an

island partway between Brazzaville and DRC. Working with MB to compile surveys and start entering into EIDITH. Animal sampling is still being considered. Head of lab at LNSC resigned, meaning EHA had to cancel visit which was to open official PREDICT lab.

Cameroon –Next trip may. Enrolled 18 patients in both sites.

Guinea – Sent first samples from Guinea to UCD. Mid-Feb, planned training on laboratory methods at the VHF laboratory with local partners. 2 sampling teams alternating time in field, 200 animals last trip. Sampling in Nzerekore in March.

Sierra Leone – In last 6 weeks, 929 animals, of those mostly bats. Community sensitization ongoing. Work stopped before March 7th elections. Tested 65 specimens, getting up to speed.

Cote d'Ivoire – Planning 2 field trips this year. Y3 samples screened in country will be CDI will be done by 30th July. Human syndromic surveillance, will be uploaded in EIDITH. CC did epi PPE training.

Liberia – Sampled in Foya district in February, all data in EIDITH, in field again sampling bats and rodents. Human behavioral risk surveys underway. Organizing a one health visit. Richard Green and Kendra were in Liberia, Predict received generally positive feedback.

Senegal – Human sampling ongoing, lab testing started again.

Ghana – Wrapped up sampling in Accra. Lassa outbreak requested assistance with PPE & rodent trapping at 3 sites.

PREDICT Surveillance Risk Characterization Session Feedback

General

- Concurrent sites (either correcting the lat/long or potentially renaming)
- Taxa by interface (multi-choice options that should have been checked consistently at the animal level were not? Cambodia found one issue regarding this...Vietnam may have a similar issue Tammie will discuss with Chris)

Indonesia, Thailand and Malaysia

- Concurrent site naming is wrong for all countries (Thailand, Indonesia, Malaysia)
- Major issue in EIDITH data site names, locations, sampling numbers, taxa are not right
- In addition to the report, it would be great to help local/in-country partners to identify where the risks/gaps are to allow them to plan surveillance, education, interventions, capacity building
- Some viruses are found regionally. Indonesia/Malaysia needs to do further virus characterization. Thailand has done already and may do more depending on future findings
- More simple summary figures would be useful.

Laos, Cambodia, Viet Nam

- Tables were a great way to review surveillance data and assess gaps
- Review of tables revealed that all interfaces at specific sites may not be included in site
 characterization if the "interface" is different for different taxa alerted EIDITH team and will be
 addressed i.e. in a village with bat guano harvesting there are also rodents in and about houses
- Tables helped clarify/illustrate that some of the human sampling was more focused and wildlife sampling more spread out geographically and so helps with decisions on where to prioritize testing i.e. human and wildlife samples that are most closely linked geographically at concurrent sites

Ethiopia

- Possible to rename concurrent sites by actual site names?
- Section 1 -- Revise Eidith entries site characterization/name is incorrect. Paragraph is generic, need to update date to be accurate for when sampling began in Ethiopia can it auto populate with first recorded sample collection from Eiditih?
- Figure 1 -- Bar graphs are more useful slope of line gives wrong impression of continuous data collection. Also, bat sampling slope inaccurate gives impression collection started in 2014, didn't start until 2016
- Figure 2 good like the cumulative bar graph. Except generic paragraph description includes humans, and Ethiopia hasn't started human sampling yet
- Figure 3 would be good to add exact numbers overlaid over the bar (hard to see exact number based on available scale)

- Figure 4 again, paragraph description includes humans
- Figure 5b really confusing titled human density, but is listing out wildlife numbers?
- Figure 6a double counts risk factors?

Uganda/Rwanda

- First of all, they were SUPER HELPFUL, and immediately allowed us to see where data in EIDITH needed to be corrected (e.g. concurrent vs independent vs "not mapped" sites) really made it easy to sit down with the IM team and fix those issues.
- We felt some kind of summary table at the start of the report that rolls up animal and human sampling by season across years for each site would be a great, before the table that provides the greater detail on subsites.
- Also, if there was some way to graphically and more succinctly represent all the data in section II
 (pie charts? bar graphs) rather than presenting it in tables with data presented as %, that would
 be great.

Myanmar

 Thank you so much for your great information and analysis of Myanmar data. Because of your thorough analysis, I found out my mistakes and misunderstanding in entering the data for size characterization. As we discussed in Brussel's meeting, please revise our data as per attached request.

Cote d'Ivoire

- Poultry and livestock data for the country are not precise at a country level and do not reflect the real situation More data of national statistics should be collected to refine this risk (beyond EIDITH scope but could be use to improve models at other levels)
- DATA: missing human samples: Bouaflé = 35 but due to a problem entering the data in the country These will be revised asap.
- All the samples remain unscreened waiting to be screened but no more reagents and positive controls.

Are data from your country displaying as expected?

- o Help to identify what missing data are in EIDITH
- o Are human data going to be displayed until approval is released?
- o Identify double gaps and delay between data entry and data display
- o Data presentation: should display till January 2018
- O Display of the cumulative sampling effort is misleading as it corresponds to 2 snapshots but not a monthly surveillance
- Useful to see display and visualize the data
- o Helpful Useful
- o Specifically like that animal/human interface
- In the table if a row has no data (empty) or is not applicable (e.g. not sampling birds), remove it for clarity
- Would be good to be able to pull out site specific data instead of a combined report

What are the critical data cleaning steps needed before risk characterization can advance?

- o General comment: to avoid having too much work load for data cleaning: each CC and CL should make sure the in-country teams have clean data prior to entry into EIDITH
- o The data look clean
- o The data are incorrect or not understandable in some tables

What are your primary objectives for risk characterization? What insights will you gain from the data? Where are the data gaps? Will you be able to compare data across seasons, years, taxa? Are we finding the same virus s in different species or at multiple site and in countries? Do you have viruses for further characterization?

- Help strengthened the characterization of the site specific contact/risky interface (based on the situational analysis priori to project start)
- o Be able to inform the government
- o Primary concern is to be able to explain the risk to the community (translation of summary reports might be relevant and should be budgeted)
- Use the risk assessment to get people interested and outreach in the One Health approach
- Test result must be issued, and interpreted and presented in a way understandable for the target government
- o Improved policies (landuse planning, public health) and surveillance system
- Improved readiness to respond to epidemics by knowing what virus are circulating where and when
- o Improved surveillance systems (refine target species)
- Act/react more actively or even proactively
- o Quicker turn around required between data submission and analyses
- Major gap in livestock data

What additional data would you like to move forward with risk characterization and which data displays would be ideal for a) government reporting, b) stakeholders meeting, c) publications?

- Human and animal movement patterns (road, logging roads, footpath, transportation, animal migration, seasonal nomadic movements, seasonal agricultural crop season, estimating the risk hunting season and hunting closure season)
- o Display of where human travel to
- Occupational distribution of humans with positive findings on a map
- Overlay / Merging data with other surveillance mapping systems (e.g. flu), vegetation cover, and administrative and road network
- o Risk map along the borders / edges risk
- o Training) capacity building in statistical treatment of PREDICT data too be able to publish
- o In non-English speaking country, translate all the reports and risk characterization reports in the national language that can be broadcasted to the authorities (help make PREDICT exist in their mind and help outreach to the population).

• Lessons learnt and surprising during the sharing of experience

- O Visualization of the data is great!
- o How difficult it is to be able to talk about risk
- o How difficult it is to scale up, integrate the data and get country specific risk maps

"Tammie O'Rourke" <torourke@metabiota.com> From:

07/12/2018 10:15:04 AM (-07:00) Sent:

REDACTED To:

"predict-surveillance@ucdavis.edu" <predict-surveillance@ucdavis.edu>; "Catherine Cc: Machalaba" <machalaba@ecohealthalliance.org>; "Billy Karesh" <karesh@ecohealthalliance.org>; "Jonna Mazet" <jkmazet@ucdavis.edu>

Subject: Re: [predict-surveillance] Surveillance call tomorrow, July 12th @ 10am PT/1pm ET

Attachments: PREDICT surveillance, behavior, and testing update June 2018_to.xlsx

hi all, I am attaching a new version for the discussion. **Tammie**

On Wed, Jul 11, 2018 at 12:06 PM,

REDACTED

> wrote:

Hi PREDICT Surveillance Team,

Our next call is tomorrow, July 12th @ 10am PT/1pm ET. Agenda and call-in options are below -- please let us know if you have other agenda items to add.

Agenda

- Y5 workplans questions (if any) (David)
- Quarterly tracker, government reports/test results in EIDITH (Tammie/Chris) -- attached
- Serology testing option (Chris)
- Syndromic surveillance -- inclusion criteria/suspected malaria patients
- What is each country doing for sequencing/cloning? **postponed until next joint call**
- Asia country updates
- Others?

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Or iPhone one-tap:

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Meeting ID: REDACTED

International numbers available:

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Talk to you soon,

REDACTED

Tammie O'Rourke

Metabiota

Senior Information Management Developer

Emerging Pandemic Threats - PREDICT Program

 $tel + 1-250-618-2460 \cdot skype$ tammie.orourke \cdot <u>www.eidith.org</u>

URL: www.metabiota.com

Produced in Native Format

From: Lipkin, Ian W. <wil2001@cumc.columbia.edu>

To: Tracey Goldstein <tgoldstein@ucdavis.edu>;Anthony, Simon J."

<sja2127@cumc.columbia.edu>

CC: Jonna Mazet <jkmazet@ucdavis.edu>

Sent: 8/17/2018 3:53:59 AM

Subject: Re: Late breaker abstract for International Meeting on Emerging Diseases and Surveillance

Approved. Enjoy Vienna.

W. Ian Lipkin, MD John Snow Professor of Epidemiology and Director Center for Infection and Immunity Mailman School of Public Health

Professor of Pathology and Neurology College of Physicians & Surgeons Columbia University 722 West 168th Street, 17th Floor

New York, NY 10032 Voice: (212) 342-9033 Fax: (212) 342-9044

Email: wil2001@cumc.columbia.edu

Kelly Harpula

Administrative Coordinator to the Director

Voice: (212) 342-9032

Email: kh2907@cumc.columbia.edu

On Aug 16, 2018, at 11:45 PM, Tracey Goldstein < tgoldstein@ucdavis.edu > wrote:

Dear All,

We would like to submit a late breaker abstract to present on the Bombali virus finding at the International Meeting on Emerging Diseases and Surveillance (IMED) meeting in Vienna in November.

Please find attached the abstract - please let me know if you have suggestions or concerns.

Thank you! Tracey

--

(530) 752-0412 (530) 752-3318 tgoldstein@ucdavis.edu From: "Nicole R Gardner" < nrgardner@ucdavis.edu>

Sent: 01/29/2019 2:18:28 PM (-08:00)

<pspandit@ucdavis.edu>; "Julie Rushmore" <rushmore@ucdavis.edu>

Cc: "Jonna Mazet" <jkmazet@ucdavis.edu>; "karesh@ecohealthalliance.org"

<karesh@ecohealthalliance.org>; "machalaba@ecohealthalliance.org" <machalaba@ecohealthalliance.org>

Subject: Surveillance Call Agenda - Jan 31, 10AM PT

Hi Surveillance Team,

Our next call will be **Thurs, Jan 31 at 10am PT / 1pm ET**. Here is the agenda and Zoom info. Please let us know if you have any agenda items to add.

Agenda

- Data Cleaning Activities
 - Resolving scientific names in species naming spreadsheets
 - Domestic species name standardization
 - Plan next steps for data cleaning
- Serology Shipment Questions

Time: Jan 31, 2019 10:00 AM Pacific Time (US and Canada)

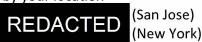
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Nicole

Nicole Gardner EID Operations Specialist

One Health Institute University of California, Davis

From:	"CLARKE" < REDACTED >
Sent:	10/10/2019 5:49:48 AM (-07:00)
To:	"RAMIREZ, Bernadette" < REDACTED
Cc:	"Christel Smeys" <c.smeys@onehealthplatform.com>; "Albert Osterhaus"</c.smeys@onehealthplatform.com>
< REDACT	ED REDACTED >;
"c.vanlangendonck@c	nehealthplatform.org" <c.vanlangendonck@onehealthplatform.org>; "Neema Heri Mwakabonga"</c.vanlangendonck@onehealthplatform.org>
< REDACTED	; "Lisa Boden" < REDACTED >; ". REDACTED
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"Marietjie Venter" <	REDACTED >; "Peninah Munyua" <ikg2@cdc.gov>; "Rebecca Katz"</ikg2@cdc.gov>
	edu>; "Larry Madoff" < REDACTED ; "Jakob Zinsstag" < REDACTED
	tmcnamara@westernu.edu>; "Jonna Mazet" <jkmazet@ucdavis.edu>; "William Karesh"</jkmazet@ucdavis.edu>
	iance.org>; "Julie Fitzpatrick" < REDACTED >; "Pip Beard"
< REDACTED	; "Joanne Sharp" < REDACTED >; "Mark Bronsvoort"_
REDACTE	77 38 38 38 38 38 38 38 38 38 38 38 38 38
"Grant Stentiford" <	REDACTED ; "Delia Grace" < REDACTED ; "DRURY, Patrick Anthony"
< REDACTED >; "R	loss Fitzgerald" < REDACTED k>; "Greg Gray" < gregory.gray@duke.edu>;
"Katinka DeBalogh" ∢	REDACTED >; "Julianna B. Lenoch" <julianna.b.lenoch@usda.gov>; "DJIKENG</julianna.b.lenoch@usda.gov>
Appolinaire" <	REDACTED ; "Richard Kock" < REDACTED >; "Dilys Morgan"
< REDACTED	>
Subject:	Re: Invitation to TC meeting of the WOHC2020 Scientific Programme Committee

Dear Christel I will be available for the call. Best regards Bob Clarke

Sent from my iPhone

On Oct 10, 2019, at 2:55 AM, RAMIREZ, Bernadette < REDACTED > wrote:

Dear Christel,

Apologies, I will not be able to participate in the call. I will be traveling on that day, en route to Bangkok. Would appreciate it if you can keep me posted with how the TC went.

Best, Bernadette

Dr Bernadette Ramirez

Scientist, Unit on Vectors, Environment and Society

Tel. direct: REDACTED
Tel. mobile: REDACTED
Email: REDACTED
Web: www.who.int/tdr
Skype: REDACTED

<image001.jpg>



From: Christel Smeys <c.smeys@onehealthplatform.com> **Sent:** 09 October 2019 18:12 REDACTED John Mackenzie < REDACTED ; Martyn Jeggo REDACTED ; MARK RWEYEMAMU < REDACTED : Linfa Wang REDACTED ; cosivio < cosivio@paho.org >; Marietjie Venter >; Peninah Munyua <ikg2@cdc.gov>; Rebecca Katz REDACTED REDACTED <rk952@georgetown.edu>; Larry Madoff < : Jakob Zinsstag >; RAMIREZ, Bernadette < REDACTED >; Tracey McNamara <tmcnamara@westernu.edu>; Jonna Mazet <jkmazet@ucdavis.edu>; William Karesh REDACTED <karesh@ecohealthalliance.org>; Julie Fitzpatrick < **REDACTED** ; Joanne Sharp < REDACTED >; Mark Bronsvoort REDACTED REDACTED >; Simon Girling < ; Sue Welburn REDACTED ; Delia Grace >; Grant Stentiford <</p> REDACTED REDACTED >; DRURY, Patrick Anthony < REDACTED ; Ross Fitzgerald ; Greg Gray <<u>gregory.gray@duke.edu</u>>; Katinka DeBalogh REDACTED >; Julianna B. Lenoch < Julianna.b.lenoch@usda.gov >; DJIKENG Appolinaire REDACTED REDACTED >; Richard Kock < REDACTED >; Dilys Morgan REDACTED >; Robert Clarke < REDACTED Cc: Albert Osterhaus < REDACTED ; John Mackenzie REDACTED >; c.vanlangendonck@onehealthplatform.org; Neema Heri Mwakabonga REDACTED >; Lisa Boden < REDACTED

Subject: Invitation to TC meeting of the WOHC2020 Scientific Programme Committee

Dear Scientific Programme Committee members

On behalf of Ab Osterhaus, chair of the Scientific Programme Committee of the 6th World One Health Congress, 14-18 June 2020 in Edinburgh, Scotland, I would like to invite you to the Scientific Programme Committee telephone conference meeting on Monday November 4, 2019 at 5 pm CET (Belgian time). The toll-free dial in details are enclosed below.

Preparations for the 6th World One Health Congress are well underway. We opened registrations and launched the call for abstracts in July and are now looking forward to shaping the programme of the One Health Science programme track. The aim of the meeting is to select the 14 session topics as well as appoint the abstract selectors.

We will provide you with a meeting agenda and relevant documents closer to the date. May I ask to confirm your participation at your earliest convenience? Many thanks in advance.

Kind regards

Christel #WOHC2020

WOHC2020 TC SPC committee
Mon, Nov 4, 2019 5:00 PM - 6:00 PM CET

Please join my meeting from your computer, tablet or smartphone.

REDACTED

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REDACTED

Germany: REDACTED Ireland: REDACTED

Italy: REDACTED

Netherlands: REDACTED New Zealand: REDACTED Norway: REDACTED

Spain: REDACTED Sweden: REDACTED Switzerland: REDACTED

United Kingdom: REDACTED

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Christel Smeys

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<image002.png>

From: Catherine Machalaba <machalaba@ecohealthalliance.org>

To: David Wolking <djwolking@ucdavis.edu>

CC: William B. Karesh karesh@ecohealthalliance.org; Chris Johnson

<ckjohnson@ucdavis.edu>;predict@ucdavis.edu ckjohnson@ucdavis.edu>;Ava Sullivan

<sullivan@ecohealthalliance.org>

Sent: 11/12/2019 5:36:57 PM

Subject: [predict] Re: P2 One Health Partnerships Final Report - Proposed Tasks and Timeline

(January 24, 2020?)

Thanks David and Chris! This sounds great and is a wonderful opportunity to show the policy and practice impact of PREDICT.

We have been working on distilling down the key themes of the country case studies so will find a nice way to present these in the report too. I will check in with Billy and Peter to ensure we can complete the socioeconomic studies with the Bangladesh team as that component is crucial for subactivity 5.2.3.

If you have any general formats or examples you would like us to follow feel free to send on. Thanks again!!!

Kind regards, Catherine

Catherine Machalaba, MPH

Policy Advisor and Research Scientist

EcoHealth Alliance 460 West 34th Street - 17th floor New York, NY 10001

1.212.380.4472 (direct) 1.401.569.7371 (mobile) 1.212.380.4465 (fax) www.ecohealthalliance.org

Chair, Veterinary Public Health Special Primary Interest Group, American Public Health Association

Program Officer, IUCN SSC Wildlife Health Specialist Group

Science Officer, Future Earth oneHEALTH Project

EcoHealth Alliance leads cutting-edge scientific research into the critical connections between human and wildlife health and delicate ecosystems. With this science, we develop solutions that prevent pandemics and promote conservation.

On Nov 12, 2019, at 6:53 PM, David J Wolking <<u>diwolking@ucdavis.edu</u>> wrote:

Hey Billy and Catherine,

We are making plans for the P2 final report as we get into the home stretch for this award. We discussed this on EB today and missed you two! In brief, our vision for the global volume of the report is for each technical team to generate an ~6-8 page section or chapter that can serve as a standalone product or policy briefing, with optional add-ons (shorter 1-2 page materials that dive deeper into findings, success stories, insights, etc.).

Our approach is for drafts of each section to go into internal "consortium peer review" so we are confident in our science and findings, and then ultimately to myself and the OHI communications team for translation (as needed) for uniform voice and style and design for delivery to USAID, Congress, and ultimately the public.

On timelines, it's getting down to the wire. We need to have draft chapters completed in January (at the latest) to enable the peer review and translation/design steps outlined above. All work on this product has to be completed by March 31, 2020 as that is the end of the award and our ability to bill staff time. Below are a

few bullets Chris pulled for your section, along with what we pushed into our Year 1 workplan (adapted directly from our original proposal). Chris is on leave for now, but we are happy to chat with you more soon on this as she and I will be leading the editorial team for the end product.

Thanks so much and looking forward to working with you...

David

One Health and Governance (Billy and Catherine)

Draft deadline: January 24, 2020? Status:

From Year 1 WorkPlan

- · Outcome: Document case studies illustrating One Health benefits; list of One Health information available from partners for case studies; identification of broad factors contributing to gender or other biases in disease risk or risk mitigation; guidance on populations that could further integrated into One Health efforts, as well as measures identified that might be taken to integrate underrepresented populations; informed consideration of potential policy changes that could result from demonstrated One Health successes.
- · Sub-activity 5.2.3. Advancing socio-economic arguments by conducting global scale analyses of the economics of pandemic mitigation vs. adaptation policies directly applied to the World Bank/FAO One World, One Health capacity building plan.

From: Ronald Waldman < ronwaldman@email.gwu.edu>

To: Jonna Mazet <jkmazet@ucdavis.edu>;Billy Karesh <karesh@ecohealthalliance.org>

Sent: 11/16/2019 8:08:01 AM

Subject: Fwd: Looking for great examples of preparedness and response

Hi Jonna and Billy,

I hope all's well with you. I got this email from Resolve to Save Lives and I'm worried a bit that they sent it around only to human health people. I think this could be a good opportunity to make a case. Do you have anything that you think they might be interested in? I'd be happy to talk to them about what they are missing. This is Tom Frieden's project.

Ron

Tel: +1 202 374 2364

Begin forwarded message:

From: Amanda McClelland <amcclelland@resolvetosavelives.org>
Subject: Looking for great examples of preparedness and response

Date: November 14, 2019 at 6:57:02 PM EST

To: Ricardo Echalar <rechalar@usaid.gov>, Richard Greene <rgreene@usaid.gov>, Ronald

Waldman <ronwaldman@email.gwu.edu>

Dear Colleagues,

RTSL are planning an inaugural report that highlights outbreaks that were stopped before they spread out of control. **THINGS THAT NEVER HAPPENED!** The report aims to focus on the growing number of countries that are successfully detecting and responding to outbreaks every day. The report will feature a series of case studies from around the world that showcase how strong epidemic preparedness stops outbreaks from spreading; saving lives and money. It would be great to try and find some community or one health examples if possible.

Our hope is to further make the case for prioritizing and investing in epidemic preparedness by highlighting the success rather than always analyzing the "mistakes".

The report will include case studies from 2019, to be launched in early 2020.

Our ask to you: We are looking for a variety of great case studies that highlight country capacity. Submit any relevant cases you or a partner has worked on, and share the link with any colleagues who might be interested. We will review the case studies and select around 10 to be further developed. Our team will support the writing of the case study working with the country or partner to highlight their achievements, focused on the how preparedness supported improved response.

Submissions will be open through December 20th. Link: https://www.surveymonkey.com/r/LYWHRLC

Attached is a ppt to explain the project – feel free to share the call with partners or on social media and have included a sample message below.

Call for submissions! Did you work on an outbreak that was stopped before it spread out of control? Submit
it to be featured in a global report by @ResolveTSL here: https://www.surveymonkey.com/r/LYWHRLC#PreventEpidemics

Thank you so much and please do not hesitate to ask any questions.

Amanda

New Preparedness Report: Epidemics that Didn't Happen

Feature your successes



We want to highlight successes in epidemic preparedness and response, rather than challenges in large-scale epidemics that usually dominate the conversation.

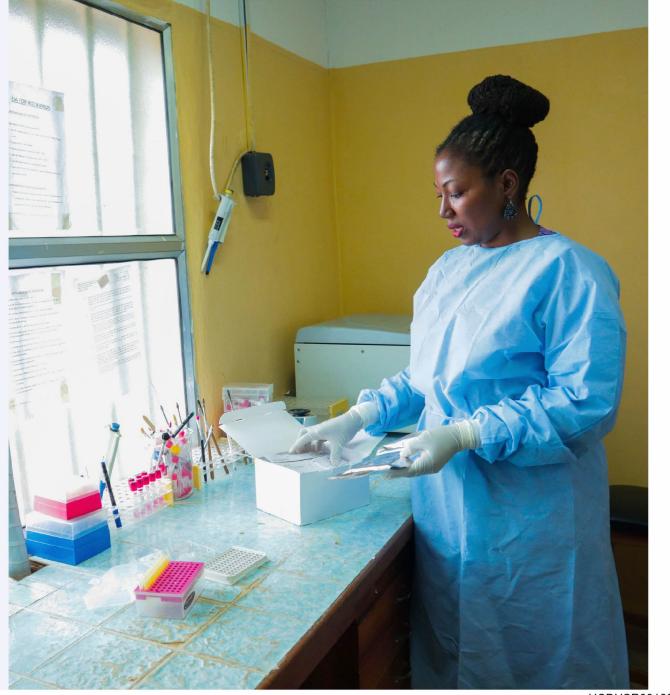
Why?

- Highlight often unrecognized epidemic preparedness efforts.
- Make the financial case for investing in preparedness.
- Raise preparedness on the global and national agenda.

What is it?

A 20-page printed report and digital feature, highlighting 8-10 cases from countries around the world.

Will be shared with donors, global and national decision makers, advocates and journalists.



Next steps

Do you have an example of an outbreak that was stopped before it spread out of control? **Examples of strong systems to** find, stop and prevent epidemics helped save lives? Do you want your name featured in our global report, with copies sent to your team?

Submit your entry through the link and if it is selected we will contact you for additional information.

https://www.surveymonkey.com/r/LYWHRLC



RESOLVETOSAVELIVES.ORG

From: Ronald Waldman < ronwaldman@email.gwu.edu>

To: Catherine Machalaba <machalaba@ecohealthalliance.org>

CC: Billy Karesh Billy Karesh karesh@ecohealthalliance.org; Jonna Mazet jkmazet@ucdavis.edu

Sent: 11/16/2019 10:01:56 AM

Subject: Re: Looking for great examples of preparedness and response

I figured.

Ron Waldman, MD Professor of Global Health Milken Institute School of Public Health George Washington University Washington, DC

Tel: +1 202 374 2364

On Nov 16, 2019, at 12:54 PM, Catherine Machalaba machalaba@ecohealthalliance.org wrote:

Hi Dr. Waldman,

Thank you- this is a wonderful opportunity and we have many examples to share. Amanda and Sarah Hersey are great (and we overlapped in Togo for the WAHO One Health and REDISSE meetings a few weeks ago). Delighted to connect with them to see how we can best feed into the process.

Thank you!!

Kind regards, Catherine

On Nov 16, 2019, at 11:28 AM, Ronald Waldman < ronwaldman@email.gwu.edu> wrote:

I figured. I've written Amanda, a great person and a good friend and, if she is willing, will you in direct touch with her. Catherine probably knows her well, especially because RTSL has someone in the pandemic office at the WB.

Ron

Tel: +1 202 374 2364

On Nov 16, 2019, at 11:19 AM, William B. Karesh karesh@ecohealthalliance.org wrote:

Thanks Ron!! No surprise that they didn't think any outbreaks start with animals.

We have quite a few great examples to share with them.

BK

On Nov 16, 2019, at 11:08 AM, Ronald Waldman < ronwaldman@email.gwu.edu > wrote:

Hi Jonna and Billy,

I hope all's well with you. I got this email from Resolve to Save Lives and I'm worried a bit that they sent it around only to human health people. I think this could be a good opportunity to make a case. Do you have anything that you think they might be interested in? I'd be happy to talk to them about what they are missing. This is Tom Frieden's project.

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/r/LYWHRLC#PreventEpidemics

Thank you so much and please do not hesitate to ask any questions.

Amanda

From: REDACTED

Sent: 12/02/2019 9:22:10 AM (-08:00)

To:"Jonna Mazet" <jkmazet@ucdavis.edu>; "Peter Daszak" <daszak@ecohealthalliance.org>;

"Woutrina A Smith" <wasmith@ucdavis.edu>; "Aleksei Chmura" <chmura@ecohealthalliance.org>; "Evelyn Luciano"

<luciano@ecohealthalliance.org>; "andre@ecohealthalliance.org" <andre@ecohealthalliance.org>

Subject: RE: Jonna and Woutrina call

Hi everyone,

I was just on the phone with Jonna, so chiming in. She will try to reach you in between flights today (around 3:30-5:00pm ET).

Best,



From: Jonna Mazet [mailto:jkmazet@ucdavis.edu]
Sent: Monday, December 02, 2019 9:18 AM

To: REDACTED

Subject: Fwd: Jonna and Woutrina call

Forwarded to REDACTED

----- Forwarded message -----

From: Mary Radford <maradford@ucdavis.edu>

Date: Mon, Dec 2, 2019 at 8:41 AM Subject: Re: Jonna and Woutrina call

To: Peter Daszak <<u>daszak@ecohealthalliance.org</u>>, Jonna Mazet <<u>jkmazet@ucdavis.edu</u>>, Woutrina A Smith <<u>wasmith@ucdavis.edu</u>>

Cc: Aleksei Chmura <<u>chmura@ecohealthalliance.org</u>>, Evelyn Luciano <<u>luciano@ecohealthalliance.org</u>>, Alison Andre <andre@ecohealthalliance.org>

My mistake, they are not there yet, they are traveling all day today.

Mary

From: Mary Radford < maradford@ucdavis.edu > Date: Monday, December 2, 2019 at 8:21 AM

To: Peter Daszak < <u>daszak@ecohealthalliance.org</u>>, Jonna Mazet < <u>jkmazet@ucdavis.edu</u>>, Woutrina A Smith < wasmith@ucdavis.edu>

Cc: Aleksei Chmura < chmura@ecohealthalliance.org, Evelyn Luciano < luciano@ecohealthalliance.org,

Alison Andre < andre@ecohealthalliance.org >

Subject: Re: Jonna and Woutrina call

Peter,

OK, great! I will flag this for Jonna. It is 4:30pm there, so I imagine after dinner for them would be a good time. Mary

From: Peter Daszak < daszak@ecohealthalliance.org>

Date: Monday, December 2, 2019 at 6:46 AM

To: Mary Radford < <u>maradford@ucdavis.edu</u>>, Jonna Mazet < <u>jkmazet@ucdavis.edu</u>>, Woutrina A Smith < wasmith@ucdavis.edu>

Cc: Aleksei Chmura <chmura@ecohealthalliance.org>, Evelyn Luciano@ecohealthalliance.org>,

Alison Andre andre@ecohealthalliance.org

Subject: RE: Jonna and Woutrina call

Yes – I'm around today (Monday)... I can do a call between now and 11.30am Eastern and 2-6pm Eastern...

Cheers,

Peter

Peter Daszak

President

EcoHealth Alliance 460 West 34th Street – 17th Floor New York, NY 10001

Tel. +1 212-380-4474

Website: www.ecohealthalliance.org

Twitter: @PeterDaszak

EcoHealth Alliance leads cutting-edge research into the critical connections between human and wildlife health and delicate ecosystems. With this science we develop solutions that prevent pandemics and promote conservation.

From: Mary Radford [mailto:maradford@ucdavis.edu]
Sent: Wednesday, November 27, 2019 11:14 AM
To: Peter Daszak; Jonna Mazet; Woutrina A Smith

Cc: Aleksei Chmura; Evelyn Luciano **Subject:** Jonna and Woutrina call

Dear Peter,

Jonna and Woutrina would like to schedule a call with you. Are you available today? They will be on Uganda time starting Monday.

Mary

Mary Radford

Executive Analyst for Dr. Jonna Mazet One Health Institute – UC Davis SVM

O: +1 530 752 3630 maradford@ucdavis.edu

"Jonna Mazet" < jkmazet@ucdavis.edu> From: Sent: 07/14/2020 10:32:12 AM (-07:00) "Christine Kreuder Johnson" <ckjohnson@ucdavis.edu> To: "Ava Sullivan" <sullivan@ecohealthalliance.org>; "Aleksei MacDurian" Cc: <chmura@ecohealthalliance.org>; "Kevin Olival" <Olival@ecohealthalliance.org>; "Tammie O'Rourke" <torourke@metabiota.com>; "William B. Karesh" <karesh@ecohealthalliance.org>; "David John Wolking" <djwolking@ucdavis.edu> Subject: Re: Reminder: P2 EB Call - Monday July 6th @ 11AM Pacific Yes, thanks! Jonna On Mon, Jul 13, 2020 at 3:36 PM Christine Kreuder Johnson < ckjohnson@ucdavis.edu> wrote: Thanks to you all and Imung for the efforts on this front. Pls keep us posted. /ckj From: Ava Sullivan < sullivan@ecohealthalliance.org> Date: Monday, July 13, 2020 at 9:50 AM To: Jonna Mazet < jkmazet@ucdavis.edu>, Christine Kreuder Johnson < ckjohnson@UCDAVIS.EDU> Cc: Aleksei Chmura <chmura@ecohealthalliance.org>, Kevin Olival <olival@ecohealthalliance.org>, Tammie O'Rourke <torourke@metabiota.com>, Billy Karesh <karesh@ecohealthalliance.org>, David John Wolking <djwolking@ucdavis.edu> Subject: Re: Reminder: P2 EB Call - Monday July 6th @ 11AM Pacific Hi Chris and Jonna, Just to keep you updated on our efforts to get reports approved (particularly the Indonesia reports) since we spoke about it last EB call. Kevin passed along both of your suggestions to Imung-JM had offered to jump on a call, and CKJ suggested Imung provide an ultimatum, past which the report will be considered approved. Imung agreed to establish said time-bound approval after first having one last meeting with his Director. He plans on having that meeting early this week. We are hopeful that this will be resolved soon. I just wanted to keep you in the loop, and give appreciation for your suggestions/offers to help.

Ava

Ava Sullivan

Project Manager and Research Assistant

EcoHealth Alliance

520 Eighth Avenue - Suite 1200

New York, NY 10018 REDACTED (mobile)

www.ecohealthalliance.org

EcoHealth Alliance develops science-based solutions to prevent pandemics and promote conservation

On Jul 5, 2020, at 6:19 PM, David J Wolking < <u>djwolking@ucdavis.edu</u> > wrote:
Hi there,
Below is the agenda and Zoom link for tomorrow's EB call.
Hope you enjoyed the long weekend,
David

PREDICT Executive Board Meeting

Monday, July 6, 2020

11:00AM-12:00PM PDT/2:00-3:00pm EDT

Zoom link REDACTED

Additional Zoom info below agenda

1. Admin updates

Status of awards and planning for closeout (<90 days!)

Engagement of P2 global network and next technical assistance call

• Timeline and topic: risk communication session this week or next? Any feedback from country teams on topics or structure?

Objective 1 updates (if any)

Objective 2 - updates on SARS-CoV-2 reservoir and amplifying host investigation (PCR testing and serology)

2. Data sharing

DDL status - open data September 2020; all of the reports below need to be final by end of September.

Status of government reports and approvals - any updates to table below (status as of June 22, 2020)

Country	Report	Notes/updates
		"Massive amounts of testing"
Bangladesh	Pending	3 reports - human, domestic animal, wildlife; human is with Arif; the rest are influenza subtyping and are with Simon now for input
eDRC	CD-009- P2 human	Likely approved - report shared pending notification of approval from E. Kambale
Guinea	GN-003- P2 wildlife	Approved
Guinea	GN-004- P2 domestic	Approved
Indonesia	ID-001- P1P2	Any updates?
Indonesia	ID-002- P2 wildlife	
Indonesia	ID-004- P2 wildlife	
Indonesia	ID-005- P2 wildlife	
Indonesia	ID-006- P2	

	human	
la deservi	ID-007- P2	
Indonesia	wildlife	
Indonesia	ID-008- P2 human	
Liberia	LR-002- P2 wildlife	In hands of government partners but not officially approved; Jim pushing it.
Liberia	LR-003- P2 wildlife	
Malaysia	MP-007- P2 wildlife	Likely approved - Tom following up
Thailand	TH-008- P2 human	Pending in-country team input

3. Publication updates (<u>link to Google Sheet -</u> last updated January 2020)

4. Final Report

Vol 2 - Country reports - towards the finish line...

• Status of pending drafts?

Vol 1 - Global report updates on chapter drafts (deadline <30o days!) - link to <u>new working outline</u>...

Standing items (time permitting)

- 5. Media, publication and conference updates
 - WCS wildlife value chain pub link to press release
 - Update on Bat CoV publication
 - NatGeo and Smithsonian articles?

• Others?

6. Upcoming funding opportunities?

7. Consortium author list

• Link to Google Sheet (on authorship vs. acknowledgements)

Zoom Call-in info

Topic: PREDICT EB Call

Join Zoom Meeting:

REDACTED

Meeting ID REDACTED

One tap mobile



Dial by your location



Meeting ID: REDACTED

On Fri, Jul 3, 2020 at 12:55 PM David J Wolking < djwolking@ucdavis.edu> wrote: Hi there,

Just a reminder about next week's EB call same time as always (noted above).
I'll send an agenda before the call, but we will be focusing on extension plans/ progress and of course the final report.
Enjoy the weekend,
David
On Fri, Jun 19, 2020, 7:00 AM David J Wolking < djwolking@ucdavis.edu > wrote: Hi there,
Just a reminder about next week's P2 Executive Board call. I'll follow-up with the agenda shortly, but if you have anything you'd like to discuss please send it my way.
Best,
David
David J. Wolking
Senior Manager, Global Programs, One Health Institute
Global Operations Officer, PREDICT Project of USAID Emerging Threats Division
Senior Manager, PREEMPT Project
School of Veterinary Medicine
University of California, Davis

UCDUSR0016083

David J. Wolking

Senior Manager, Global Programs, One Health Institute

 ${\small \textbf{Global Operations Officer,}} \ \underline{\textbf{PREDICT Project}} \ \textbf{of USAID Emerging Threats Division}$

Senior Manager, PREEMPT Project

School of Veterinary Medicine

University of California, Davis