Sent: Mon, 22 May 2017 07:08:48 -0700
Subject: Re: [predict] [predict-outbreak] Ebola Virus Disease Outbreak in the Bas-Uele province -update
From: Jonna Mazet <jkmazet@ucdavis.edu>
To: Angela Wang <awang@usaid.gov>
Cc: PREDICTMGT <predictmgt@usaid.gov>, Sarah Paige <spaige@usaid.gov>, PREDICT-outbreak <predict-outbreak@ucdavis.edu>

Hadn't heard that one, but I'll check into it now.
Thanks,
J

On Mon, May 22, 2017 at 6:10 AM, Angela Wang <awang@usaid.gov> wrote:

> Thanks Jonna! The mission sent an update yesterday saying, "Unfortunately, contact follow up has been slowed by a lack of thermometers available to the teams. They currently only have four functioning ThermoLasers. USAID is working through our partner PREDICT to determine whether we can provide immediate assistance in procuring additional thermometers."
> Do you have any info on if PREDICT is procuring thermometers?

On Sun, May 21, 2017 at 4:38 PM, Jonna Mazet <jkmazet@ucdavis.edu> wrote:

> Please see below and attached regarding what has been requested of Predict and what we believe we can offer. Note that we are concerned about both cold chain and the media into which samples are being collected in the field. We can test the samples, but there will likely be a reduction in sample quality that may impact analysis.
> We will keep you posted, but please let us know if you have questions that we should pass to the in-country team.
> Have a nice day,
> Jonna

---------- Forwarded message ----------
From: **James Ayukekbong** <jayukekbong@metabiota.com>
Date: Sun, May 21, 2017 at 7:37 AM
Subject: Re: [predict] [predict-outbreak] Ebola Virus Disease Outbreak in the Bas-Uele province -update
To: Jonna Mazet <jkmazet@ucdavis.edu>, Maria Makuwa <mmakuwa@metabiota.com>
Cc: Prime Mulembakani <pmulembakani@metabiota.com>, PREDICT-outbreak <predict-outbreak@ucdavis.edu>, Brian Bird <bhbird@ucdavis.edu>, Eddy Rubin <erubin@metabiota.com>, Karen Saylors <ksaylors@metabiota.com>, Damien Joly <djoly@metabiota.com>

Dear all,

Find attached the updated PREDICT Outbreak Rapid Report form regarding the current Ebola outbreak in DRC.

We are told the Minister of health would sign an official request for PREDICT to perform the following;

- To conduct a joined ecological research with FAO to look for Ebola virus among wild and domestic animals in Likati.

- To test all samples (including negatives) from these outbreak with the PREDICT panel.

Kind regards,

J.A Ayukekbong, PhD
Regional Coordinator /Central Africa
USAID PREDICT | Metabiota
Email: jayukekbong@metabiota.com
Mobile: +1 250-797-7755
Website: www.metabiota.com
Skype: ayukekbong.ayukepi

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Angela Wang, MSPH
Public Health Advisor
Emerging Threats Division, Office of Infectious Disease
USAID/Washington, Bureau for Global Health
Phone: 202-712-1070 (O) | REDACTED
Email: awang@usaid.gov

From: Elizabeth Leasure <ealeasure@ucdavis.edu>
To: Alisa Pereira <apereira@usaid.gov>, Andrew Clements <AClements@usaid.gov>
Cc: Jonna Mazet <jkmazet@ucdavis.edu>, David John Wolking <djwolking@ucdavis.edu>, Amalhin Shek <ashek@usaid.gov>, Shana Gillette <sgillette@usaid.gov>
Subject: PREDICT-2 April 2017 Ebola Financial Report
Sent: Fri, 2 Jun 2017 15:55:39 +0000
PREDICT Ebola Financial Report_Apr2017_final.pdf

Hi Andrew and Alisa. Please find attached the April 2017 Ebola Financial Report for PREDICT. Please note that the negative value for Guinea "other" costs is a correction to a coding error, where domestic travel costs were previously reported as "other" by mistake. Let me know if you have any questions.

Thanks,
Liz

Elizabeth Leasure
One Health Institute
University of California, Davis
530-754-9034 (office)
REDACTED (cell)

PREDICT-2 Expenses - Ebola

April 2017

Cost Category	US Central	Cameroon	Cote d'Ivoire	DRC	Ethiopia	Ghana	Guinea	Kenya	Liberia
Salaries	9,875	22,496	9,763	46,420	8,421	24,651	50,815	14,702	14,290
Fringe	8,701	8,787	8,045	23,046	8,015	11,758	27,054	6,743	13,467
Equipment	0	0	0	0	0	0	0	0	0
Domestic Travel	2,205	1,049	0	948	2,300	800	38,325	0	23
Foreign Travel	0	3,929	262	2,088	131	3,967	7,842	131	3,542
Services	0	8,500	1,790	2,138	895	1,790	6,610	12,538	39,670
Supplies	6,426	0	0	459	0	1,055	55,497	103	19,911
Other	573	14,079	2,110	9,963	1,994	4,145	-30,967	523	2,246
Indirects	12,817	24,233	10,000	38,049	8,506	16,304	75,278	9,977	28,675
Total Costs	**$40,596**	**$83,073**	**$31,969**	**$123,111**	**$30,262**	**$64,470**	**$230,455**	**$44,715**	**$121,826**

Cost Category	Senegal	Sierra Leone	Tanzania	Uganda
Salaries	20,117	32,042	26,007	17,466
Fringe	12,063	20,071	14,431	19,193
Equipment	0	0	0	0
Domestic Travel	441	5,630	837	1,395
Foreign Travel	262	3,181	2,762	395
Services	1,790	10,717	1,790	2,137
Supplies	2,010	12,945	4,569	999
Other	1,988	14,301	3,660	7,535
Indirects	17,293	46,892	18,823	15,771
Total Costs	**$55,964**	**$145,779**	**$72,878**	**$64,892**

$1,109,990 PREDICT-2 Costs (Ebola)

From: Mario Mondele <mmondele@usaid.gov>
Sent: Wed, 9 Aug 2017 08:25:57 +0100
To: "William B. Karesh" <karesh@ecohealthalliance.org>
Cc: Amanda Andre <amanda.andre@ecohealthalliance.org>, "GeeEA@state.gov" <GeeEA@state.gov>, Predict inbox <predict@ucdavis.edu>, Andrew Clements <AClements@usaid.gov>
Subject: [predict] Re: USAID engagement with Country Briefs, RoC

Thank you, Billy.
Mario

On Tue, Aug 8, 2017 at 8:52 PM, William B. Karesh <karesh@ecohealthalliance.org> wrote:

> Hi Mario,
> Attached is the country plan we put together for RoC for the coming year. Let's try to discuss on the phone tomorrow.

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

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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 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.

--

Mario MONDELE
Program Management Specialist
USAID/Congo - American Embassy Brazzaville
Off.: REDACTED / Cell.: REDACTED
E-mails: mmondele@usaid.gov / REDACTED

"Where there is a will, there is always a way"

From: Elizabeth Leasure <ealeasure@UCDAVIS.EDU>
To: Andrew Clements <aclements@usaid.gov>, Amalhin Shek <ashek@usaid.gov>
Cc: "predict@ucdavis.edu" <predict@ucdavis.edu>, David John Wolking <djwolking@ucdavis.edu>, Jonna Mazet <jkmazet@ucdavis.edu>
Subject: FW: "Rescission plan" - impacts on USAID obligations?
Sent: Fri, 24 Aug 2018 16:37:29 +0000
White House 'rescission' plan throws aid community into uncharted waters _ Devex.pdf

Hi Andrew and Amalhin. Came across this article and wondered if this is something that could potentially impact our Y5 obligations. Is this something we should be concerned about?

Thanks,
Liz

Elizabeth Leasure
Financial Operations Manager
One Health Institute
REDACTED *(cell)*
530-754-9034 (office)
Skype: ealeasure

From: David J Wolking <djwolking@ucdavis.edu>
Sent: Friday, August 24, 2018 9:31 AM
To: Elizabeth Leasure <ealeasure@UCDAVIS.EDU>
Cc: predict@ucdavis.edu
Subject: "Rescission plan" - impacts on USAID obligations?

Inside Development
The future of US aid

White House 'rescission' plan throws aid community into uncharted waters

*By **Michael Igoe** // 24 August 2018*

WASHINGTON — Development advocates are bracing for an attempt by United States President Donald Trump's administration to rescind billions of dollars that Congress has already appropriated for foreign assistance programs.

Rumors about the "rescission package" have swirled around Washington, D.C., for more than a week, as U.S. development advocates have sought to piece together details of what the plan could include — and what options are available for them to fight against it. Devex spoke to multiple sources briefed on the rescission plan, who shared information from private conversations and off-the-record meetings, on condition of anonymity.

White House opens new front in war on US aid budget

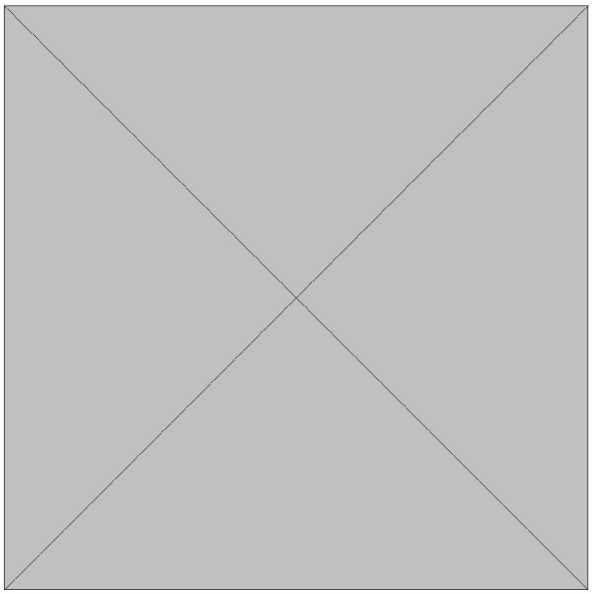
The latest effort by the White House Office of Management and Budget to cut U.S. foreign assistance indicates that the Trump administration is tired of seeing its spending plans overturned by Congress.

The Trump administration's latest effort to cut U.S. foreign aid has thrown global development supporters into the uncharted waters of a budget fight with no historical precedent. The plan, directed from the White House Office of Management and Budget, is expected to arrive early next week — likely on Aug. 28, according to multiple sources.

The rescission package would place a 45-day "freeze" on money in certain accounts that has not yet been obligated by the U.S. Department of State and the U.S. Agency for International Development. The move would be unprecedented because of its timing — just over a month before the end of fiscal year 2018 — and it would put lawmakers and foreign aid supporters in an ambiguous and alarming position. By the time the 45-day freeze lifted, the fiscal year would be over, and as a result the unspent money would go back to U.S. Treasury.

With little time to overturn the White House's effort — and a hazy list of options for Congress to do so — development advocates see a real possibility that billions of dollars already designated for U.S. foreign assistance could disappear. Some of them remain confident that lawmakers will either find a way to defeat the White House's plan, or to convince the Trump administration that the political costs of going through with it would outweigh any political gains.

While this particular rescission package is only expected to target funding for the State Department and USAID, lawmakers worry that it could set a dangerous precedent for the White House to be able to ignore Congress' budget authority. Some lawmakers have questioned whether the move would even be legal.



The rescission package would aim to retract funds appropriated on a two-year basis in fiscal year

2017, as well as funds appropriated on a one-year basis in fiscal year 2018, according to people familiar with the plan. Both of those funding pools expire when the current fiscal year ends on Sept. 30.

Questions remain about exactly how much funding — and which accounts — the rescission package would affect.

The accounts that the White House wants to reclaim represent moving targets. As of last week, the OMB plan was believed to apply to $3.6 billion in assistance, but since then, USAID and the State Department have been obligating money quickly in the targeted accounts, and the total is now down to $2 billion, according to several sources updated on the accounts this week. Further changes in those numbers are expected before the rescission package arrives.

The largest pot of money targeted is the Economic Support Fund, an account managed by the State Department that provides assistance to countries where the U.S. has a strategic interest, sources said. USAID's Development Assistance account was previously believed to be vulnerable to rescission, but staff briefed on the account told Devex it has now been completely obligated.

State Department funds that provide bilateral assistance to Europe, Eurasia, and Central Asia are also reportedly being targeted, as are State Department funds that support security sectors such as law enforcement, peacekeeping, and foreign military financing.

Contributions to multilateral organizations are also rumored to take a big hit under the White House plan, with all unobligated funding in the International Organizations and Programs accounts slated for rescission, sources said. That would likely include contributions to international peacekeeping organizations and United Nations agencies such as UNICEF.

Some development experts, who also spoke to Devex on condition of anonymity in order to speak freely, speculated that the White House may have chosen not to target global health and humanitarian accounts since they typically enjoy broad, bipartisan support, and seeking to cut them would likely give rise to more impassioned opposition.

The OMB's plan has forced some of the administration's development and diplomacy leaders into a difficult situation, and some of them are reportedly lobbying against their own administration's rescission effort, according to people briefed on the situation.

Both Secretary of State Mike Pompeo and United Nations Ambassador Nikki Haley are rumored to have voiced their opposition to President Trump's plan, while Vice President Mike Pence listened to lawmakers express their disapproval at a Republican policy lunch on Tuesday, according to people with knowledge of the meeting.

One Republican lobbyist shrugged off the suggestion that Pompeo has been an effective advocate for maintaining funding.

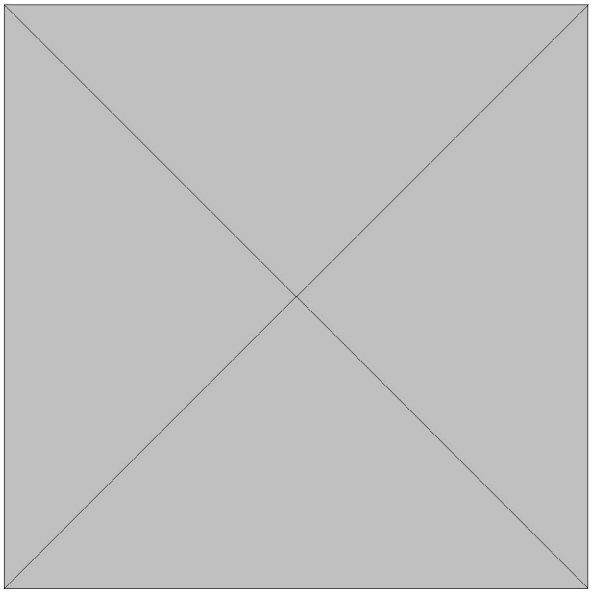
"If Pompeo was being really strong, we wouldn't even be having this discussion," the lobbyist said, adding, "I wouldn't want to give him too much credit."

USAID Administrator Mark Green faced repeated questions about the rescission package at a Center for International and Strategic Studies event on Monday. The USAID chief did not articulate any position on the issue, and suggested that he had little information about it.

"On the budget front, I really don't have much more that I can provide. Part of it is — I'm not attempting to duck — I just literally don't have more. I'd refer you to OMB quite frankly," Green said.

Typically Congress can reject a rescission package, as the Senate did earlier this year. In this case, with the OMB's directive expected to arrive so close to the end of the fiscal year, there are questions about the tools available to lawmakers to oppose it. While development advocates and congressional staffers are scrambling to identify options, one source involved in the effort said that "none of them are particularly attractive."

The most straightforward course of action would be for either the House of Representatives or the Senate to call for a full floor vote to reject the rescission package, which at least some members believe they have the authority to do. With the House in recess, calling such a vote would fall to the Senate, a potential solution that would have to overcome both political and timing challenges. The Senate floor schedule is already packed, and leaders are unlikely to disrupt it.



A second option that some aid advocates have explored is extending the authority of the funds targeted for rescission into fiscal year 2019, so that they would not expire on Sept. 30. This would give the State Department and USAID additional time to obligate them.

While there is some debate around this option, supporters believe that extending the funds' authority into 2019 would create another problem. If the funding authority is extended into 2019, the Congressional Budget Office may have to "score" the funding as though it were newly appropriated, and that would raise the 2019 budget above the spending caps agreed to in a two-year budget deal earlier this year.

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Amid the uncertainty, U.S. aid budget experts are clear about two things: This additional layer of conflict will drive a further wedge between the Trump administration and the development community; and, as funding agencies rush to push money out the door against a backdrop of vanishing funds and a broken budget process, the effectiveness of development programs stands to suffer.

INSIDE DEVELOPMENT (/INSIDE-DEVELOPMENT) | THE FUTURE OF US AID (/NEWS/SEARCH?QUERY%6B%5D=THE+FUTURE+OF+US+AID)

White House 'rescission' plan throws aid community into uncharted waters

By Michael Igoe (/news/authors/881923) // 24 August 2018

The White House. Photo by: Joyce N. Boghosian / White House (https://www.flickr.com/photos/whitehouse/41306368632/)

WASHINGTON — Development advocates are bracing for an attempt by United States President Donald Trump's administration to rescind billions of dollars that Congress has already appropriated for foreign assistance programs.

Rumors about the "rescission package (https://www.devex.com/news/white-house-opens-new-front-in-war-on-us-aid-budget-93310?utm_source=article&utm_medium=93326&utm_campaign=line)" have swirled around Washington, D.C., for more than a week, as U.S. development advocates have sought to piece together details of what the plan could include — and what options are available for them to fight against it. Devex spoke to multiple sources briefed on the rescission plan, who shared information from private conversations and off-the-record meetings, on condition of anonymity.

The Trump administration's latest effort

White House opens new front in war on US aid budget (https://www.devex.com/news/white-house-opens-new-front-in-war-on-us-aid-budget-93310?utm_source=article&utm_medium=93326&utm_campaign=line)

The latest effort by the White House Office of Management and Budget to cut U.S. foreign assistance indicates that the Trump administration is tired of seeing its spending plans overturned by Congress.

(https://www.devex.com/news/white-house-opens-new-front-in-war-on-us-aid-budget-93310https://www.devex.com/news/white-house-opens-new-front-in-war-on-us-aid-budget-93310) to cut U.S. foreign aid has thrown global development supporters into the uncharted waters of a budget fight with no historical precedent. The plan, directed from the White House Office of Management and Budget (https://www.whitehouse.gov/omb/), is expected to arrive early next week — likely on Aug. 28, according to multiple sources.

The rescission package would place a 45-day "freeze" on money in certain accounts that has not yet been obligated by the U.S. Department of State (https://www.state.gov/) and the U.S. Agency for International Development (https://www.devex.com/organizations/united-states-agency-for-international-development-usaid-45096). The move would be unprecedented because of its timing — just over a month before the end of fiscal year 2018 — and it would put lawmakers and foreign aid supporters in an ambiguous and alarming position. By the time the 45-day freeze lifted, the fiscal year would be over, and as a result the unspent money would go back to U.S. Treasury.

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Questions remain about exactly how much funding — and which accounts — the rescission package would affect.

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1. Trump's 'rescission' plan, experimental Ebola treatments, and UK aid rules: This week in development (https://www.devex.com/news/trump-s-rescission-plan-experimental-ebola-treatments-and-uk-aid-rules-this-week-in-development-93339)
2. No-deal Brexit: UK government will underwrite ejected aid contracts (https://www.devex.com/news/ro-dea-brexit-uk-government-will-underwrite-ejected-aid-contracts-93336)
3. White House 'rescission' plan throws aid community into uncharted waters (https://www.devex.com/news/white-house-rescission-plan-throws-aid-community-into-unchartec-waters-93326)
4. Growing number of big US funders based on the West Coast (https://www.devex.com/news/growing-number-of-big-us-funders-based-on-the-west-coast-93288)
5. At AIDS 2018, a strong push for HIV self-testing. But is everyone on board? (https://www.devex.com/news/at-aids-2018-a-strong-push-for-hiv-self-testing-but-is-everyone-on-board-93210)

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ABOUT THE AUTHOR

Michael Igoe (/news/authors/881923) @AlterIgoe

(https://twitter.com/AlterIgoe)

Michael Igoe is a Senior Reporter with Devex, based in Washington, D.C. He covers U.S. foreign aid, global health, climate change, and development finance. Prior to joining Devex, Michael researched water management and climate change adaptation in post-Soviet Central Asia, where he also wrote for EurasiaNet. Michael earned his bachelor's degree from Bowdoin College, where he majored in Russian, and his master's degree from the University of Montana, where he studied international conservation and development.

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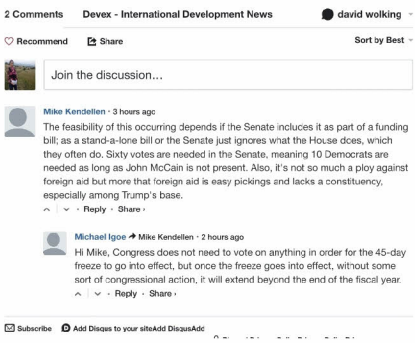

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From: "Dibesh Karmacharya" [redacted]
To: "'Jonna Mazet'" <jkmazet@ucdavis.edu>, "'Nziza Julius'" [redacted], "'Kirsten Gilardi'" <kvgilardi@ucdavis.edu>, "'Mike Cranfield'" [redacted], "'Woutrina Smith'" <wasmith@ucdavis.edu>, "'Suzan Murray'" <MurrayS@si.edu>, "'Zimmerman, Dawn'" <ZimmermanD@si.edu>, "'Rudovick Kazwala'" [redacted], "'Zikankuba Sijali'" [redacted] "'Abel Ekiri'" <abekiri@ucdavis.edu>, "'Prime Mulembakani'" [redacted], "'Karen Saylors'" <ksaylors@metabiota.com>, "'[redacted]'" [redacted], "'Jon Epstein'" <epstein@ecohealthalliance.org>
Cc: <predict-outbreak@ucdavis.edu>, "'Eddy Rubin'" <erubin@metabiota.com>, "'Peter Daszak'" <daszak@ecohealthalliance.org>
Subject: RE: Outbreak preparedness
Sent: Mon, 30 Jan 2017 13:10:50 +0545

Hi Jonna,

We acknowledge your communication.

Team Nepal would do the needful.

With Best of Regards

Dibesh

CENTER FOR MOLECULAR DYNAMICS - NEPAL

Dibesh Karmacharya
Executive Director/Chairman
CMDN
[redacted]

Nepal Tiger Genome Project: www.ntgp.org.np
Nepal Fish Biodiversity Project: www.fish.org.np

From: [redacted] **On Behalf Of** Jonna Mazet
Sent: Sunday, January 29, 2017 2:00 AM
To: Nziza Julius; Kirsten Gilardi; Mike Cranfield; Woutrina Smith; Suzan Murray; Zimmerman, Dawn; Rudovick Kazwala; Zikankuba Sijali; Abel Ekiri; Prime Mulembakani; Karen Saylors; <dibesh@cmdn.org>; <dibesh@cmdn.org>; Jon Epstein
Cc: predict-outbreak@ucdavis.edu; Eddy Rubin; Peter Daszak
Subject: Outbreak preparedness

Dear Predicters,
As concerns, preparedness measures, and responses are heating up around influenza measures in countries neighboring those that you manage, I urge you to make sure that you and your teams are up to date on your outbreak preparedness and

planning, including completing the outbreak module and being prepared to effectively and professionally manage both communications and technical assistance that may be requested.
Many of you have already begun discussions with partners and ministries around planning and response. If so, please immediately begin the current Predict outbreak response form, even if you haven't been requested to do anything officially yet (Julius, you can continue to update the one you have already started as things develop).
Please also be sure to make use of the predict-outbreak@ucdavis.edu email distribution list (I will receive those messages), as then we will all have the same information in real-time. I have been receiving constant inquiries from USAID/DC and Missions regarding our activities and communications, so it is necessary in confusing times to all be receiving the same information most efficiently.
Thanks you for your continued diligent efforts & fingers crossed that things will settle down quickly,
Jonna

Sent: Thu, 2 Feb 2017 16:48:42 -0800
Subject: Re: [predict] [predict-outbreak] Bangladesh outbreak update: Feb 2nd
From: Jonna Mazet <jkmazet@ucdavis.edu>
To: Jon Epstein <epstein@ecohealthalliance.org>
Cc: Mindy Rostal <rostal@ecohealthalliance.org>, Emily Hagan <hagan@ecohealthalliance.org>, Peter Daszak <daszak@ecohealthalliance.org>, "William B. Karesh, D.V.M" <karesh@ecohealthalliance.org>, Ariful Islam <arif@ecohealthalliance.org>
Crow die off_PREDICT Bangladesh_Dhaka_Feb 2 2017.docx

Version for further editing only if and when needed or substantive information is available.
Thanks,
Jonna

On Thu, Feb 2, 2017 at 11:47 AM, Jon Epstein <epstein@ecohealthalliance.org> wrote:

> Jonna,
> Attached is the Feb 2 update for Dhaka. We noticed that the total #crows sampled listed in the Feb 1 report had an error (listed as 148, instead of 140). Sorry about that, but today's total is correct.
>
> We've finished sample collection in Dhaka, but some labwork and behavioral analyses are still pending. Once we complete these, our engagement will be completed. I'm not sure if this still warrants daily updating, but let us know what USAID would like at this point.
>
> Cheers,
> Jon
>
> --

Jonathan H. Epstein DVM, MPH

Vice President for Science and Outreach

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

1.212.380.4467 (direct)
REDACTED (mobile)

web: ecohealthalliance.org

Twitter: @epsteinjon

PREDICT Outbreak Rapid Report

Today's Date: February 2, 2017
Cumulative day of the outbreak investigation: 20
Working Title of Investigation: *Crow_dieoff_Bangladesh_Dhaka_2017*

Please describe the disease signs and symptoms and species affected (humans, domesticated animals, wildlife:
On 14th January, the PREDICT field team (team members who were not directly involved in investigating the crow die-off in Rajshahi) was sampling bats and observed unusual mortality of crows (*Corvus splendens*) on the premises of Mohakhali Wireless, Dhaka City. The team observed the crows suddenly falling from trees; and clinical signs of: circling, inability to fly, lethargy, torticollis, tremors, and diarrhea. No history or clinical signs were reported or noted in other domesticated animals or people.

Location	
Country:	Bangladesh
District:	Dhaka (This is 245km from Rajshahi)
Village/Town:	Dhaka city: Wireless Mohakhali, Ramna Park, Sohrawardi uddan, Dhaka University, and Modumoti Model Town
GPS Coordinates (if known):	*Mohakhali Wireless* N23 47.010 E90 24.289 *Ramna Park:* N23 44.347 E90 23.969 *Dhaka University:* N2344.087 E9023.499
Date that first case(s) of illness occurred (if known or estimate):	January 14, 2017
Date that PREDICT was first notified of outbreak:	January 14, 2017

Key Information	**Description of Findings/Actions/Outcomes**
How many affected individuals?	Human: Suspected__0____ Confirmed__0___Deaths__0__ Domestic animal: Suspected_approx. 47_ Confirmed__0___Deaths__47_ Wild animal: Suspected__162__ Confirmed_0____Deaths_149_
How was outbreak first noticed?	The PREDICT-2 team was conducting routine bat sampling in Dhaka. On January 14, 2017, Country Coordinator, Dr. Ariful Islam, reported observing 4 sick or dying crows on the premises of a telecommunications company where PREDICT was also conducting bat sampling. The Country Coordinator notified the Director of the Institute of Epidemiology, Disease Control & Research (IEDCR) about a second crow die-off (*see also PREDICT's report on the concurrent Rajshahi outbreak*) on the premises of the telecommunication company, Mohakhali Wireless. The Director of IEDCR then informally and verbally requested the PREDICT-2 team to extend their Rajshahi outbreak response efforts to also investigate the crow die-off in

	Dhaka. When asked, local residents stated that the crow die-off had started in the beginning of January. IEDCR expressed interest in understanding the geographical distribution, cause and extent of this outbreak and find any epidemiological links between these two outbreak sites (Dhaka and Rajshahi).
Where was the first reported case? What is/was the extent of geographic spread? Include comments on the apparent speed of spread.	The crow die-off was first observed at Mohakhali wireless. An additional 4 crow roosts were observed by the PREDICT team that also had evidence of crow morbidity and mortality approximately 7km from Mohakhali at Ramna Park, Suhrawardy Uddan, Modumoti Model Town and Dhaka University. The team searched Dhaka city for other crow roosts and observed apparently healthy crows at 7 additional roosts. Discussions with local residents and additional field observations indicated there was no further evidence of crow mortality events or unusual illness at these other roosts.
Has the country requested support from PREDICT (include date of request)?	The Director of IEDCR requested PREDICT's support in this outbreak on January 14, 2017, as part of the official request for the ongoing Rajshahi outbreak. The director of IEDCR officially acknowledged the outbreak on January 15, 2017.
If so, which government agency requested PREDICT support?	Institute of Epidemiology, Disease Control and Research (IEDCR) and One Health Secretariat of Bangladesh under Ministry of Health and Family Welfare, Government of the people's Republic of Bangladesh.
When was PREDICT response initiated (date)?	January 14, 2017
Are other EPT partners involved in the response (which ones and how)?	On 18 January, IEDCR provided an update of the investigation at the National Influenza Technical Steering Committee coordination meeting. FAO and P&R were present. On the 25th, there was a second meeting to discuss the outbreak and FAO presented data from ongoing, routine live bird market (LBM) surveillance.
What type of assistance did PREDICT initially provide? Which PREDICT personnel were involved?	PREDICT was engaged at the start of outbreak response, since the team reported the unusual deaths and clinical signs. At IEDCR's request, the team immediately collected crow samples and provided technical advice to IEDCR. The team surveyed nearby crow roosts (within 7 km) and found 4 additional sites where crows had clinical signs and mortality. The PREDICT team visited 14 live bird markets and sampled poultry offal. These markets are in Dhaka close to the outbreak site and are not under routine surveillance by FAO. PREDICT conducted wild bird and feral dog sampling; environmental crow and poultry fecal sample collection; qualitative interviews; transported personnel; transported samples from the field to the PREDICT lab at icddr,b and the DLS National Laboratory – The Central Disease Investigation Laboratory (CDIL). Diagnostic analyses are being conducted by the Ministry of Livestock and Fisheries reference lab as well as the reference lab at the Bangladesh Livestock Research Institute (BLRI) and icddr,b. The PREDICT team included Dr. Ariful Islam, PREDICT-2 country coordinator; one veterinary research officer; one anthropologist; one field research assistant; and two field technicians who have wildlife expertise. At icddr,b, lab testing was overseen by PREDICT Bangladesh lab lead, Dr. Zia Rahman and conducted by 2 research officers.
When was the first official acknowledgement of the outbreak (by which government agency or other reputable body and date)?	The Director Institute of Epidemiology, Disease Control & Research (IEDCR) first officially acknowledged the crow die-off on January 15, 2017. The response was initiated by the Director of IEDCR on January 14, 2017. In

When was a response initiated and by whom? Which agencies were involved? Who was in charge of the national response?	this outbreak response, the Ministry of Health & Family Welfare, Ministry of Forest and Environment, and Ministry of Fisheries and Livestock were each involved as part of the Government of Bangladesh response. iccdr,b was involved as a PREDICT lab partner to support preliminary sample testing. For the Dhaka crow die-off investigation, the Bangladesh Livestock Research Institute (BLRI) and the Central Diagnostic Investigation Laboratory (CDIL) serve as official reference labs (under Ministry of Fisheries and Livestock) and are performing confirmatory testing for a subset of samples screened at icddr,b. BLRI and CDIL will report the official laboratory results on behalf of the Government of Bangladesh, once diagnostic testing is completed. Prof. Dr. Meerjady Sabrina Flora, Director, IEDCR is in charge of the national response.
Was the cause of the outbreak confirmed by a laboratory? If so, give details, including cause, species, specimen types tested and dates of testing if known.	The etiology of outbreak was preliminarily identified by laboratory testing, and confirmatory testing is on-going. Note: The PREDICT team has been actively sampling sick or dead crows in Dhaka from Jan 14th, and the outbreak remains active. Below is a detailed daily summary of PREDICT field activities and samples submitted to lab partners for analysis.
Where was the laboratory testing performed (name of laboratory)?	icddr,b, Bangladesh Livestock Research Institute(BLRI), and Central Disease Investigation laboratory (CDIL)
Number of days between initiation of government response and lab confirmation of laboratory results.	Confirmed diagnostic results from the Government of Bangladesh have not been released.
Summary of the Outbreak:	**To be filled after active outbreak activity has ceased**
Working name of the outbreak (e.g., Yellow Fever - DRC)	Crow die-off Dhaka
Total number of cases:	Human: Suspected__0____ Confirmed__0___Deaths__0__ Domestic animal: Suspected_approx. 47_ Confirmed__0___Deaths__47_ Wild animal: Suspected___162__ Confirmed_0___Deaths_149
Summary of PREDICT Team response activities during the outbreak.	Since January 14, 2017, after receiving a verbal request from the Director of IEDCR (the official acknowledgement of the die-off was on the 15th of January), the PREDICT team has been continuing its field investigations and has sampled than 148 crows and collected 81 live bird market environmental samples, 40 poultry offal samples, 6 feral dog samples and captured 13 wild birds that are co-roosting with crows (species ID pending). We submitted all the samples to icddr,b lab and a subset of samples were submitted to BLRI for confirmatory testing. Additional testing and laboratory systems strengthening also ongoing at CDIL. The qualitative team performed their observational and informal interviews in the outbreak area, live bird markets and poultry farms. The PREDICT team has continued to sample wild crows, as of January 31st, at three of the sites with ongoing crow mortality: Wireless Mohakhali, Ramna Park, Sohrawardi uddan. The anthropology team has one more field site visit and then then will finalize their report. Laboratory diagnostics are ongoing.

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PREDICT Response Timeline

Working Title of Investigation: *Crow_dieoff_Bangladesh_Dhaka_2017*

Key Events:

Date	Day #	Notification or Action Taken
January 14, 2017	1	First notification of unusual disease activity by PREDICT team
(See Rajshahi report)		CC notification to PREDICT lead partner
January 14, 2017	1	Unofficial request from the government for the PREDICT team
January 14, 2017	1	First deployment of PREDICT teams to outbreak field site – PREDICT team was already deployed to the site sampling bats
January 14, 2017	1	First specimen collection
January 14, 2017	1	First specimens delivered to laboratory
January 15, 2017	2	Invitation to assist from government received by PREDICT team
January 15, 2017	2	First Outbreak Taskforce meeting attended by PREDICT CC or PREDICT team members
January 15, 2017	2	First samples (12 oral and cloacal swab samples in VTM) collected from 6 crows and submitted to icddr,b laboratory and preliminary testing completed. These samples were screened by real time PCR for the M gene, H5, H7, and H9. The preliminary results were sent to IEDCR on same day.
January 16, 2017	3	First report of preliminary results to government (Department of Livestock Services and the Forest Dept.) and taskforce by IEDCR
January 18, 2017	5	Additional samples from 27 crows submitted for testing to both icddr,b and BLRI for testing
January 22, 2017	9	Additional preliminary testing completed at icddr,b for confirmation at BLRI; supplemental testing methods begun on Predict-collected samples at Central Disease Investigation Laboratory (CDIL) supporting larger lab system
January 26, 2017	13	PREDICT submitted an additional 165 samples consisting of 78 crow samples (cloacal and oropharyngeal), 41 poultry offal samples (from the 14 live bird markets), 40 environmental fecal samples and 6 feral dog samples to the PREDICT lab at icddr,b.
January 30, 2017	17	PREDICT's anthropologist performed observational and informal interviews at one live bird market neighboring Mohakhali outbreak site. The team sampled 12 dead crows from two locations (7 from Mohakhali wireless, and 5 from Ramana Park) and safely packed and shipped carcasses to CDIL for safe disposal. 12 swab samples from the crows were shipped to icddr,b lab for testing. PREDICT team also found 7 new crow roosts with apparently healthy crows and no history of crow die-off according to local residents. The anthropology team has one more field site visit and then then will finalize their report. Additional biological sample and behavioral data collection by Predict (ongoing as usual Predict scope of work). Laboratory diagnostics are ongoing
January 31, 2017	18	PREDICT collected observational behavioral data and conducted informal interviews with vendors at a live bird market neighboring Ramna Park outbreak site. The team sampled 9 dead crows from two locations (7 from Mohakhali Wireless, and 2 from Ramna Park) and safely packed and shipped the carcasses to CDIL for disposal via incineration. Cloacal and oropharyngeal swab samples from 9 crows were shipped to icddr,b lab for preliminary testing. Laboratory diagnostics are ongoing.

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		The PREDICT team identified 5 additional crow roosts with apparently healthy crows and no history of recent crow die-off according to local residents.
February 1st, 2017	19	PREDICT collected observational behavioral data and conducted informal interviews with vendors at a live bird market neighboring Sohrawardi Uddan outbreak site. The team sampled 8 dead crows from three locations (6 from Mohakhali Wireless, 1 Sohrawardi Uddan and 1 from Ramna Park) and safely packed and shipped the carcasses to CDIL for disposal via incineration. Cloacal and oropharyngeal swab samples collected from the 8 crows were shipped to icddr,b lab for preliminary testing. Laboratory diagnostics are ongoing. The PREDICT team identified three additional crow roosts with apparently healthy crows and no history of recent crow die-off according to local residents. A regular meeting of all USAID Mission partners, including PREDICT, will take place on February 6, 2017. The Mission Director will be updated on all PREDICT-2 activities as well as on PREDICT's engagement with the Government of Bangladesh in the investigation of the crow die-off. The PREDICT Country Coordinator updated P&R, FAO, CDIL, IEDCR regarding recent activities.
February 2, 2017	20	The team sampled 8 dead crows from three locations (4 from Mohakhali Wireless, 2 Sohrawardi Uddan and 2 from Ramna Park) and safely packed and shipped the carcasses to CDIL for disposal via incineration. Cloacal and oropharyngeal swab samples collected from the 8 crows and were shipped to icddr,b lab for preliminary testing. Laboratory diagnostics are ongoing. The team also found a recently dead Indian flying fox (P*teropus medius*) at a crow die-off site in Sohrawardi Uddan. Bat was necropsied and samples were shipped to icddr,b lab for influenza testing. This concludes the crow sampling in Dhaka. The PREDICT Country Coordinator updated DLS, CDIL, IEDCR regarding recent activities.
PENDING		First notification to USAID of government cleared confirmatory laboratory results

From: Shana Gillette <sgillette@usaid.gov>
Sent: Tue, 21 Mar 2017 15:44:27 -0400
Subject: Re: PREDICT-2 behavioral risk surveillance meeting in DC
To: Leilani Francisco <francisco@ecohealthalliance.org>
Cc: Alisa Pereira <apereira@usaid.gov>, Jonna Mazet <jkmazet@ucdavis.edu>, Peter Daszak <daszak@ecohealthalliance.org>, Christine Kreuder Johnson <ckjohnson@ucdavis.edu>

Dear Leilani,
I have been looking at dates when Dennis and Alisa will be available. Next week, Dennis and Alisa will be available between 9 and 12:30am on Tuesday and Wednesday next week. Would either day work for you? If not, I can look at the following week.

Best,
Shana

On Fri, Mar 17, 2017 at 2:31 PM, Leilani Francisco <francisco@ecohealthalliance.org> wrote:

> Dear Shana and Alisa,
>
> Hope this finds you well. I am pleased to report that I had very intensive and productive meetings with our UC Davis and Metabiota partners in California this week and I'm excited about the way forward.
>
> I'm looking forward to meeting with you in DC and wanted to get in touch about possible meeting dates.
>
> Please let me know what works well on your end and we can go from there.
>
> Best regards,
>
> Leilani
>
> --
>
> **Leilani Francisco, PhD, MA, PMP**
> *Senior Scientist | PREDICT-2 Senior Behavioral Risk Coordinator*
>
> EcoHealth Alliance
> 460 West 34th Street – 17th floor
> New York, NY 10001
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> 1.212.380.4493 (direct)
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> 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 promote conservation and prevent pandemics.***

--
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: 571-243-3424
Email: sgillette@usaid.gov

Sent: Mon, 27 Mar 2017 14:46:06 -0700
Subject: Re: PREDICT-2 behavioral risk surveillance meeting in DC
From: Jonna Mazet <jkmazet@ucdavis.edu>
To: Leilani Francisco <francisco@ecohealthalliance.org>
Cc: Peter Daszak <daszak@ecohealthalliance.org>, Christine Kreuder Johnson <ckjohnson@ucdavis.edu>, "predict@ucdavis.edu" <predict@ucdavis.edu>

Hi Leilani & Peter,
I am just seeing this email, which is completely our fault, as our system for my review of email is not perfect at the moment. I have to say, though, that I am shocked to see it, as I believed that we all agreed on the phone that you would delay meeting with USAID until you prepared a plan forward and shared with me and the senior team for vetting before presenting or even going on a fact finding mission with them. They will not settle with just your doing a fact finding meeting.Did I miss an email with your plan? I certainly have not had a chance to review and approve it if you have send it. I need more than a 24 hour turn around on potential reviews and time for discussion of unclear or unadvisable items.
Please advise today if you are still online,
Jonna

On Fri, Mar 17, 2017 at 11:31 AM, Leilani Francisco <francisco@ecohealthalliance.org> wrote:

> Dear Shana and Alisa,
>
> Hope this finds you well. I am pleased to report that I had very intensive and productive meetings with our UC Davis and Metabiota partners in California this week and I'm excited about the way forward.
>
> I'm looking forward to meeting with you in DC and wanted to get in touch about possible meeting dates.
>
> Please let me know what works well on your end and we can go from there.
>
> Best regards,
>
> Leilani
>
> --

Leilani Francisco, PhD, MA, PMP
Senior Scientist | PREDICT-2 Senior Behavioral Risk Coordinator

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From: Andrew Clements <aclements@usaid.gov>
Sent: Wed, 5 Apr 2017 10:49:58 +0200
Subject: Re: PREDICT International Travel Requests
To: Katherine Leasure <kaleasure@ucdavis.edu>
Cc: Jonna Mazet <jkmazet@ucdavis.edu>, PREDICTMGT <predictmgt@usaid.gov>, "predict@ucdavis.edu" <predict@ucdavis.edu>

Hi Katie,

Sorry for the confusion. No change in process. You have my approval. So next steps are Lisa concurrence then eCC submission.

Andrew

Andrew P. Clements, Ph.D.
Senior Scientific Adviser
Emerging Threats Division/Office of Infectious Diseases/Bureau for Global Health
U.S. Agency for International Development
Mobile phone: 1-571-345-4253
Email: aclements@usaid.gov

On Apr 5, 2017, at 1:22 AM, Katherine Leasure <kaleasure@ucdavis.edu> wrote:

> Hi Andrew,
>
> Liz had advised that the process for Smithsonian/Kenya travel was AOR approval, followed by Mission concurrence, then eCC submission. Is this an overall process change, or case-specific given that this is rescheduled from a previously approved ITA? I just want to make sure we're clear for this and future travel.
>
> Thank you,
> Katie
>
> **From:** Andrew Clements [mailto:aclements@usaid.gov]
> **Sent:** Friday, March 31, 2017 4:33 AM
> **To:** Jonna Mazet
> **Cc:** Katherine Leasure; PREDICTMGT; David J Wolking
> **Subject:** Re: PREDICT International Travel Requests
>
> Hi Katie,
>
> Mazet/New Zealand travel approved.
>
> Mazet/India travel approved subject to mission concurrence.
>
> Kenya travel: based on the last email exchange I saw between Dawn and Lisa Kramer, Dawn notified Lisa that there was a delay,but had not submitted new dates so as far as I can tell Lisa has not provided the required pre-approval for this travel. Please have Dawn get the pre-approval from Lisa. Once that happens, you will automatically have my approval (no need to re-submit the request to me).
>
> Andrew
>
> On Fri, Mar 31, 2017 at 4:03 AM, Jonna Mazet <jkmazet@ucdavis.edu> wrote:
> They may want the name of the conference. In case they do, it's: **3rd International Conference on Animal Health Surveillance**
> Thanks,
> J

On Thu, Mar 30, 2017 at 4:59 PM, Katherine Leasure <kaleasure@ucdavis.edu> wrote:
Please find below international travel requests for your review and approval. Please let me know if you have any questions. Thanks!!

1. Zimmerman (Kenya): $1,500 airfare/$410 (Nairobi) max daily per diem

2. Mazet (India, New Zealand): $12,000 airfare (*business class required due to medical need)*/ $474 (Bangalore), $400 (Delhi) $259 (Rotorua) max daily per diems

Travel Requests:

1. The Smithsonian Institution would like to request travel approval for Dr. Dawn Zimmerman to travel from Washington, DC, USA to Nairobi, Kenya for the period April 23 to May 5, 2017 to help with sample collection and meet with partners. **Revised ITA for postponed travel; previously submitted February 10 for travel to Kenya March 17 to April 3, 2017.*

Trip purpose: Dr. Zimmerman will participate in an animal sampling trip in Turkana, as well as attend meetings with partners, including: International Livestock Research Institute, Department of Veterinary Services, Kenya Wildlife Service, Insect Physiology and Ecology (ICIPE), Mpala Ranch, and the Institute of Primate Research.

2. UC Davis would like to request travel approval for Dr. Jonna Mazet to travel from Davis, California, USA to Bangalore and Delhi, India from April 24 to May 1, 2017 to meet with PREDICT project partners and discuss ongoing and future project strategies. From Delhi, India, she will travel to Rotorua, New Zealand from May 2-5, 2017 to serve as keynote speaker at the 2017 International Conference on Animal Health Surveillance.

Trip purpose: India – Dr. Mazet will travel to India in order to meet with PREDICT partners to discuss ongoing activities in country, as well as coordinate the implementation of future sampling, surveillance, and diagnostic strategies. New Zealand – Dr. Mazet will serve as keynote speaker, with her talk on "Moving from a reactive to preventive paradigm for infectious disease surveillance." **Airfare cost for travel to India will be split with other UC Davis funds, as part of Dr. Mazet's travel will be related to a smaller research project. A travel allowance from conference organizers will cover a portion of the travel costs associated with Dr. Mazet's travel to New Zealand.*

Katherine Leasure
HR/Payroll/Financial Assistant
One Health Institute
University of California, Davis
530-752-7526
530-752-3318 FAX
kaleasure@ucdavis.edu

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UiJFO3w3iX2aKBR7ZW6Ubg%40mail.gmail.com.

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Andrew Clements, Ph.D.
Senior Scientific Adviser
Emerging Threats Division/Office of Infectious Diseases/Bureau for Global Health
U.S. Agency for International Development
Mobile phone: 1-571-345-4253
E-mail: aclements@usaid.gov

For more information on USAID's Emerging Pandemic Threats program, see: http://www.usaid.gov/ept2

From: Kevin Olival, PhD <olival@ecohealthalliance.org>
To: Peter Daszak <daszak@ecohealthalliance.org>;Alison Andre <andre@ecohealthalliance.org>
CC: Anna Willoughby <willoughby@ecohealthalliance.org>;Dr. Jonna Mazet" <jkmazet@ucdavis.edu>;Christine Kreuder Johnson <ckjohnson@ucdavis.edu>;Damien Joly <djoly@metabiota.com>;Brooke Watson <watson@ecohealthalliance.org>
Sent: 4/5/2017 6:52:43 AM
Subject: Corrected GVP Emerging Disease Insight doc - to circulate to PREDICT EB today

Peter,

Attached is the updated GVP EDI to circulate to the P2 internal Exec Board for their review.

Great if it could get sent around and squeezed into the agenda today?

Cheers,
Kevin

EMERGING DISEASE INSIGHTS

Research from the PREDICT Modeling & Analytics team

Global Costs of Emerging Infectious Diseases: Forecasting Return on Investment for the Global Virome Project.

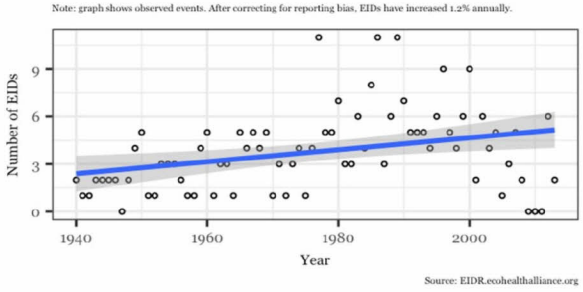
A single emerging infectious disease epidemic such as the SARS pandemic in 2003 cost the global economy an estimated $30-50 billion [1], but investments in prevention and research are often insufficient. To make the economic case for investing in large-scale research programs, it is important to model and quantify the future economic impacts of EIDs and pandemics.

The Global Virome Project (GVP) is a proposed 10-year global effort to discover the global majority of viruses with likely zoonotic potential residing in mammals and waterfowl. This project could reduce the burden of emerging infectious diseases by creating a viral sequence and metadata atlas that will lower response times, speed technological advancements, and provide a starting point for therapeutic discovery and development. Based on current projected lab and field costs, this project is estimated to cost $1.69 billion over the next ten years ($169M annually). Given our estimations of EID frequency, mortality rates, and impacts on the global economy (demand shocks), we project the costs of all potential zoonotic emerging disease events over the next 50 years and calculate projected Return on Investment (ROI) from the Global Virome Project.

COSTS OF EMERGING INFECTIOUS DISEASES

The incidence of emerging infectious disease events is on the rise [1]. A majority of these diseases, including SARS, MERS, Avian Influenza, and Ebola, are zoonoses caused by spillover from wildlife into human populations. To project future annual rates of zoonotic EID events, we calculate the average number and variance of EID events per year and the rate of change over time, based on methods detailed in [1]. To calculate the number of deaths per event, we fit case fatality data in our Emerging Infectious Diseases Repository (EIDR) to a power law distribution. To calculate morbidity, we assume that illness length follows a Poisson distribution with mean 2 - most infections are cleared quickly, but a small number of severe infections can last for several weeks [2].

Figure 1: Annual frequency of Emerging Infectious Diseases from 1940 to 2013.



ESTIMATING GLOBAL DAMAGES FROM EID EVENTS

Global damages, or economic costs, from emerging infectious diseases (EID) depend on the annual number of EID events and the average cost of each event. Damages of one event are the sum costs from mortality $M(t)$, morbidity $A(t)$, and economic shocks $G(t)$. To find the total present value of global damages ($PVGD$), we use a standard 5 percent rate (δ=0.05) to discount future savings to their current value.

December 12, 2016

For details on methods or analysis contact: PREDICTmodeling@ecohealthalliance.org

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WCS

METABIOTA

Smithsonian Institution

$$PVGD = \int_{t=0}^{t=50} (M(t) + A(t) + G(t))\, e^{-\delta t}$$

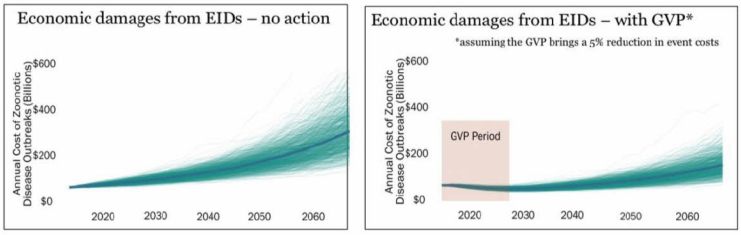
We use methods from [3] to calculate the value of a statistical life and from [2] to calculate the value of one day of work lost. We assume that economic shock costs of a disease event are a non-linear function of fatality rates.

We parameterized our model using the forecasted number of annual EID events, the historical global GDP growth rate of 2.4%, and the 2015 global GDP of $73.4 trillion. **Averaged over 5000 simulations, we find the discounted cost of emerging infectious diseases to be US$3.6 trillion over the next 50 years.**

COSTS AND ROI OF A GLOBAL VIROME PROJECT

To determine how much it would cost to discover all viral diversity in mammals, mark-recapture ecological techniques were used to estimate the sampling effort required to discover all viruses present in one species [4]. We estimate that there are 1,607,837 (672,015 - 2,543,659) undiscovered viruses likely to reside in mammal and waterbird hosts. However, only 31.9-43.7% (512,900-702,625) of these are likely to be zoonotic, and the ones that are more costly to find are less likely to spillover. Assuming that all mammal species would have equivalent lab and field costs, discovering 85% of all mammalian viruses and waterbird influenzas would cost $1.69 billion, or $169 million per year over 10 years.

Figure 2: Cost savings from a 5% reduction in damages caused by the GVP.



Total damages: **$3.6 trillion**

Total savings: **$163 billion**

Having a baseline of identified viral sequences would lead to earlier detection and quicker response times, lowering both epidemic frequency and impact. We assume that these improvements would be implemented two years after viral sequence collection and collectively lead to a conservative 5% in savings from damages in all events in the next 50 years ($163 billion). As such, the $3.4 billion GVP project would *return* **$96 dollars for each dollar invested in it.**

Even if the GVP only reduces the likelihood and impact of EIDs by a small fraction, this project generates large returns on investment due to the high and rising costs of pandemics. The premature loss of lives and economic shocks account for the largest proportion of economic damages from EID events. A $169 million annual budget for a 10-year Global Virome Project is an investment that could produce exceptionally high returns.

References

[1] Jones, K. E. et al. Global trends in emerging infectious diseases. *Nat. Lett.* 451, 990–994 (2008). [2] Molinari, N. A. M. et al. The annual impact of seasonal influenza in the US: Measuring disease burden and costs. *Vaccine* 25, 5086–5096 (2007). [3] Fan, V. Y., Jamison, D. T. & Summers, L. H. The Inclusive Cost of Pandemic Influenza Risk. *NBER Work.* Pap. Ser. 22137, 24 (2015). [4] Anthony, S. J. et al. A strategy to estimate unknown viral diversity in mammals. *MBio 4,* (2013).

From: "Katherine Leasure" <kaleasure@ucdavis.edu>
To: "'Cassandra Louis Duthil'" <clouisduthil@usaid.gov>, "'Jonna Mazet'" <jkmazet@ucdavis.edu>
Cc: "'Alisa Pereira'" <apereira@usaid.gov>, "'Andrew Clements'" <aclements@usaid.gov>
Subject: RE: PREDICT International Travel Requests
Sent: Wed, 5 Apr 2017 17:01:49 -0700

Dear Sara & Cassandra,

Sorry for the boilerplate ITA that might have led to some concern. Dr. Mazet intends to meet only with our PREDICT staff who are employees of EcoHealth Alliance and Sanjay Gandhi Postgraduate Institute of Medical Sciences (SGPIMS), so those are the PREDICT partners to whom we were referring in the ITA. It is important for project cohesion and progress that Dr. Mazet, as global director, check-in with the country teams and make sure that they maintain the overall project goals in mind when they go about their daily work, pursuing the activities necessary to make the project work well locally. In addition, it is important that she have the chance to hear directly and in-person from the project staff on challenges and successes to adaptively manage the project, learn lessons that might be helpful to other in-country teams, and keep morale as high as possible. She would also be happy to meet with or provide an outbrief to the Mission on Monday morning, May 1 (she will need to continue in her travels out of the Delhi airport in the early afternoon). Other than PREDICT staff and the Mission (if available), she does not intend to meet with other partners or government personnel. As noted in the original ITA, the travel expenses for the trip are being minimized by splitting the travel with another of Dr. Mazet's projects. While beneficial, this cost-sharing does restrict the timing to a narrow window. She will, therefore, be meeting with the PREDICT team on the weekend and be available to the Mission on May 1 in the morning.

Thank you,
Katie

From: Cassandra Louis Duthil [mailto:clouisduthil@usaid.gov]
Sent: Wednesday, April 05, 2017 6:33 AM
To: Katie Leasure; Jonna Mazet
Cc: Alisa Pereira; Andrew Clements
Subject: Fwd: PREDICT International Travel Requests

Hello Katie,

Please see the additional requested information below.

Best,

Cassandra Louis Duthil
Program Assistant
Emerging Threats Division
U.S. Agency for International Development (USAID)
Telephone: 202-712-5583 Cell: REDACTED | clouisduthil@usaid.gov

---------- Forwarded message ----------
From: **Sara Heydari** <sheydari@usaid.gov>
Date: Wed, Apr 5, 2017 at 9:30 AM
Subject: Re: PREDICT International Travel Requests
To: Cassandra Louis Duthil <clouisduthil@usaid.gov>
Cc: Xerses Sidhwa <xsidhwa@usaid.gov>, Marietou Satin <masatin@usaid.gov>

Hi Casandra -

Can please provide more information on the scope of Dr. Mazet's visit to India and share an agenda if it's currently available?

Thanks,
Sara

On Fri, Mar 31, 2017 at 9:27 PM, Cassandra Louis Duthil <clouisduthil@usaid.gov> wrote:

H
ello team India,

the following travel approval requests have

come in from PREDICT. We appreciate your concurrence and welcome any questions you may have. *Please note: All travelers should be prepared to provide an in/out brief*

during the duration of their travel.

2. UC Davis would like to request travel approval for Dr. Jonna Mazet to travel from Davis, California, USA to Bangalore and Delhi, India from April 24 to May 1, 2017 to meet with PREDICT project partners and discuss ongoing and future project strategies. From Delhi, India, she will travel to Rotorua, New Zealand from May 2-5, 2017 to serve as keynote speaker at the 2017 International Conference on Animal Health Surveillance.

Trip purpose: India – Dr. Mazet will travel to India in order to meet with PREDICT partners to discuss ongoing activities in country, as well as coordinate the implementation of future sampling, surveillance, and diagnostic strategies. New Zealand – Dr. Mazet will serve as keynote speaker, with her talk on "Moving from a reactive to preventive paradigm for infectious disease surveillance." **Airfare cost for travel to India will be split with other UC Davis funds, as part of Dr. Mazet's travel will be related to a smaller research project. A travel allowance from conference organizers will cover a portion of the travel costs associated with Dr. Mazet's travel to New Zealand.*

Cassandra Louis Duthil
Program Assistant
Emerging Threats Division
U.S. Agency for International Development (USAID)
Telephone: 202-712-5583 Cell: REDACTED clouisduthil@usaid.gov

---------- Forwarded message ----------
From: **Andrew Clements** <aclements@usaid.gov>
Date: Fri, Mar 31, 2017 at 7:32 AM
Subject: Re: PREDICT International Travel Requests
To: Jonna Mazet <jkmazet@ucdavis.edu>
Cc: Katherine Leasure <kaleasure@ucdavis.edu>, PREDICTMGT <predictmgt@usaid.gov>, David J Wolking <djwolking@ucdavis.edu>

Hi Katie,

Mazet/New Zealand travel approved.

Mazet/India travel approved subject to mission concurrence.

Kenya travel: based on the last email exchange I saw between Dawn and Lisa Kramer, Dawn notified Lisa that there was a delay,but had not submitted new dates so as far as I can tell Lisa has not provided the required pre-approval for this travel. Please have Dawn get the pre-approval from Lisa. Once that happens, you will automatically have my approval (no need to re-submit the request to me).

Andrew

On Fri, Mar 31, 2017 at 4:03 AM, Jonna Mazet <jkmazet@ucdavis.edu> wrote:
They may want the name of the conference. In case they do, it's: **3rd International Conference on Animal Health Surveillance**

Thanks,
J

On Thu, Mar 30, 2017 at 4:59 PM, Katherine Leasure <kaleasure@ucdavis.edu> wrote:
Please find below international travel requests for your review and approval. Please let me know if you have any questions. Thanks!!

Travel Requests:

1. The Smithsonian Institution would like to request travel approval for Dr. Dawn Zimmerman to travel from Washington, DC, USA to Nairobi, Kenya for the period April 23 to May 5, 2017 to help with sample collection and meet with partners. **Revised ITA for postponed travel; previously submitted February 10 for travel to Kenya March 17 to April 3, 2017.*

Trip purpose: Dr. Zimmerman will participate in an animal sampling trip in Turkana, as well as attend meetings with partners, including: International Livestock Research Institute, Department of Veterinary Services, Kenya Wildlife Service, Insect Physiology and Ecology (ICIPE), Mpala Ranch, and the Institute of Primate Research.

2. UC Davis would like to request travel approval for Dr. Jonna Mazet to travel from Davis, California, USA to Bangalore and Delhi, India from April 24 to May 1, 2017 to meet with PREDICT project partners and discuss ongoing and future project strategies. From Delhi, India, she will travel to Rotorua, New Zealand from May 2-5, 2017 to serve as keynote speaker at the 2017 International Conference on Animal Health Surveillance.

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Katherine Leasure
HR/Payroll/Financial Assistant
One Health Institute
University of California, Davis
530-752-7526
530-752-3318 FAX
kaleasure@ucdavis.edu

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Andrew Clements, Ph.D.
Senior Scientific Adviser
Emerging Threats Division/Office of Infectious Diseases/Bureau for Global Health
U.S. Agency for International Development

Mobile phone: 1-571-345-4253
E-mail: aclements@usaid.gov

For more information on USAID's Emerging Pandemic Threats program, see: http://www.usaid.gov/ept2

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Sara Heydari

Program and Policy Advisor | USAID | India

email: sheydari@usaid.gov

Telephone:+91-11-2419-8021 | Mobile: + REDACTED

Website: http://www.usaid.gov/india

From: "Zimmerman, Dawn" <ZimmermanD@si.edu>
To: Lisa Kramer <lkramer@usaid.gov>, Katherine Leasure <kaleasure@ucdavis.edu>, Cassandra Louis Duthil <clouisduthil@usaid.gov>
Cc: Andrew Clements <aclements@usaid.gov>, Alisa Pereira <apereira@usaid.gov>, Sarah Paige <spaige@usaid.gov>, Ashna Kibria <akibria@usaid.gov>, "Elizabeth Leasure" <ealeasure@ucdavis.edu>, David John Wolking <djwolking@ucdavis.edu>, "Divband, Sherri" <DivbandS@si.edu>, "East, Larissa" <EastL@si.edu>, "predict@ucdavis.edu" <predict@ucdavis.edu>
Sent: Tue, 11 Apr 2017 12:09:40 +0000
Subject: [predict] RE: PREDICT International Travel Requests

Thank you Lisa,
Understood and this should be my last trip for the year.
We will submit the eCC today and stay tuned for any additional requirements.
Best,
dawn

From: Lisa Kramer [mailto:lkramer@usaid.gov]
Sent: Tuesday, April 11, 2017 7:51 AM
To: Katherine Leasure <kaleasure@ucdavis.edu>; Cassandra Louis Duthil <clouisduthil@usaid.gov>; Zimmerman, Dawn <ZimmermanD@si.edu>
Cc: Andrew Clements <aclements@usaid.gov>; Alisa Pereira <apereira@usaid.gov>; Sarah Paige <spaige@usaid.gov>; Ashna Kibria <akibria@usaid.gov>; Elizabeth Leasure <ealeasure@ucdavis.edu>; David John Wolking <djwolking@ucdavis.edu>; Divband, Sherri <DivbandS@si.edu>; East, Larissa <EastL@si.edu>
Subject: Re: PREDICT International Travel Requests

Thank you all for the additional information. The travel is approved by USAID/Kenya and East Africa. Please submit the eCC, listing me as the POC at Post, and including in the notes section the date that Dawn completed her HT SOS training and the names of the hotels where she will stay.

Dawn,
Please note that security measures in Kenya are ramping up as we have entered the GOK election campaign cycle. Travel within Kenya now has to be reviewed by the embassy security officer to determine if additional security measures are required. I do not think this will be an issue for Turkana because primary election campaigning in that area will happen later in the year. But I may need you to fill out some additional forms. Stay tuned.

Lisa

Lisa Kramer
Regional Emerging Pandemic Threats Advisor
USAID/Kenya and East Africa
REDACTED (O)
C)

On Fri, Apr 7, 2017 at 9:19 PM, Katherine Leasure <kaleasure@ucdavis.edu> wrote:
Dear Lisa,

Please find the additional requested information attached. I have also copied Dawn, Sherri, and Larissa from Smithsonian who can reply with additional clarification, if needed. Thanks!

The Smithsonian Institution would like to request travel approval for Dr. Dawn Zimmerman to travel from Washington, DC, USA to Nairobi, Kenya for the period April 23 to May 5, 2017 to help with sample collection and meet with partners. **Revised ITA for postponed travel; previously submitted February 10 for travel to Kenya March 17 to April 3, 2017.*
Trip purpose: Dr. Zimmerman will participate in an animal sampling trip in Turkana, as well as attend meetings with partners, including: International Livestock Research Institute, Department of Veterinary Services, Kenya Wildlife Service, Insect Physiology and Ecology (ICIPE), Mpala Ranch, and the Institute of Primate Research.

From: Lisa Kramer [mailto:lkramer@usaid.gov]

Sent: Wednesday, April 05, 2017 6:59 AM
To: Cassandra Louis Duthil
Cc: Andrew Clements; Alisa Pereira; Sarah Paige; Ashna Kibria; Katie Leasure; Elizabeth Leasure; David John Wolking
Subject: Re: PREDICT International Travel Requests

Hello Cassandra,

I appreciate that Dawn's trip was previously approved and that she informed us of the need to postpone to later. However, new dates require re-initiating the the USG travel approval through the USAID/Kenya and East Africa Front Office. Please ask PREDICT to resend the full justification for the travel along with her complete itinerary showing all dates and locations of travel. Please not that the ongoing drought is causing addition unrest and conflicts among pastoralists with ranchers and conservancies in the north of Kenya. Therefore, the Mission wants to be able to account for all Americans on official business in country.

Please do not approve the travel and do not submit the eCC until you have approval from USAID/KEA.

Thank you,
Lisa

Lisa Kramer
Regional Emerging Pandemic Threats Advisor
USAID/Kenya and East Africa
REDACTED (O)
C)

On Wed, Apr 5, 2017 at 4:33 PM, Cassandra Louis Duthil <clouisduthil@usaid.gov> wrote:

H
ello team Kenya,

the following travel approval requests have

come in from PREDICT. We appreciate your concurrence and welcome any questions you may have. *Please note: All travelers should be prepared to provide an in/out brief*

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Cassandra Louis Duthil
Program Assistant
Emerging Threats Division
U.S. Agency for International Development (USAID)
Telephone: 202-712-5583 *Cell:* REDACTED | clouisduthil@usaid.gov

---------- Forwarded message ----------
From: **Andrew Clements** <aclements@usaid.gov>
Date: Fri, Mar 31, 2017 at 7:32 AM

Subject: Re: PREDICT International Travel Requests
To: Jonna Mazet <jkmazet@ucdavis.edu>
Cc: Katherine Leasure <kaleasure@ucdavis.edu>, PREDICTMGT <predictmgt@usaid.gov>, David J Wolking <djwolking@ucdavis.edu>

Hi Katie,

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Mazet/India travel approved subject to mission concurrence.

Kenya travel: based on the last email exchange I saw between Dawn and Lisa Kramer, Dawn notified Lisa that there was a delay,but had not submitted new dates so as far as I can tell Lisa has not provided the required pre-approval for this travel. Please have Dawn get the pre-approval from Lisa. Once that happens, you will automatically have my approval (no need to re-submit the request to me).

Andrew

On Fri, Mar 31, 2017 at 4:03 AM, Jonna Mazet <jkmazet@ucdavis.edu> wrote:
They may want the name of the conference. In case they do, it's: **3rd International Conference on Animal Health Surveillance**
Thanks,
J

On Thu, Mar 30, 2017 at 4:59 PM, Katherine Leasure <kaleasure@ucdavis.edu> wrote:
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Katherine Leasure
HR/Payroll/Financial Assistant
One Health Institute

University of California, Davis
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Andrew Clements, Ph.D.
Senior Scientific Adviser
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U.S. Agency for International Development
Mobile phone: 1-571-345-4253
E-mail: aclements@usaid.gov

For more information on USAID's Emerging Pandemic Threats program, see: http://www.usaid.gov/ept2

From:	Andrew Clements <aclements@usaid.gov>
To:	Jonna Mazet <jkmazet@ucdavis.edu>;djwolking@ucdavis.edu <djwolking@ucdavis.edu>;Elizabeth Leasure <ealeasure@ucdavis.edu>
CC:	Shana Gillette <sgillette@usaid.gov>;Alisa Pereira <apereira@usaid.gov>
Sent:	5/10/2017 5:30:07 AM
Subject:	Fwd: Request for OAA guidance on the possibility of transferring sub-awards with Predict agreement

See below for opinion from Ryland. Based on this, UCD has my approval to take over the sub-sub-awards wherever it is replacing Metabiota as the in-country implementing partner.

Andrew P. Clements, Ph.D.
Senior Scientific Adviser
Emerging Threats Division/Office of Infectious Diseases/Bureau for Global Health
U.S. Agency for International Development
Mobile phone: 1-571-345-4253
Email: aclements@usaid.gov

Begin forwarded message:

From: Ryland Marbray <rmarbray@usaid.gov>
Date: May 10, 2017 at 1:55:10 PM GMT+2
To: Andrew Clements <aclements@usaid.gov>
Cc: Patricia Bradley <pbradley@usaid.gov>, Alisa Pereira <apereira@usaid.gov>, Shana Gillette <sgillette@usaid.gov>
Subject: Re: Request for OAA guidance on the possibility of transferring sub-awards with Predict agreement

Hi Andrew,

I have no problems with that. Ultimately the prime (UC Davis) was granted consent to enter into an agreement with Metabiota however that does not relieve them of any responsibilities for preforming all duties within the agreement.

Best,

Ryland

On Tue, May 9, 2017 at 5:06 PM, Andrew Clements <aclements@usaid.gov> wrote:
Hi Ryland and Patricia,

Previously, we informed you that one of Predict's consortium partners (Metabiota) was providing salary supplements in some of the countries in which it is operating. The prime (UC Davis) is considering the possibility of taking over operations in some of the countries where Metabiota currently operates.

A key consideration is what happens to the sub-sub-awards that OAA has already approved between Metabiota and in-country partners. Since these are sub-sub-awards that are all under the USAID agreement with UCD, would it be possible for UCD to just take over the existing sub-sub-awards?

Thanks?

Andrew

Andrew P. Clements, Ph.D.
Senior Scientific Adviser
Emerging Threats Division/Office of Infectious Diseases/Bureau for Global Health
U.S. Agency for International Development
Mobile phone: 1-571-345-4253
Email: aclements@usaid.gov

--

Ryland Marbray
Agreements/Contracting Officer

USAID Office of Acquisition & Assistance
M/OAA/E3
1300 Pennsylvania Ave., NW,
Rm. 567-B, SA-44
Washington, DC 20523

Phone: (202) 567-5328|rmarbray@usaid.gov

From: Peter Daszak <daszak@ecohealthalliance.org>
To: Jonna Mazet <jkmazet@ucdavis.edu>, Molly Turner <turner@ecohealthalliance.org>, "William B. Karesh" <karesh@ecohealthalliance.org>, "Kevin Olival, PhD" <olival@ecohealthalliance.org>, Jon Epstein <epstein@ecohealthalliance.org>, Leilani Francisco <francisco@ecohealthalliance.org>, "Dr. Melinda Rostal" <rostal@ecohealthalliance.org>
Cc: Christine Kreuder Johnson <ckjohnson@ucdavis.edu>, Tracey Goldstein <tgoldstein@ucdavis.edu>, David John Wolking <djwolking@ucdavis.edu>, Katherine Leasure <kaleasure@ucdavis.edu>, Elizabeth Leasure <ealeasure@ucdavis.edu>, Brooke Genovese <bgenovese@ucdavis.edu>
Subject: RE: EB and EHA country review meetings in rm 1023 in Valley Hall
Sent: Thu, 18 May 2017 15:37:53 +0000

Hear! Hear! Jonna…

I also want to thank you and the Davis team for open and positive discussions, and helping us think through solutions creatively. The meeting yesterday is an example of exactly what a good collaboration and partnership should be.

Always a pleasure to see you all. Thanks for hosting us and thanks for your leadership through all the usual shifting landscapes from above…

Cheers,

Peter

Peter Daszak
President

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

+1.212.380.4473 (direct)
+1.212.380.4465 (fax)
www.ecohealthalliance.org

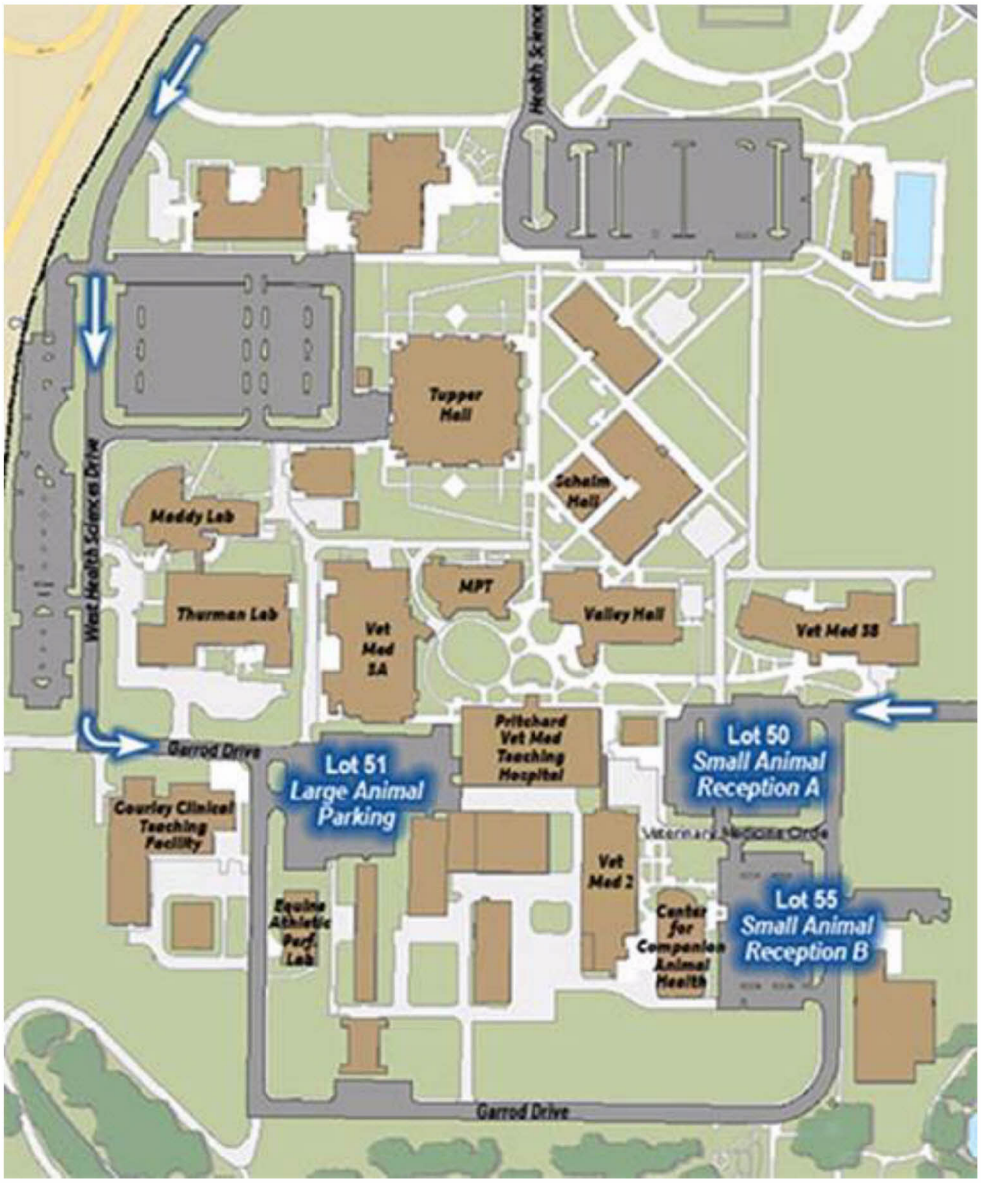
EcoHealth Alliance leads cutting-edge research into the critical connections between human and wildlife health and delicate ecosystems. With this science we develop solutions that promote conservation and prevent pandemics.

From: [redacted] **On Behalf Of** Jonna Mazet
Sent: Thursday, May 18, 2017 10:47 AM
To: Peter Daszak; Molly Turner; William B. Karesh; Kevin Olival, PhD; Jon Epstein; Leilani Francisco; Dr. Melinda Rostal
Cc: Christine Kreuder Johnson; Tracey Goldstein; David John Wolking; Katherine Leasure; Elizabeth Leasure; Brooke Genovese
Subject: Re: EB and EHA country review meetings in rm 1023 in Valley Hall

Good morning,
Thanks very much to you all for coming to Davis and the productive meeting. It is always better to work face-to-face when we have the chance, and I appreciate your creative and collaborative approach tho yesterday's discussions. I'm excited about this next very active phase of Predict.
Could you please pass on this message and my extreme thanks to the rest of the team on the phone for hanging in there with us all day, as well as part of their night. I know we all look forward to being in person with them in September in New York!
Safe travels all,
Jonna

On Tue, May 16, 2017 at 5:00 PM, Elizabeth Leasure <ealeasure@ucdavis.edu> wrote:
Hi everyone. For EB and the EHA country by country review meeting tomorrow, we will be in room 1023 in Valley Hall. EB will run from 9-10 am, and the country by country meeting will begin at 10 am.

For the out-of-towners, Valley Hall is located next to the OHI offices on the western side (see map below). See you soon.



Elizabeth Leasure
One Health Institute
University of California, Davis
530-754-9034 (office)
REDACTED (cell)

From: "William B. Karesh" <karesh@ecohealthalliance.org>
To: Jonna Mazet <jkmazet@ucdavis.edu>
Cc: Peter Daszak <daszak@ecohealthalliance.org>, Molly Turner <turner@ecohealthalliance.org>, "Kevin Olival, PhD" <olival@ecohealthalliance.org>, Jon Epstein <epstein@ecohealthalliance.org>, Leilani Francisco <francisco@ecohealthalliance.org>, "Dr. Melinda Rostal" <rostal@ecohealthalliance.org>, Christine Kreuder Johnson <ckjohnson@ucdavis.edu>, Tracey Goldstein <tgoldstein@ucdavis.edu>, "David John Wolking" <djwolking@ucdavis.edu>, Katherine Leasure <kaleasure@ucdavis.edu>, Elizabeth Leasure <ealeasure@ucdavis.edu>, "Brooke Genovese" <bgenovese@ucdavis.edu>
Subject: Re: EB and EHA country review meetings in rm 1023 in Valley Hall
Sent: Thu, 18 May 2017 17:11:35 +0000

Thanks to you and all the Davis team also for the hospitality and great discussions.

BK

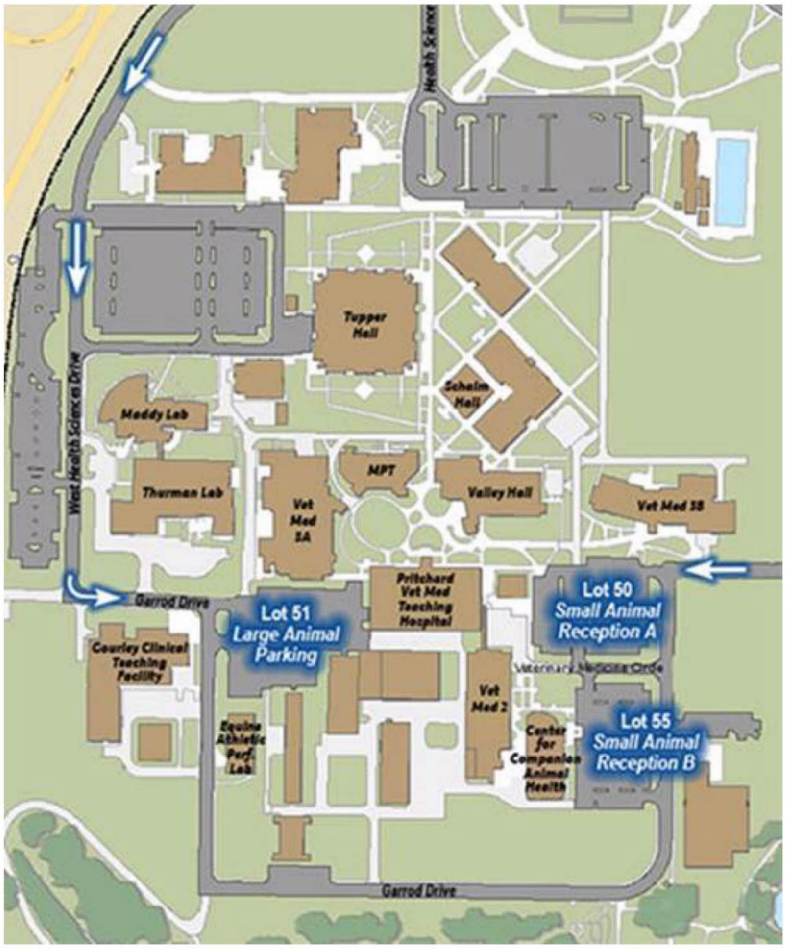
Sent from my iPhone

On May 18, 2017, at 7:47 AM, Jonna Mazet <jkmazet@ucdavis.edu> wrote:

> Good morning,
> Thanks very much to you all for coming to Davis and the productive meeting. It is always better to work face-to-face when we have the chance, and I appreciate your creative and collaborative approach tho yesterday's discussions. I'm excited about this next very active phase of Predict.
> Could you please pass on this message and my extreme thanks to the rest of the team on the phone for hanging in there with us all day, as well as part of their night. I know we all look forward to being in person with them in September in New York!
> Safe travels all,
> Jonna

On Tue, May 16, 2017 at 5:00 PM, Elizabeth Leasure <ealeasure@ucdavis.edu> wrote:

> Hi everyone. For EB and the EHA country by country review meeting tomorrow, we will be in room 1023 in Valley Hall. EB will run from 9-10 am, and the country by country meeting will begin at 10 am.
>
> For the out-of-towners, Valley Hall is located next to the OHI offices on the western side (see map below).
> See you soon.
>
> <image002.jpg>
>
> Elizabeth Leasure
>
> One Health Institute
>
> University of California, Davis
>
> 530-754-9034 (office)
>
> REDACTED (cell)


Health Science
Tupper Hall
Schalm Hall
Maddy Lab
West Health Sciences Drive
Thurman Lab
Vet Med 3A
MPT
Valley Hall
Vet Med 3B
Garrod Drive
Lot 51
Large Animal Parking
Pritchard Vet Med Teaching Hospital
Lot 50
Small Animal Reception A
Veterinary Medicine Circle
Courley Clinical Teaching Facility
Vet Med 2
Center for Companion Animal Health
Lot 55
Small Animal Reception B
Garrod Drive

From: "Kevin Olival, PhD" <olival@ecohealthalliance.org>
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Subject: Re: EB and EHA country review meetings in rm 1023 in Valley Hall
Sent: Fri, 19 May 2017 16:36:54 +0000

Agree! Hear, Hear!
It was a productive discussion, and great to see you all again! Thanks for hosting us in Sunny CA!

Cheers,
Kevin

Kevin J. Olival, PhD
Associate Vice President for Research

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

1.212.380.4478 (direct)
REDACTED (mobile)
1.212.380.4465 (fax)
www.ecohealthalliance.org

On May 18, 2017, at 11:41 AM, Melinda Rostal <rostal@ecohealthalliance.org> wrote:

Thanks everyone for a productive conversation!

Best,
Mindy

Sent from my iPhone

On May 18, 2017, at 10:36 AM, Leilani Francisco <francisco@ecohealthalliance.org> wrote:

> Many thanks Jonna and team!
> Looking forward to the road ahead!
> Leilani

On May 18, 2017, at 10:18 AM, Jon Epstein <epstein@ecohealthalliance.org> wrote:

> Jonna,
> Echoing Peter and Billy's sentiments, thank you and the Davis team for a very productive and worthwhile meeting. Always good to have face time with everybody!

Cheers,
Jon

On May 18, 2017 7:47 AM, "Jonna Mazet" <jkmazet@ucdavis.edu> wrote:

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<image002.jpg>

Elizabeth Leasure

One Health Institute

University of California, Davis

530-754-9034 (office)

REDACTED (cell)

From:	Jonna Mazet <jkmazet@ucdavis.edu>
To:	Maria Makuwa <mmakuwa@metabiota.com>
CC:	Prime Mulembakani <pmulembakani@metabiota.com>;PREDICT-outbreak <predict-outbreak@ucdavis.edu>;Brian Bird <bhbird@ucdavis.edu>;Eddy Rubin <erubin@metabiota.com>;Karen Saylors <ksaylors@metabiota.com>;Damien Joly <djoly@metabiota.com>;James Ayukekbong <jayukekbong@metabiota.com>
Sent:	5/19/2017 2:06:11 PM
Subject:	Re: [predict] [predict-outbreak] Ebola Virus Disease Outbreak in the Bas-Uele province -update

Please use this version for updating, as I made some edits for language clarity and also added the unconfirmed death to the count.
Thanks,
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On Fri, May 19, 2017 at 1:55 PM, Jonna Mazet <jkmazet@ucdavis.edu> wrote:
Thanks, Maria,
Jonna

On Fri, May 19, 2017 at 12:16 PM, Maria Makuwa <mmakuwa@metabiota.com> wrote:

Dear All,

Please find here the updated PREDICT Outbreak Rapid Report form with information from today. The number of cases has increased to 32 with 4 deaths.

Thank you
Best regards
Maria Makuwa
PREDICT Senior Scientist

PREDICT Outbreak or Health Event Rapid Report

Today's Date: *May 19th, 2017*
Working Title of Investigation: *Outbreak of Ebola Virus Disease in the Bas-Uele province, DR Congo*
Cumulative day of the outbreak investigation: 10

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

On 8 May 2017, an alert of 9 suspected cases of Human Viral Hemorrhagic Fever and 2 deaths in the Likati Health Zone, Bas-Uele Province was received from the Provincial Health Officer. Symptoms were fever, bloody vomiting, diarrhea, and bleeding from the nose.

Location	
Country:	*Democratic Republic of Congo*
District:	*Province of Bas-Uele, Health zone of Likati, north-west of Buta*
Village/Town:	*Village in the Nambwa health area, Territory of Aketi*
GPS Coordinates (if known):	
Date that first case(s) of illness occurred (if known or estimate):	*April 22nd, 2017*
Date that PREDICT was first notified of outbreak:	*On May 10th, 2017 the PREDICT CC was informed by the INRB staff working in the virology lab that they were notified of suspected cases of VHF in the Likati Health Zone and that samples were expected to arrive for confirmatory testing anytime.* *On May 11th, 2017 the PREDICT CC was informed that the samples arrived at INRB in early afternoon and are being tested for Ebola. The same day the PREDICT CC was informed by the EPT2 focal point at the mission who talked on the phone with the Bas-Uele provincial health officer about more details on this alert: 9 cases and 2 deaths.*

Key Information	Description of Findings/Actions/Outcomes			
How many affected individuals?		**Suspected:**	**Confirmed:**	**Deaths:**
	Humans	29	2	3 (1 unconfirmed)
	Domestic Animals			
	Wild Animals			
How was outbreak first noticed?	*During 16th week, a 45 year old man (case 1), fisher and farmer, became sick with fever, then bloody vomiting, bloody stools and*			

	*nosebleed in the fisher camp along the river Likati, in the Nambwa health area. He was brought to a traditional healer and then transported by moto with 2 relatives, case 2 (moto driver) and case 3 (his brother) to the Likati general hospital about 45 km away. B*ut he died on the road. Then case 3 decided to return to their village with the corpse. He was buried in the Kapayi village, Nambwa health area. On 25th April, case3 2 and 3 developed the disease with same symptoms. Case 2 died the same day, and case 3 recovered. From these 3 persons, 6 other close contacts were infected. Among them, a young boy who attended the burial of case 1 died on 11th May. The provincial health office has sent a team to the site to investigate and information is expected when they return as the area has no cell phone coverage.
Where was the first reported case? What is/was the extent of geographic spread? Include comments on the apparent speed of spread.	*For now the disease is located within four health centers: Nambwa (11 cases, 2 deaths), Muma (3 cases, 1 death), Ngayi (4 cases, 0 death) and Azande (1 case, 0 death), in the Likati Health Zone, Territory of Aketi in the Bas-Uele province, where the first reported case was treated at the health center. No case is reported outside this area.*
Has the country requested support from PREDICT (include date of request)?	*Yes, the INRB General Director asked PREDICT to retest the 5 samples that were received from the field using PREDICT protocols;*
If so, which government agency requested PREDICT support?	The Ministry of Health through the INRB which is the national Public Health Laboratory
When was PREDICT response initiated (date)?	Saturday, 13th May, 2017
Are other EPT partners involved in the response (which ones and how)?	*None for now*
What type of assistance did PREDICT initially provide? Which PREDICT personnel were involved?	Testing of 5 samples from the field using PREDICT protocols and primers for Filoviruses, by the PREDICT lab manager and lab technician
When was the first official acknowledgement of the outbreak (by which government agency or other reputable body and date)? When was a response initiated and by whom? Which agencies were involved? Who was in charge of the national response?	On May 9th, 2017, the Bas-Uele provincial office informed the MoH direction of disease surveillance of the alert. A team from Buta, the provincial health office was sent to the site to investigate. A team from the MoH direction of disease control, INRB, Hygiene and the Ministry of information travelled on Saturday morning to the field. They reached Likati (health zone office) on Sunday night at 10.00 PM. On Monday morning they had a meeting with the health zone staff and sent a first report to the national coordination committee via the Ministry of Health
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). *Note: Daily updates for ongoing laboratory testing should be entered in the Daily Activities/Timeline table below.*	Yes, the INRB virology laboratory has tested 5 serum samples collected from patients admitted at the Nambwa health center and who were in contact with the diseased cases. They performed real-time PCR and found 2 positive results for Ebola Zaire virus. The tests were performed on 11th May and re-tested on 12th May, 2017 by the same staff. On Saturday, 13th May, the samples were re-tested by the PREDICT staff using the PREDICT protocol. They found one positive result on the 5

	samples, the same that was clearly positive by real-time PCR.
Where was the laboratory testing performed (name of laboratory)?	Samples were tested at the INRB virology laboratory
Number of days between initiation of government response and lab confirmation of laboratory results.	N/A
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:	
Summary of PREDICT Team response activities during the outbreak.	

	Suspected:	Confirmed:	Deaths:
Humans			
Domestic Animals			
Wild Animals			

PREDICT Outbreak or Health Event Response Daily Activities/Timeline

Working Title of Investigation: *Suspicion of VHF in the Bas-Uele province, DR Congo*

*Instructions: This is the timeline of all PREDICT team activities related to this event. Please fill out in detail any PREDICT team activity as they occur on a **daily** basis (e.g., sample collection, other field activities, laboratory testing, outbreak related meetings attended, communications with the Mission or Government, etc.) in addition to the key specific items listed below.*

*Add additional rows into the specific activities listed below **in chronological order** as needed. If a specific listed event has not yet occurred, please put "pending" or "not expected" in the date column.*

Key Events:

Date	Day #	Notification or Action Taken
5/10/2017	1	First notification of 9 suspected cases of Viral Hemorrhagic Fever in the Nambwa Health Area, Likati Health Zone, Bas-Uele Province;
5/11/2017	2	PREDICT Country coordinator (CC) notified of reception of samples from the suspected cases at the INRB; PREDICT CC notification to PREDICT global team
5/12/2017	3	Two samples out of five tested positive for Ebola Zaire virus, and 3 were negative by real-time PCR at the INRB virology laboratory. PREDICT CC attended the meeting of the National coordination committee, where the Minister and his team presented the situation: 9 cases and 2 deaths, and preparations are made of an investigation team composed of epidemiologists, medical biologists and lab technicians (MoH and INRB) to travel tomorrow from Kinshasa to support the local team, begin contact tracing and prepare the logistic for the outbreak response. The area of Nambwa is located 45 km from Kikati but it takes about 5 days to reach by car and 2 days by motorcycle. The Minister and WHO have contacted the UN Mission to provide an helicopter to bring equipment to the site. The INRB will deploy the K-Plan mobile laboratory that was purchased through the USAID funds for Yellow Fever Outbreak in Nambwa.
5/13/2017	4	PREDICT CC attended the meeting of the National coordination committee, where the Ministry of Health updated the partners of the situation on the ground: a total of 11 cases were reported since the beginning of the outbreak with 3 deaths in the 3 health areas of Nambwa (7 cases and 3 deaths), Mouma (3 cases and 0 death) and Ngayi (1 case and 0 death). The provincial investigation team was back to Likati and could send this update by phone via the provincial health office.

		A team of 9 persons leaved Kinshasa today for Nambwa, composed of 2 epidemiologist, 1 lab technician, 1 clinician, 1 data manager, 1 information specialist, 1 hygienist, 1 logistician and 1 psychologist. They are expected to reach Nambwa on Monday or Tuesday and will prepare the logistic for the local coordination committee and begin contact tracing and sensitization. Staffs from the WHO country office and the Ministry of health are working to prepare the list of needs for the outbreak response and a budget. A request was made to the MONUSCO to provide an air lift between Kinshasa and Likati for shipping all materials and equipment, including the K-Plan mobile laboratory from the INRB.
5/15/2017	6	On Saturday, 13th May, the General Director of INRB asked PREDICT to retest the 5 samples received from the field for Filovirus using the PREDICT protocol. The reason was to have a second diagnostic method. The INRB staff tested these samples on Friday and Saturday by real time PCR, using 3 different protocols: the first targeting the L gene returned 1 positive sample; the second targeting the NP gene returned 2 positive results, and the 3rd targeting the Glycoprotein gene returned 1 positive result. Using the PREDICT protocols, the PREDICT staff tested the five samples which returned only one putative positive result on the gel, from the sample which tested positive from the 3 protocols used by the INRB staff. Amplicon from this sample will be send to GATC for sequencing per our protocol. This result was as expected, as the PREDICT filovirus protocols should be and are correct for detection of this virus but are also necessarily less sensitive as a result of conserved technique, resulting in weak or negative reactions in samples with low viral load. PREDICT CC and virologist attended the National Coordination meeting. Two points were discussed: 1) the plan and budget for the response to the outbreak: a small group of people including the MoH, the direction of disease control, the INRB, WHO, UNOCHA and UKAID finalized the plan and budget on Monday morning. Main points are: strengthening of coordination, surveillance, hygiene and biosecurity, medical and psycho-social care, laboratory diagnostic, communication and rehabilitation of health centers and the Likati General Hospital in the Bas-Uele province. No decision of quarantine will be made. The INRB will deploy two mobile

		laboratories, one at Nambwa (epicenter) and a second in Buta with possibility to be deployed anywhere as directed by the epidemiologic situation of the outbreak. The total budget for the response is $8,072,636.00 and includes: coordination at national, provincial and local levels ($945,377), surveillance and laboratory ($1,685,265.00), communication ($505,000.00), materials and supplies ($1,605,000.00), medical and psychosocial care ($2,313,280.00), prevention ($ 477,839.00), Water, hygiene and sanitation ($540,675). Main Challenges are: transport of goods to the affected area (THE UN may help with a Helicopter), and transport of probable cases to the Ebola Treatment Center due to bad roads. 2) the situation on the field: now the total of cases has increased to 20, reported from 4 health areas: Nambwa with 12 cases and 2 deaths, Muma with 3 cases and 1 death, Ngayi with 4 cases and 0 death, Azande with 1 case and 0 death. 5 samples were collected from Nambwa are reached Likati; they are waiting for the samples that will come from Ngayi, then will all be shipped to the INRB because the committee decided not to wait for the mobile lab to be deployed. Right now all cases are being treated at home because there is no facility able to receive the Ebola Treatment Center, which is under rehabilitation. The team has begun to disinfect the laboratory and health centers and the local radio broadcast is used for sensitization.
5/16/2017	7	PREDICT virologist attended the National Coordination Committee. A new case was reported from Nambwa, young girl 16 years old living in a house with a suspect case. Now the total of cases reported are 21: Nambwa 13 cases, 2 deaths; Muma 3 cases, 1 death; Ngayi 4 cases, 0 death, Azande 1 case, 0 death. 3 teams are now deployed in the field on three different directions, with as objectives : active research of suspected cases, sample collection, contacts tracing and assessment of logistic needs. A fourth team, led by the Ministry of Health, will leave Kinshasa tomorrow with one mobile laboratory from the INRB, prepared to perform 100 tests. WHO has mobilized PPEs from the city of Kisangani to support the response. Seven committees were set up and will be meeting everyday; PREDICT was invited to be included in the committee in charge for laboratory and research. The first meeting will be on next Thursday to analyze all needs

		and make request to different partners. Committees will report to the National Coordination Committee everyday. PATH, a CDC Implementing Partner in charge to support the country Emergency Operation Center – GHSA is partnering with DigitalGlobe and UCLA to get precise maps of the Likati health zone. They have provided cellphones with GPS to the team who will travel to the site tomorrow.
5/17/2017	8	The PREDICT Lab manager attended the National Coordination Committee meeting at the MoH: no new cases reported from Likati, still a total of 21 cases with 3 deaths, and 4 health areas affected; samples were collected from a total of 13 cases; 5 were shipped to Kinshasa and tested at the INRB, and 8 are kept in Aketi waiting to be tested on site. The investigation team has identified a total of 416 contacts to be followed. A team from the INRB travelled this morning with the 1st mobile laboratory which will be deployed in Nambwa. The 2nd mobile laboratory (K-Plan) will be transported to the field tomorrow and will be deployed in Likati. A fourth investigation team, led by the Minister of Health will travel to the site tomorrow. WHO has confirmed that PPEs (unknown number of kits) were deployed in Aketi, from their stockpile in Kisangani PREDICT was requested by the Commission of Laboratory and Research to provide for the mobile laboratory: one glovebox, 1 Qiagen extraction kit and Ethanol.
5/18/2017	9	PREDICT CC and virologist attended the 1st meeting of the commission for laboratory and research, with staffs from the INRB, CDC, UCLA and FAO-ECTAD: - The mobile lab arrived and was deployed in Aketi with 4 INRB staffs; - The K-Plan laboratory travelled today and will be deployed in Buta, the provincial capital city; - INRB transmitted a list of reagents and supplies needed to perform lab tests in the field; the list was transmitted to the MoH and FAO. The team from FAO informed that they will provide the needed supplies according to what is available now at the Central Vet Lab

		PREDICT virologist attended the National Coordination Committee meeting: The Minister of Health reported on his trip to Aketi: the team is well deployed and performing active research of suspected cases and contacts; visited health facilities and traditional healers, and collected data on burials in villages; local communities very well sensitized; divers opinion leaders intensively collaborating with investigation teams; challenges due to bad roads. Epidemiological update: Total of 29 suspected cases reported, and 3 deaths: Nambwa Health Area=11 cases and 2 deaths; Muma Health Area=3 cases and 1 death; Ngayi Health Area=14 cases and 0 death; Azande Health Area=1 case and 0 deaths. Registered contacts under follow up = 416. A total of 35 samples collected: 5 were shipped to Kinshasa and the remaining stored at Likati waiting to be tested on site. Four new alerts received, 2 from Azande and 2 from Ngabatal, under investigation Mobile lab expected to be operational tomorrow Discussion on vaccination: Director of the Expanded Program for Immunization presented a plan and proposal for the use of experimental vaccine that was used n West Africa, and made of recombinant ZEBOV-VZV. The vaccine is efficient to protect chimpanzees from infection. It should be conserved at -60°C, conditioned in 10 doses/vial and after reconstitution could be conserved between +2 and +8°C for a maximum of 6 hours. The vaccine is administered via intramuscular injection. The Protocol of vaccination is ready and will be submitted this evening to the Ethical Committee at KSPH for approval and will be considered a clinical trial. The vaccine is not approved to be used in humans yet. If the DRC Government accept the use of this vaccine near 12,000 doses could be provided to be administered to teams working in the field.
5/19/2017	10	PREDICT virologist attended 2nd meeting of the commission for laboratory and research, with staff from the INRB, CDC, UCLA: The commission has transmitted the complete list of members and partners to Ministry of Health. The General Director of INRB presented the strategy for response to the outbreak: - The Mobile Laboratory should be operational for PCR, ELISA tests and

		- rapid tests - As there are minimal deaths reported, there is a possibility that this Ebola outbreak covers the presence of another unknown pathogen – INRB will deploy also the teams from Parasitology and Bacteriology Laboratories to perform investigations and diagnosis on collected samples in the field (ex. Banalia - the shigella and salmonella infections were put in evidence and were responsible for several deaths) **Reagents for diagnosis:** - Two boxes of Ebola rapid tests are available at INRB Virology Laboratory - Another tests will be provided by Japanese Cooperation - The Ebola tests for Mobile Laboratory (Kaplan- Prof. Parisi) were sent to DRC via DHL - The Gene Expert machine with reagents will be received this Sunday and offered by UCLA project to INRB PREDICT virologist also attended the National Coordination Committee meeting: Epidemiological update**:** The communication with the field was very difficult, the completed information with all details will be available tomorrow. At the date of May 18, 2017 a total of 32 suspected cases were reported with 4 deaths: Nambwa-11 cases, 2 deaths, Mouma – 3 cases, 1 death, Ngayi – 14 cases, 1 death*, Azande-2 cases and Ngabatala – 2 cases. Concerning the 4th death* – young girl, 22 years old died with hemorrhagic symptoms, vomiting and fever on May 8, 2017 in the small village near Ngayi. She was the family member of the 3rd died case. The burial ceremony was done for her and only now, when the investigative team has begun evaluating contacts was this case included into the surveillance report. Four direct contacts were found, they are sick and under the surveillance in their village. Registered contacts: 416 persons Samples collected: 35 Any alert reported. The Mobile Laboratory was installed and the testing of samples will start this evening. In Reference Hospital in Likati, the room for suspected cases and sick persons

		was prepared for safety medical follow-up of these persons. The General Director of INRB highlighted the importance of intensive research of new cases, the daily follow-up of all contacts (two times per day with measurement of body temperature). He also highlighted the importance of determining the "case definition" by the medical team deployed in the field. The follow-up of contacts is proving very difficult, noted need of trained volunteers (ex. Members of Red Cross) to help. To facilitate the surveillance of contacts, request use precision on distances separating different sites each from others will be addressed to the field logistic team. **Vaccination Program against Ebola:** The Government has allowed the use of the Ebola vaccine in DRC during this Ebola outbreak. The Protocol of vaccination was submitted to Ethical Committee at KSPH for approval as a clinical trial. Several scenarios were proposed and will be discussed before starting the vaccination.
		First specimen collection
		First specimens delivered to laboratory
		First laboratory preliminary results
		First laboratory confirmed results
		First report of results to government and taskforce
		First notification to USAID of government cleared laboratory results

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
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Mobile Phone:	

Wildlife/Environment ministry or department:	
Name:	Jeff Mapilanga
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OIE focal point:	
Name:	Honore N'Lemba Mabela
Email:	REDACTED
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IHR focal point:	
Name:	Theophile Bokenge
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WHO:	
Name:	Ernest Dabire
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EPT ONE HEALTH WORKFORCE Project:	
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EPT PREPAREDNESS and RESPONSE Project:	
Name:	
Email:	

Mobile Phone:	

Other Important Contacts:

Organization:	
Name:	
Email:	
Mobile Phone:	

Organization:	
Name:	
Email:	
Mobile Phone:	

Organization:	
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Email:	
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Cc: Prime Mulembakani <pmulembakani@metabiota.com>, PREDICT-outbreak <predict-outbreak@ucdavis.edu>, Brian Bird <bhbird@ucdavis.edu>, Eddy Rubin <erubin@metabiota.com>, Karen Saylors <ksaylors@metabiota.com>, Damien Joly <djoly@metabiota.com>
Subject: Re: [predict] [predict-outbreak] Ebola Virus Disease Outbreak in the Bas-Uele province -update
Sent: Sun, 21 May 2017 14:37:09 +0000
PREDICT-DRC_EVD Outbreak Bas-Uele 20May2017.doc

Dear all,

Find attached the updated PREDICT Outbreak Rapid Report form regarding the current Ebola outbreak in DRC.

We are told the Minister of health would sign an official request for PREDICT to perform the following;

- To conduct a joined ecological research with FAO to look for Ebola virus among wild and domestic animals in Likati.

- To test all samples (including negatives) from these outbreak with the PREDICT panel.

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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Sent: Friday, May 19, 2017 2:06:11 PM
To: Maria Makuwa
Cc: Prime Mulembakani; PREDICT-outbreak; Brian Bird; Eddy Rubin; Karen Saylors; Damien Joly; James Ayukekbong
Subject: Re: [predict] [predict-outbreak] Ebola Virus Disease Outbreak in the Bas-Uele province -update

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Thank you
Best regards
Maria Makuwa
PREDICT Senior Scientist

PREDICT Outbreak or Health Event Rapid Report

Today's Date: *May 20th, 2017*
Working Title of Investigation: *Outbreak of Ebola Virus Disease in the Bas-Uele province, DR Congo*
Cumulative day of the outbreak investigation: 11

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

On 8 May 2017, an alert of 9 suspected cases of Human Viral Hemorrhagic Fever and 2 deaths in the Likati Health Zone, Bas-Uele Province was received from the Provincial Health Officer. Symptoms were fever, bloody vomiting, diarrhea, and bleeding from the nose.

Location	
Country:	*Democratic Republic of Congo*
District:	*Province of Bas-Uele, Health zone of Likati, north-west of Buta*
Village/Town:	*Village in the Nambwa health area, Territory of Aketi*
GPS Coordinates (if known):	
Date that first case(s) of illness occurred (if known or estimate):	*April 22nd, 2017*
Date that PREDICT was first notified of outbreak:	*On May 10th, 2017 the PREDICT CC was informed by the INRB staff working in the virology lab that they were notified of suspected cases of VHF in the Likati Health Zone and that samples were expected to arrive for confirmatory testing anytime.* *On May 11th, 2017 the PREDICT CC was informed that the samples arrived at INRB in early afternoon and are being tested for Ebola. The same day the PREDICT CC was informed by the EPT2 focal point at the mission who talked on the phone with the Bas-Uele provincial health officer about more details on this alert: 9 cases and 2 deaths.*

Key Information	**Description of Findings/Actions/Outcomes**			
How many affected individuals?		**Suspected:**	**Confirmed:**	**Deaths:**
	Humans	34	2	4
	Domestic Animals			
	Wild Animals			
How was outbreak first noticed?	*During 16th week, a 45 year old man (case 1), fisher and farmer, became sick with fever, then bloody vomiting, bloody stools and*			

	*nosebleed in the fisher camp along the river Likati, in the Nambwa health area. He was brought to a traditional healer and then transported by moto with 2 relatives, case 2 (moto driver) and case 3 (his brother) to the Likati general hospital about 45 km away. B*ut he died on the road. Then case 3 decided to return to their village with the corpse. He was buried in the Kapayi village, Nambwa health area. On 25th April, case 2 and 3 developed the disease with same symptoms. Case 2 died the same day, and case 3 recovered. From these 3 persons, 6 other close contacts were infected. Among them, a young boy who attended the burial of case 1 died on 11th May. The provincial health office has sent a team to the site to investigate and information is expected when they return as the area has no cell phone coverage.
Where was the first reported case? What is/was the extent of geographic spread? Include comments on the apparent speed of spread.	*For now the disease is located within four health centers: Nambwa (12 cases, 2 deaths), Muma (3 cases, 1 death), Ngayi (4 cases, 0 death) and Azande (1 case, 0 death), in the Likati Health Zone, Territory of Aketi in the Bas-Uele province, where the first reported case was treated at the health center. No case is reported outside this area.*
Has the country requested support from PREDICT (include date of request)?	*Yes, the INRB General Director asked PREDICT to retest the 5 samples that were received from the field using PREDICT protocols;*
If so, which government agency requested PREDICT support?	The Ministry of Health through the INRB which is the national Public Health Laboratory
When was PREDICT response initiated (date)?	Saturday, 13th May, 2017
Are other EPT partners involved in the response (which ones and how)?	*None for now*
What type of assistance did PREDICT initially provide? Which PREDICT personnel were involved?	Testing of 5 samples from the field using PREDICT protocols and primers for Filoviruses, by the PREDICT lab manager and lab technician
When was the first official acknowledgement of the outbreak (by which government agency or other reputable body and date)? When was a response initiated and by whom? Which agencies were involved? Who was in charge of the national response?	On May 9th, 2017, the Bas-Uele provincial office informed the MoH direction of disease surveillance of the alert. A team from Buta, the provincial health office was sent to the site to investigate. A team from the MoH direction of disease control, INRB, Hygiene and the Ministry of information travelled on Saturday morning to the field. They reached Likati (health zone office) on Sunday night at 10.00 PM. On Monday morning they had a meeting with the health zone staff and sent a first report to the national coordination committee via the Ministry of Health
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). *Note: Daily updates for ongoing laboratory testing should be entered in the Daily Activities/Timeline table below.*	Yes, the INRB virology laboratory tested 5 serum samples collected from patients admitted at the Nambwa health center and who were in contact with the diseased cases. They performed real-time PCR and found 2 positive results for Zaire Ebola virus. The tests were performed on 11th May and re-tested on 12th May, 2017 by the same staff. On Saturday, 13th May, the samples were re-tested by the PREDICT staff using the PREDICT protocol. They found one positive result on the 5

	samples, the same that was clearly positive by real-time PCR.
Where was the laboratory testing performed (name of laboratory)?	Samples were tested at the INRB virology laboratory
Number of days between initiation of government response and lab confirmation of laboratory results.	N/A
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:	
Summary of PREDICT Team response activities during the outbreak.	

	Suspected:	Confirmed:	Deaths:
Humans			
Domestic Animals			
Wild Animals			

PREDICT Outbreak or Health Event Response Daily Activities/Timeline

Working Title of Investigation: *Suspicion of VHF in the Bas-Uele province, DR Congo*

*Instructions: This is the timeline of all PREDICT team activities related to this event. Please fill out in detail any PREDICT team activity as they occur on a **daily** basis (e.g., sample collection, other field activities, laboratory testing, outbreak related meetings attended, communications with the Mission or Government, etc.) in addition to the key specific items listed below.*

*Add additional rows into the specific activities listed below **in chronological order** as needed. If a specific listed event has not yet occurred, please put "pending" or "not expected" in the date column.*

Key Events:

Date	Day #	Notification or Action Taken
5/10/2017	1	First notification of 9 suspected cases of Viral Hemorrhagic Fever in the Nambwa Health Area, Likati Health Zone, Bas-Uele Province;
5/11/2017	2	PREDICT Country coordinator (CC) notified of reception of samples from the suspected cases at the INRB; PREDICT CC notified PREDICT global team
5/12/2017	3	Two samples out of five tested positive for Ebola Zaire virus, and 3 were negative by real-time PCR at the INRB virology laboratory. PREDICT CC attended the National coordination committee meeting where the Minister and his team presented the situation: 9 cases and 2 deaths, and preparations are made of an investigation team composed of epidemiologists, medical biologists and lab technicians (from the MoH and INRB) to travel tomorrow from Kinshasa to support the local team, begin contact tracing and prepare the logistic for the outbreak response. The area of Nambwa is located 45 km from Likati but it takes about 5 days to reach by car and 2 days by motorcycle. The Minister and WHO have contacted the UN Mission to provide an helicopter to bring equipment to the site. The INRB will deploy the K-Plan mobile laboratory that was purchased through the USAID funds for Yellow Fever Outbreak in Nambwa.
5/13/2017	4	PREDICT CC attended the meeting of the National coordination committee, where the Ministry of Health updated partners of the situation on the ground: a total of 11 cases were reported since the beginning of the outbreak with 3 deaths in the 3 health areas of Nambwa (7 cases and 3 deaths), Mouma (3 cases and 0 death) and Ngayi

		(1 case and 0 death). The provincial investigation team was back to Likati and could send this update by phone via the provincial health office. A team of 9 persons left Kinshasa today for Nambwa, composed of 2 epidemiologist, 1 lab technician, 1 clinician, 1 data manager, 1 information specialist, 1 hygienist, 1 logistician and 1 psychologist. They are expected to reach Nambwa on Monday or Tuesday and will prepare the logistic for the local coordination committee and begin contact tracing and sensitization. Staffs from the WHO country office and the Ministry of health are working to prepare the list of needs for the outbreak response and a budget. A request was made to the MONUSCO to provide an air lift between Kinshasa and Likati for shipping all materials and equipment, including the K-Plan mobile laboratory from the INRB.
5/15/2017	6	On Saturday, 13th May, the General Director of INRB asked PREDICT to retest the 5 samples received from the field for Filovirus using the PREDICT protocol. The reason was to have a second diagnostic method. The INRB staff tested these samples on Friday and Saturday by real time PCR, using 3 different protocols: the first targeting the L gene returned 1 positive result; the second targeting the NP gene returned 2 positive results, and the 3rd targeting the Glycoprotein gene returned 1 positive result. Using the PREDICT protocols, the PREDICT staff tested the five samples which returned only one putative positive result on the gel, from the sample which tested positive from the 3 protocols used by the INRB staff. Amplicon from this sample will be send to GATC for sequencing per our protocol. This result was as expected as the PREDICT Filovirus protocols should be and are correct for detection of this virus but are also necessarily less sensitive as a result of conserved technique, resulting in weak or negative reactions in samples with low viral load. PREDICT CC and virologist attended the National Coordination meeting. Two points were discussed: 1) the plan and budget for the outbreak response: a group from the MoH direction of disease control, the INRB, WHO, UNOCHA and UKAID finalized the plan and budget on Monday morning. Main points are: strengthening of coordination, surveillance, hygiene and biosecurity, medical and psycho-social care, laboratory diagnostic, communication and rehabilitation of health centers and the

		Likati General Hospital in the Bas-Uele province. No decision of quarantine will be made. The INRB will deploy two mobile laboratories, one at Nambwa (epicenter) and a second in Buta with possibility to be deployed anywhere based on the epidemiologic situation of the outbreak. The total budget for the response is $8,072,636.00 and includes: coordination at national, provincial and local levels ($945,377), surveillance and laboratory ($1,685,265.00), communication ($505,000.00), materials and supplies ($1,605,000.00), medical and psychosocial care ($2,313,280.00), prevention ($ 477,839.00), Water, hygiene and sanitation ($540,675). Main Challenges are: transport of goods to the affected area (THE UN may help with a Helicopter), and transport of probable cases to the Ebola Treatment Center due to bad roads. 2) the situation on the field: now the total of cases has increased to 20, reported from 4 health areas: Nambwa with 12 cases and 2 deaths, Muma with 3 cases and 1 death, Ngayi with 4 cases and 0 death, Azande with 1 case and 0 death. Samples collected will all be shipped to the INRB because the committee decided not to wait for the mobile lab to be deployed. Right now all cases are being treated at home because there is no facility for handling Ebola cases. The Ebola Treatment Center is still under rehabilitation. The team has begun to disinfect the laboratory and health centers and the local radio broadcast is used for sensitization.
5/16/2017	7	PREDICT virologist attended the National Coordination Committee. A new case was reported from Nambwa, young girl 16 years old living in a house with a suspect case. Now the total number of reported cases are 21: Nambwa 13 cases, 2 deaths; Muma 3 cases, 1 death; Ngayi 4 cases, 0 death, Azande 1 case, 0 death. 3 teams are now deployed in the field in three different locations with the following objectives : active research of suspected cases, sample collection, contacts tracing and assessment of logistic needs. A fourth team led by the Ministry of Health will leave Kinshasa tomorrow with one mobile laboratory from the INRB, prepared to perform 100 tests. WHO has mobilized PPEs from the city of Kisangani to support the response. Seven committees were set up and will be meeting everyday; PREDICT

		was invited to be included in the committee in charge for laboratory and research. The first meeting will be on next Thursday to analyze all needs and make request to different partners. These committees will report to the National Coordination Committee daily. PATH, a CDC Implementing Partner in charge to support the country Emergency Operation Center – GHSA is partnering with DigitalGlobe and UCLA to get precise maps of the Likati health zone. They have provided cellphones with GPS to the team who will travel to the site tomorrow.
5/17/2017	8	The PREDICT Lab manager attended the National Coordination Committee meeting at the MoH: no new cases reported from Likati, still a total of 21 cases with 3 deaths, and 4 health areas affected; samples were collected from a total of 13 cases; 5 were shipped to Kinshasa and tested at the INRB, and 8 are kept in Aketi waiting to be tested on site. The investigation team has identified a total of 416 contacts to be followed. A team from the INRB travelled this morning with the 1st mobile laboratory which will be deployed in Nambwa. The 2nd mobile laboratory (K-Plan) will be transported to the field tomorrow and will be deployed in Likati. A fourth investigation team, led by the Minister of Health will travel to the site tomorrow. WHO has confirmed that PPEs (unknown number of kits) were deployed to Aketi from their stockpile in Kisangani PREDICT was requested by the Commission of Laboratory and Research to provide for the mobile laboratory: one glovebox, 1 Qiagen extraction kit and Ethanol.
5/18/2017	9	PREDICT CC and virologist attended the 1st meeting of the commission for laboratory and research, with staffs from the INRB, CDC, UCLA and FAO-ECTAD: - The mobile lab arrived and was deployed to Aketi with 4 INRB staffs; - The K-Plan laboratory travelled today and will be deployed to Buta, the provincial capital city; - INRB transmitted a list of reagents and supplies needed to perform lab tests in the field; the list was transmitted to the MoH and FAO. The team from FAO informed that they will provide the needed supplies according to what is available now at the Central

		- Vet Lab PREDICT virologist attended the National Coordination Committee meeting: The Minister of Health reported on his trip to Aketi: the deployed team is performing active research of suspected cases and contacts; visited health facilities and traditional healers; ongoing data collected regarding burials in villages; sensitization of local communities; different opinion leaders are intensively collaborating with investigation teams; as well as challenges due to bad roads. Epidemiological update: Total of 29 suspected cases reported, and 3 deaths: Nambwa Health Area=11 cases and 2 deaths; Muma Health Area=3 cases and 1 death; Ngayi Health Area=14 cases and 0 death; Azande Health Area=1 case and 0 deaths. Registered contacts under follow up = 416. A total of 35 samples collected: 5 were shipped to Kinshasa and the remaining stored at Likati waiting to be tested on site. Four new alerts received, 2 from Azande and 2 from Ngabatal, under investigation Mobile lab expected to be operational tomorrow Discussion on vaccination: Director of the Expanded Program for Immunization presented a plan and proposal for the use of experimental vaccine that was used in West Africa which is made of recombinant ZEBOV-VZV. The vaccine is efficient in protecting chimpanzees from infection. It should be conserved at -60°C, conditioned in 10 doses/vial and after reconstitution could be conserved between +2 and +8°C for a maximum of 6 hours. The vaccine is administered via intramuscular injection. The Protocol of vaccination is ready and will be submitted this evening to the Ethical Committee at KSPH for approval and will be considered a clinical trial. The vaccine is not approved to be used in humans yet. If the DRC Government accept the use of this vaccine, nearly 12,000 doses could be provided to be administered to teams working in the field.
5/19/2017	10	PREDICT virologist attended 2nd meeting of the commission for laboratory and research with staff from the INRB, CDC, UCLA: The commission has transmitted the complete list of members and partners to Ministry of Health. The General Director of INRB presented the strategy for response to the outbreak:

		- The Mobile Laboratory should be operational for PCR, ELISA tests and rapid tests - As there are only 3 deaths reported till today there is a possibility that this current Ebola outbreak may be mask by another unknown pathogen – INRB will also deploy a team from the Parasitology and Bacteriology Laboratories to perform investigations and diagnosis on samples collected in the field (for example recently in Banalia - Shigella and Salmonella infections were responsible for several deaths) **Reagents for diagnosis:** - Two boxes of Ebola rapid tests are available at INRB Virology Laboratory - Another tests will be provided by Japanese Cooperation - The Ebola tests for Mobile Laboratory (Kaplan- Prof. Parisi) were sent to DRC via DHL - The Gene Expert machine with reagents will be received this Sunday and offered by UCLA project to INRB PREDICT virologist also attended the National Coordination Committee meeting: Epidemiological update: At the date of May 18, 2017 a total of 32 suspected cases were reported with 4 deaths: Nambwa-11 cases, 2 deaths, Mouma – 3 cases, 1 death, Ngayi – 14 cases, 1 death*, Azande-2 cases and Ngabatala – 2 cases. Concerning the 4th death* – young girl, 22 years old died with hemorrhagic symptoms, vomiting and fever on May 8, 2017 in a small village near Ngayi. She was the family member of the 3rd died case. The burial ceremony was done for her and this was only reported when the surveillance team visited the site. Four direct contacts were identified, they are sick and under the surveillance in the village. Registered contacts: 416 persons Samples collected: 35 The Mobile Laboratory was installed and the testing of samples will start this evening. In the reference Hospital in Likati, separate room for suspected cases and sick persons was prepared for safe medical follow –up of these persons. The General Director of INRB highlighted the importance of intensive research of new cases, the daily follow-up of all contacts (two times per day with measurement of corporal temperature). He also highlighted the importance to determine the “definition of case” by the medical team deployed in the field. The follow-up of contacts is very challenging/difficult to be implemented, there

		is a need for trained voluntaries (ex. members of Red Cross) to help. **Vaccination Program against Ebola:** The Government has approved the use of the Ebola vaccine in DRC during this Ebola outbreak. The Protocol of vaccination was submitted to Ethical Committee at KSPH for approval as a clinical trial. Several scenarios were proposed and will be discussed before starting the vaccination.
5/20/2017	11	PREDICT CC attended the meeting of the commission of Laboratory and Research: Results from the CIRMF laboratory in Gabon: The 2 positive samples for Zaire Ebola Virus out of the 5 that were tested at the INRB were retested and confirmed in CIRMF. The staff at CIRMF is performing whole sequencing of the virus and will send results on Monday or Tuesday with Phylogenetic analysis. The K-Plan mobile laboratory arrived in Kisangani pending transportation to Buta, the provincial capital city. The INRB staff sent to Likati have tested 22 samples collected from suspected cases, all tests (real-time PCR) returned negative results. The director of INRB would like PREDICT to test all negative results with PREDICT protocol for the 5 PREDICT viral families. The DRC PREDICT team is unsure about this as the current sample collection is not in conformity with PREDICT protocol. PREDICT samples should be stored at -80° C soon after collection in either Trizol or VTM which is not the case on the field. PREDICT CC attended the meeting of the National Coordination Committee: The following issues were raised: The data from the field need to be cleaned, waiting for more accurate data tomorrow; the generator of the mobile laboratory is not working, and the lab is using the generator from the Health Zone office; contact tracing is challenging due to bad roads; 2 health facilities were selected to be rehabilitated and transformed to Ebola Treatment Centers (ETC). The K-Plan reagents not arrived yet at the INRB as of this evening at 4.00

		PM The CDC will provide rapid tests for this outbreak It was proposed that the team in Likati prepares and sends a list of all cases and contacts, noting timeline of symptoms occurrence, date of sample collection, and clinical outcome in order to better follow the epidemiological curve and be more specific on contacts who can be considered to be removed from the list All commissions should prepare an operational action plan; all technical discussion should be prepared in the commissions, and each partner interested to support specific actions and activities should present this to the commission.
		First specimens delivered to laboratory
		First laboratory preliminary results
		First laboratory confirmed results
		First report of results to government and taskforce
		First notification to USAID of government cleared laboratory results

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:	

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

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

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:	REDACTED
Mobile Phone:	

EPT PREPAREDNESS and RESPONSE Project:	
Name:	
Email:	
Mobile Phone:	

Other Important Contacts:

Organization:	

Name:	
Email:	
Mobile Phone:	

Organization:	
Name:	
Email:	
Mobile Phone:	

Organization:	
Name:	
Email:	
Mobile Phone:	

Organization:	
Name:	
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Mobile Phone:	

Organization:	
Name:	
Email:	
Mobile Phone:	

From: James Ayukekbong <jayukekbong@metabiota.com>
To: Tracey Goldstein <tgoldstein@ucdavis.edu>, Karen Saylors <ksaylors@metabiota.com>
Cc: Jonna Mazet <jkmazet@ucdavis.edu>, Brian Bird <bhbird@ucdavis.edu>, "Damien Joly" <djoly@metabiota.com>, Eddy Rubin <erubin@metabiota.com>, Maria Makuwa <mmakuwa@metabiota.com>, PREDICT-outbreak <predict-outbreak@ucdavis.edu>, Prime Mulembakani <pmulembakani@metabiota.com>
Subject: Re: [predict] [predict-outbreak] Ebola Virus Disease Outbreak in the Bas-Uele province -update
Sent: Mon, 22 May 2017 16:31:37 +0000

Dear Tracey,

We were told verbally in a meeting that a request may be made for PREDICT to test all outbreak samples (including negatives) using PREDICT panel. We have not received the official request yet.

The only samples tested by PREDICT so far are the initial set of 5 samples that 2 were positive by the INRB real-time PCR protocol and one was confirmed positive by PREDICT Filovirus assay.

I have asked for the INRB protocol used in the field for sample collection, processing, storage and cold chain and I will share this once its received.

Kind regards,

J.A Ayukekbong, PhD
Regional Coordinator /Central Africa
USAID PREDICT | Metabiota
Email: jayukekbong@metabiota.com
Mobile: +1 250-797-7755
Website: www.metabiota.com
Skype: ayukekbong.ayukepi

From: [redacted] > on behalf of Tracey Goldstein <tgoldstein@ucdavis.edu>
Sent: Monday, May 22, 2017 8:56:02 AM
To: Karen Saylors
Cc: Jonna Mazet; Brian Bird; Damien Joly; Eddy Rubin; Maria Makuwa; PREDICT-outbreak; Prime Mulembakani; James Ayukekbong
Subject: Re: [predict] [predict-outbreak] Ebola Virus Disease Outbreak in the Bas-Uele province -update

Thanks Karen.

Please see James's comment from the weekend regarding testing of samples collected by others and whether they were collected and stored appropriately for Predict testing. I am asking for more details on that so we can help give guidance.

Thanks, Tracey

On Mon, May 22, 2017 at 8:52 AM, Karen Saylors <ksaylors@metabiota.com> wrote:

Hi Tracey and Jonna,
I just got off the phone with Prime and want to clarify a few things:
The idea of doing a joint sample collection trip with FAO was mentioned verbally at the Ebola coordination meeting but this has not been requested formally, in a written note from the Ministry, so currently, we are concentrating only on PREDICT supporting INRB in testing outbreak samples with PREDICT panels.

Regarding the thermometers: this is a question of logistical coordination for getting clinical supplies and consumables to the field, which is not PREDICT's domain. There are plenty of thermometers available in Kinshasa but the logistics arm of the response effort has had some

challenges getting those to the outbreak site.

So Tracey, we are not yet collecting samples or storing them, but will certainly be attentive to cold chain if that effort is requested by the MoH.

Thanks,
Karen

From: [redacted] on behalf of Tracey Goldstein <tgoldstein@ucdavis.edu>
Date: Monday, May 22, 2017 at 8:35 AM
To: James Ayukekbong <jayukekbong@metabiota.com>, Jonna Mazet <jkmazet@ucdavis.edu>
Cc: Brian Bird <bhbird@ucdavis.edu>, Damien Joly <djoly@metabiota.com>, Eddy Rubin <erubin@metabiota.com>, Karen Saylors <ksaylors@metabiota.com>, Maria Makuwa <mmakuwa@metabiota.com>, PREDICT-outbreak <predict-outbreak@ucdavis.edu>, Prime Mulembakani <pmulembakani@metabiota.com>
Subject: Re: [predict] [predict-outbreak] Ebola Virus Disease Outbreak in the Bas-Uele province -update

Hi James,
Thank you for the update. Can you tell us a bit about how the samples are being collected and stored? Any details on the media they are using and cold chain would be helpful.
Best Tracey
On Sun, May 21, 2017 at 1:30 PM Jonna Mazet <jkmazet@ucdavis.edu> wrote:

> Thanks, James,
> Jonna
>
> On Sun, May 21, 2017 at 7:37 AM, James Ayukekbong <jayukekbong@metabiota.com> wrote:
>
> Dear all,
>
> Find attached the updated PREDICT Outbreak Rapid Report form regarding the current Ebola outbreak in DRC.
>
> We are told the Minister of health would sign an official request for PREDICT to perform the following;
>
> - To conduct a joined ecological research with FAO to look for Ebola virus among wild and domestic animals in Likati.
>
> - To test all samples (including negatives) from these outbreak with the PREDICT panel.
>
> Kind regards,
>
> **J.A Ayukekbong, PhD**
> Regional Coordinator /Central Africa
> USAID PREDICT | Metabiota
> Email: jayukekbong@metabiota.com
> Mobile: +1 250-797-7755
> Website: www.metabiota.com
> Skype: ayukekbong.ayukepi
>
>

From: [redacted] on behalf of Jonna Mazet <jkmazet@ucdavis.edu>
Sent: Friday, May 19, 2017 2:06:11 PM
To: Maria Makuwa
Cc: Prime Mulembakani; PREDICT-outbreak; Brian Bird; Eddy Rubin; Karen Saylors; Damien Joly; James Ayukekbong
Subject: Re: [predict] [predict-outbreak] Ebola Virus Disease Outbreak in the Bas-Uele province -update

Please use this version for updating, as I made some edits for language clarity and also added the unconfirmed death to the count.
Thanks,
Jonna

On Fri, May 19, 2017 at 1:55 PM, Jonna Mazet <jkmazet@ucdavis.edu> wrote:

> Thanks, Maria,
> Jonna

On Fri, May 19, 2017 at 12:16 PM, Maria Makuwa <mmakuwa@metabiota.com> wrote:

> Dear All,
>
> Please find here the updated PREDICT Outbreak Rapid Report form with information from today. The number of cases has increased to 32 with 4 deaths.

Thank you
Best regards
Maria Makuwa
PREDICT Senior Scientist

--
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: Angela Wang <awang@usaid.gov>
Sent: Mon, 22 May 2017 13:31:50 -0400
Subject: Re: [predict] [predict-outbreak] Ebola Virus Disease Outbreak in the Bas-Uele province -update
To: Jonna Mazet <jkmazet@ucdavis.edu>
Cc: PREDICTMGT <predictmgt@usaid.gov>, Sarah Paige <spaige@usaid.gov>

Thanks Jonna!
On Mon, May 22, 2017 at 1:14 PM, Jonna Mazet <jkmazet@ucdavis.edu> wrote:

FYI,
Jonna

---------- Forwarded message ----------
From: **Karen Saylors** <ksaylors@metabiota.com>
Date: Mon, May 22, 2017 at 8:52 AM
Subject: Re: [predict] [predict-outbreak] Ebola Virus Disease Outbreak in the Bas-Uele province -update
To: Tracey Goldstein <tgoldstein@ucdavis.edu>, Jonna Mazet <jkmazet@ucdavis.edu>
Cc: Brian Bird <bhbird@ucdavis.edu>, Damien Joly <djoly@metabiota.com>, Eddy Rubin <erubin@metabiota.com>, Maria Makuwa <mmakuwa@metabiota.com>, PREDICT-outbreak <predict-outbreak@ucdavis.edu>, Prime Mulembakani <pmulembakani@metabiota.com>, James Ayukekbong <jayukekbong@metabiota.com>

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Cc: Brian Bird <bhbird@ucdavis.edu>, Damien Joly <djoly@metabiota.com>, Eddy Rubin <erubin@metabiota.com>, Karen Saylors <ksaylors@metabiota.com>, Maria Makuwa <mmakuwa@metabiota.com>, PREDICT-outbreak <predict-outbreak@ucdavis.edu>, Prime Mulembakani <pmulembakani@metabiota.com>
Subject: Re: [predict] [predict-outbreak] Ebola Virus Disease Outbreak in the Bas-Uele province -update

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Jonna

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Dear all,

Find attached the updated PREDICT Outbreak Rapid Report form regarding the current Ebola outbreak in DRC.

We are told the Minister of health would sign an official request for PREDICT to perform the following;

- To conduct a joined ecological research with FAO to look for Ebola virus among wild and domestic animals in Likati.

- To test all samples (including negatives) from these outbreak with the PREDICT panel.

Kind regards,

J.A Ayukekbong, PhD
Regional Coordinator /Central Africa
USAID PREDICT | Metabiota
Email: jayukekbong@metabiota.com
Mobile: +1 250-797-7755
Website: www.metabiota.com
Skype: ayukekbong.ayukepi

--

Angela Wang, MSPH
Public Health Advisor
Emerging Threats Division, Office of Infectious Disease
USAID/Washington, Bureau for Global Health
Phone: 202-712-1070 (O) | [redacted]
Email: awang@usaid.gov

From: Andrew Clements <aclements@usaid.gov>
Sent: Thu, 22 Jun 2017 13:34:04 +0200
Subject: Fwd: PREDICT Semi-annual Report
To: Alisa Pereira <apereira@usaid.gov>, Amalhin Shek <ashek@usaid.gov>, Shana Gillette <sgillette@usaid.gov>, David J Wolking <djwolking@ucdavis.edu>, Jonna Mazet <jkmazet@ucdavis.edu>

FYI

Andrew P. Clements, Ph.D.
Senior Scientific Adviser
Emerging Threats Division/Office of Infectious Diseases/Bureau for Global Health
U.S. Agency for International Development
Mobile phone: 1-571-345-4253
Email: aclements@usaid.gov

Begin forwarded message:

From: Sotheara Nop <snop@usaid.gov>
Date: June 22, 2017 at 11:21:39 AM GMT+2
To: Lucy Keatts <REDACTED
Cc: Christina Lau <clau@usaid.gov>, Tracey Goldstein <tgoldstein@ucdavis.edu>, Veasna DUONG <dveasna@pasteur-kh.org>, "Clements, Andrew (GH/HIDN)" <AClements@usaid.gov>
Subject: Re: PREDICT Semi-annual Report

Dear Lucy,

Many thanks for sharing the semi-annual report for PREDICT/Cambodia.

We are really interested in the way in which PREDICT uses infographics format to convey its project info and achievements and wanted to post this report format in our social media. But we found out two things—shape of the country in the map and marking of project name PREDICT pairing with USAID logo, sound not right.

We would much appreciate if you could reshape the country map and mark USAID logo in the right position and then send it back to us so that we can use it in USAID/Cambodia social media.

Thanks for your time and collaboration.

Regards,

Sotheara Nop. MD, MDM
Development Assistance Specialist
for Infectious Diseases
USAID/Cambodia
REDACTED
Email: snop@usaid.gov

On Thu, Jun 22, 2017 at 7:17 AM, Lucy Keatts <REDACTED wrote:

Dear Sotheara and Christina,

I hope my email finds you both well. Please see attached the Semi Annual Report for PREDICT Cambodia.

Should you be interested in viewing the full global PREDICT SAR 2017, you can find it via the following page: www.publications.predict.global

Very best wishes,

Lucy

From:	Andrew Clements <aclements@usaid.gov>
To:	Katherine Leasure <kaleasure@ucdavis.edu>
CC:	PREDICTMGT <predictmgt@usaid.gov>;Predict inbox <predict@ucdavis.edu>;Jonna Mazet <jkmazet@ucdavis.edu>
Sent:	8/31/2017 12:05:10 PM
Subject:	Re: Change to Approved ITA - C. Zambrana-Torrelio to Indonesia/Italy

Thanks. Italy travel approved.

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: aclements@usaid.gov

On Sep 1, 2017, at 1:38 AM, Katherine Leasure <kaleasure@ucdavis.edu> wrote:

Hi Andrew. EcoHealth Alliance has submitted an amendment to a previously approved ITA for Carlos Zambrana-Torrelio, to include travel to Italy. I've highlighted those portions of the ITA that have been updated. Please let me know if you have any questions. Thanks!

EcoHealth Alliance would like to request travel approval for Carlos Zambrana-Torrelio to travel from New York, NY, USA to Jakarta, Indonesia from September 3-9, 2017 for P-2 IDEEAL INDOHUN collaboration. From Jakarta, Indonesia he will travel to Rome, Italy from September 10-16, 2017 to participate in the ASL2050 Technical Meeting, organized by FAO.

Trip purpose: Indonesia - the purpose of the travel is to meet with INDOHUN collaborators to assist with data collection and modeling activities and to build capacity of within Indonesia's One Health Workforce. The EHA team (White, Johnson, Feferholtz, and Zambrana-Torrelio) will conduct a programming and analysis workshop, as well as provide training on economic modeling and scientific communication and community outreach for One Health topics. Italy – Mr. Zambrana-Torrelio will represent the Modeling and Analytics team at this meeting. [**$4,380 airfare/$362 (Jakarta), $510 (Rome) max daily per diems]*

Katherine Leasure
HR/Payroll/Financial Assistant
One Health Institute
University of California, Davis
530-752-7526
530-752-3318 FAX
kaleasure@ucdavis.edu

From: David J Wolking <djwolking@ucdavis.edu>
To: Andrew Clements <aclements@usaid.gov>
CC: Jonna Mazet <jkmazet@ucdavis.edu>;David J Wolking <djwolking@ucdavis.edu>
Sent: 9/28/2017 1:22:49 PM
Subject: Re: GHSA work plans: update from me

Super, I'll put this on our agenda for the management team call Tuesday. Looking forward to hearing all about it!

David

On Thu, Sep 28, 2017 at 1:00 PM, Andrew Clements <aclements@usaid.gov> wrote:
We reviewed these last week. A couple of "would have been nice to include" things from others, but I don't think we need to worry about those for now. Will be sending the work plans to the Africa Missions today or tomorrow. Will let you know if any issues arise.

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: aclements@usaid.gov

Sent: Thu, 19 Oct 2017 12:46:51 -0700
Subject: Re: Breakthrough Action update on field visit and project timeline
From: Brian Bird <bhbird@ucdavis.edu>
To: Shana Gillette <sgillette@usaid.gov>
Cc: Dorothy Peprah <dpeprah@usaid.gov>, Stephanie Clayton <sclayton@jhu.edu>, David J Wolking <djwolking@ucdavis.edu>, "Garrison, Kama (GH/HIDN/ID)" <kgarrison@usaid.gov>, Anton Schneider <aschneider@usaid.gov>, Richard Greene <rgreene@usaid.gov>, Amanda Paust <apaust@usaid.gov>, Latoya Armstrong <laarmstrong@usaid.gov>, Andrew <aclements@usaid.gov>, Kendra Chittenden <kchittenden@usaid.gov>, Tina Dickenson <tina.dickenson@jhu.edu>, Jonna Mazet <jkmazet@ucdavis.edu>, Tracey Goldstein <tgoldstein@ucdavis.edu>, Leilani Francisco <francisco@ecohealthalliance.org>, Emily Hagan <hagan@ecohealthalliance.org>

Hi Shana,

We would also be happy to chat about the good first steps we've had with Breakthrough Action already in Sierra Leone, and how best to proceed with them to meet the important communications needs going forward. I've cc'd in here some of the key persons from PREDICT that are involved in these efforts so that they can also fill the doodle poll and join the call.

Doodle Poll

Thanks!

-Brian

From: Shana Gillette <sgillette@usaid.gov>
Date: Thursday, October 19, 2017 at 5:29 AM
To: Tina Dickenson <tina.dickenson@jhu.edu>
Cc: Dorothy Peprah <dpeprah@usaid.gov>, Stephanie Clayton <sclayton@jhu.edu>, Brian Bird <bhbird@ucdavis.edu>, David J Wolking <djwolking@ucdavis.edu>, "Garrison, Kama (GH/HIDN/ID)" <kgarrison@usaid.gov>, Anton Schneider <aschneider@usaid.gov>, Richard Greene <rgreene@usaid.gov>, Amanda Paust <apaust@usaid.gov>, Latoya Armstrong <laarmstrong@usaid.gov>, Andrew <aclements@usaid.gov>, Kendra Chittenden <kchittenden@usaid.gov>
Subject: Re: Breakthrough Action update on field visit and project timeline

Great, thank you so much!

On Wed, Oct 18, 2017 at 5:07 PM, Tina Dickenson <tina.dickenson@jhu.edu> wrote:

Hi Shana,

Thanks for your email. We will be happy to share about the field visit and our thinking for BA moving forward.

Unfortunately, this Thursday morning does not work well for us. I looked at the schedules for Stephanie and myself as well as Jane Brown and Anna Helland and responded to the doodle with the times that would work well for all of us here.

Hopefully one of those times will work for the others joining the call? If not, please let me know and we can see who from this end can make it when.

Thanks!
Tina

From: Shana Gillette <sgillette@usaid.gov>
Date: Wednesday, October 18, 2017 at 9:50 AM
To: Dorothy Peprah <dpeprah@usaid.gov>, Tina Dickenson <tina.dickenson@jhu.edu>, Stephanie Clayton <sclayton@jhu.edu>, Brian Bird <bhbird@ucdavis.edu>
Cc: David J Wolking <djwolking@ucdavis.edu>, "Garrison, Kama (GH/HIDN/ID)" <kgarrison@usaid.gov>, Anton Schneider <aschneider@usaid.gov>, Richard Greene <rgreene@usaid.gov>, Amanda Paust <apaust@usaid.gov>, Latoya Armstrong <laarmstrong@usaid.gov>, Andrew <aclements@usaid.gov>, Kendra Chittenden <kchittenden@usaid.gov>
Subject: Breakthrough Action update on field visit and project timeline

Hello everyone,

We would like to set up a call to hear about the SL field visit and the projected timeline for project deliverables for the next six months. Please forward this invite to others in BA/PREDICT who you believe should be on this call.

Dorothy is available at 10am this Thursday, October 19, so we are hoping you will be able to make the call at that time.

However, we understand that everyone is traveling, so I have included a link to the Doodle Poll below for you to indicate other days/times that will work. Since we are trying to include West Africa and the U.S. on the call, I have only included morning times EST on the poll.

Doodle Poll

Best Regards,
Shana

--
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:
Personal Cell: REDACTED
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--
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:
Personal Cell: REDACTED
Email: sgillette@usaid.gov

From:	William B. Karesh <karesh@ecohealthalliance.org>
To:	David J Wolking <djwolking@ucdavis.edu>
CC:	Peter Daszak <daszak@ecohealthalliance.org>;Catherine Machalaba <machalaba@ecohealthalliance.org>;Ava Sullivan <sullivan@ecohealthalliance.org>;Evelyn Luciano <luciano@ecohealthalliance.org>;Corina Grigorescu Monagin <cgmonagin@ucdavis.edu>;predict@ucdavis.edu <predict@ucdavis.edu>
Sent:	3/20/2018 12:03:10 PM
Subject:	[predict] Re: Action required: P2 2018 Semi-annual report - due to HQ April 13, 2018

thanks!

BK

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

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 Mar 20, 2018, at 2:57 PM, David J Wolking <djwolking@ucdavis.edu> wrote:

Whoops! Missed Billy on the original....

On Tue, Mar 20, 2018 at 11:56 AM, David J Wolking <djwolking@ucdavis.edu> wrote:
Hey Billy and Catherine,

It's Semi-annual Report time!

I'm attaching your section from the AR 2017 for reference and to update as the SAR 2018 template. Feel free to scrap or retain what you like from this as you update the content from your activities to cover the this report's period of performance (October 1, 2017-March 31, 2018).

Our deadline for submission back to HQ is April 13, 2018. Since EIDITH submissions are in pretty good shape and the report is cast in the same mold as the annual report (or even abbreviated for the semi-annual period), hopefully this is enough time.

I'm also including the M&E components for the Behavior Risk team here with instructions (see below). If you have questions on the M&E stuff, reach out to me and Corina (she's just now back from leave).

Thanks,

David

M&E Guidance:

Please see attached for your relevant M&E indicator reference sheets and template for data entry. The templates have not changed from last year's annual report. Most instructions are included on the template itself but please refer to the indicator reference sheet if you have questions. If applicable, we included cumulative data so that you may add onto this (there is only one cumulative indicator) **The data call is from October 1, 2017 – March 31, 2018.**

Additional information below *(a lot of these indicators are captured from global leads and country teams)*

One Health (Billy/Catherine):

2B:

Qualitative Indicator: List/Description of application of OH approaches in the workforce (consult with Capacity team; (country info captured in our Google form).

3A:

Qualitative Indicator: List/Description of national/regional coordination mechanisms showing improved capacity (country info captured in our Google form)

3B:

Qualitative Indicator: List/Description of global, regional or country (lab, surveillance, workforce, OH, AMR) strategies under implementation (country info captured in our Google form).

3.2a:

#, list of high-level multisectoral and/or multilateral events coordinated (country info captured in our Google form).

3.2b:

#, list of tools for implementation or operationalization developed (consult with Capacity team).

3.2c:

#, list of evidence-based informational resources developed or refined (consult with M&A, Lab, Surveillance, and Capacity teams).

3.2d:

#, list of policy briefs developed and disseminated (consult with M&A, Lab, Surveillance, and Capacity teams).

3.2e:

#, list of community OH events coordinated (country info captured in Google form and now in EIDITH site and event form).

From:	William B. Karesh <karesh@ecohealthalliance.org>
To:	Andrew Clements <AClements@usaid.gov>
CC:	Jonna Mazet <jkmazet@ucdavis.edu>;David Wolking <djwolking@ucdavis.edu>;Peter Daszak <daszak@ecohealthalliance.org>;Leilani Francisco <francisco@ecohealthalliance.org>;PREDICTMGT <predictmgt@usaid.gov>;Ricardo Echalar <rechalar@usaid.gov>;Kendra (Jakarta/Health) Chittenden" <kchittenden@usaid.gov>
Sent:	4/13/2018 9:55:21 AM
Subject:	Re: Plague rodent control strategy

Hi Andrew,

Comments on the attached Word document.

BK

"Protocol for implementation of a community-based intensive rat trapping campaign in Madagascar to prevent plague outbreaks"

General comments

We were not sure if the document represents a proposal or only a pre-proposal concept note. If the latter, we recommend the following considerations and information be included in a more formal proposal:

The protocol described is vague and incomplete in the methods and implementation steps proposed. If submitted in the current form, reviewers will not be able to assess the methods to be implemented. It appears that 5 million rodent traps will be bought and distributed. No risk assessment is provided nor risk mitigation adequately described.

If a full proposal with a detailed protocol, training content and risk assessment has already been submitted separately, then this should be attached to the current protocol.
In its current form, the protocol may pose a series of serious risks to people and animals.

The document produced by WHO / Dr. Steven Belmain describes the reasons why killing and thus reducing rodent populations is efficient in other contexts as well as in plague control. However many steps need to be taken before starting to kill rodents carrying fleas, lice and ticks possibly carrying *Yersinia pestis* and *Rickettsia spp.*, among other agents. Also, most vector-borne diseases are not considered to be "density dependent," meaning the increasing or decreasing the density of the reservoir host species has less effect on transmission of disease to the target host of concern than is seen in diseases with more direct transmission (i.e. Lassa fever virus spread from rodents to humans via food contamination). Hence why vector control is typically found to be more effective than reservoir host control for vector-borne diseases.

Initial success in rat trapping is common, but continued success declines as remaining animals tend to be the ones that are trap-shy or wary. A small number of remaining animals can still support large numbers of fleas. The proposed use of "foot-print tiles" will help to determine how many rodents are not trapped. One might consider a proof of concept trial in a few communities before endeavoring on a project of this scale.

The protocol, the methods description and overall proposal with virtually no risk assessment mentioned are not described in a scientifically sound fashion. There are no bibliographic references in this protocol so it is difficult for reviewers to evaluate the proposed methodologies. The expert of the island on plague Dr. Steven Goodman and Institut Pasteur staff are mentioned but possibly they were not closely involved in writing the document. The insecticide approach and rotation cycle are briefly mentioned without clear assessment of impact on non-target species, consideration of existing resistance, discussion of human safety, or safe and appropriate carcass disposal for potentially tens of millions of rodents is not mentioned.

Team composition and CV's for reference with publication list would add more robustness too.

Specific comments

Trapping and insecticide dispensers

- Intending to implement mass rodent kill campaigns with use of an insecticide presents a series of risks for animal, human health and non-target species on land and in aquatic systems.
- While there is evidence that supports the effectiveness of a 60cm "flea powder" buffer zone, the effectiveness of widespread but incomplete killing of rodents in a plague area is still debatable. The argument that a rat can jump no more than 20cm without considering an escaping flea can spring much further is not considered.
- The insecticide powder is thus assumed to be an instant killer on fleas. Fleas can jump off the host when the rodent is killed, the end of blood circulation and vasoconstriction favors this behavior. How fast is the insecticide in killing the fleas?
- The video shows the efficiency of the trap but doesn't demonstrate nor convince fleas won't be able to escape.
- The term "flea powder" for example should be defined, "insecticide" would probably be more appropriate in this context and the rational used for choosing from the array of available insecticides, rotation cycles, and safety of these for non-target species discussed and referenced.
- Resistance to insecticides are well known, Pasteur Institute and WHO itself has a long history of flea control on Madagascar and recent papers suggest a real problem of resistance. Such references are lacking in the document.
- Insecticide efficiency and resistance of fleas to the selected chemical in all communities should be assessed with approved methods (in vitro with wild caught rodent fleas of the communities targeted, and by dusting runways, live trap rodents at different intervals, establish flea index evolution over time)
- The tracking tile methodology starts with considerations on the purchase size while it should start with a basic description of what is the method, what is the aim and how they will use them, and include an estimate rodent density per household and even species identity. This is not clearly expressed.
- If training details, procedures, recruitment of trainees, and compensation to people (they ask a lot from the people or their literate community members) were attached this would help in reviewing.
- Trucks are required for trap and insecticide delivery. What about rodent collection? Would motorbikes be used? The amount of work to follow up each single household is tremendous, how many trucks and how much fuel will be required for the whole study and to cover 350,000 households. Can trucks reach the affected communities?
- Exit strategy: What is the plan for when traps are broken and when the insecticide powder is not distributed anymore? Rodents have very high reproductive and recolonization potential.

- The function of the oil lamp is not given, it serves probably the same purpose as the candle.

Biosafety and risk management

- Biosafety of people is fundamental to this entire project and is not addressed adequately.
- Burn prevention with lamps and candles need to be taken into account.
- Is there a plan to provide disinfectant to clean traps after a dead rodent is caught?
- PPE provision and biosafety training when a bloody rodent needs to be removed from a trap should be part of this protocol. A list of items is provided but gloves or basic PPE are not on the list of the household kit.
- People will be asked to collect the fleas with forceps and place them in labeled vials. Gloves are not provided.

- Disposal of carcasses is not described. Nowhere is it mentioned what will be done with the rodent carcasses. This is hopefully part of the training and as such training content or synopsis should be provided.
- What steps are going to be used to prevent chickens, goats and other domestic animals in 350,000 households to come in contact with the powder buffer zone or with the dead rats?
- The type of insecticides selected should also be active on lice and ticks ; even if are more host specific, it would be reassuring to know these will be killed and not freed in the homes.
- Releasing so many traps for indoor use will lead to traps used outdoors for catching small mammals either to eat or to protect crops according to our own experience in eastern and Central Africa. This will lead to trap loss. Also, transmission of plague is probably centripetal from the field to the houses and the killing of rodents and releasing fleas in the field might cause underestimated collateral damage and counter effects. An important part of the training will be to let people know not to use traps outdoor, as well as some type of system put into place to monitor use (or misuse).

From:	Kendra Chittenden <kchittenden@usaid.gov>
To:	William B. Karesh <karesh@ecohealthalliance.org>
CC:	Jonna Mazet <jkmazet@ucdavis.edu>;David Wolking <djwolking@ucdavis.edu>;Peter Daszak <daszak@ecohealthalliance.org>;Leilani Francisco <francisco@ecohealthalliance.org>;PREDICTMGT <predictmgt@usaid.gov>;Ricardo Echalar <rechalar@usaid.gov>;Andrew Clements <AClements@usaid.gov>;Anne Laudisoit <laudisoit@ecohealthalliance.org>
Sent:	5/23/2018 9:33:38 AM
Subject:	Re: Plague rodent control strategy

Wonderful- thank you! I will work on identifying a day and time.

Sent from my iPhone

On May 22, 2018, at 10:56 PM, William B. Karesh <karesh@ecohealthalliance.org> wrote:

Hi Kendra,

We would be happy to participate in a phone call to provide support. Let me know date and time when you have it and I'll make arrangements on our end.

A Bientôt,

BK

Sent from my iPhone

William B. Karesh, D.V.M
Executive Vice President for Health and Policy

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On May 22, 2018, at 6:18 PM, Kendra Chittenden <kchittenden@usaid.gov> wrote:

Billy-

I am working with our USAID team in Madagascar and CDC to organize a call with WHO in the next week or 2 to bring together experts to discuss the rat control strategy and try to help improve it before WHO rolls this out in June.

It would be great if EcoHealth Alliance could join. Please let me know if someone would be interested and available to join. They do not have to be a french speaker. CDC Fort Collins experts do not speak French and will join.

We have told WHO that we cannot support this rat control plan beyond providing comments and discussing these with WHO.

We still are hoping to improve the plan before WHO rolls it out.

Thanks for your help!

On Fri, Apr 13, 2018 at 12:55 PM, William B. Karesh <karesh@ecohealthalliance.org> wrote:
Hi Andrew,

Comments on the attached Word document.

--

Kendra Chittenden, Ph.D. | Senior Infectious Disease Advisor| USAID | mobile (703-209-5424) |KChittenden@usaid.gov

From:	Peter Daszak <daszak@ecohealthalliance.org>
To:	David J Wolking <djwolking@ucdavis.edu>;William B. Karesh" <karesh@ecohealthalliance.org>;Kevin Olival <olival@ecohealthalliance.org>
CC:	Molly Turner <turner@ecohealthalliance.org>;Evelyn Luciano <luciano@ecohealthalliance.org>;Alison Andre <andre@ecohealthalliance.org>;predict@ucdavis.edu <predict@ucdavis.edu>
Sent:	7/24/2018 8:33:37 AM
Subject:	[predict] RE: Next P2 brown bag -- Peter

Great – thanks David,

I've attached a word doc with a title, blurb and a couple of images for Alisa to choose and use

Let me know if you need any more…

Cheers,

Peter

Peter Daszak
President

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

Tel. +1 212-380-4474
www.ecohealthalliance.org
@PeterDaszak
@EcoHealthNYC

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: David J Wolking [mailto:djwolking@ucdavis.edu]
Sent: Friday, July 20, 2018 1:00 PM
To: Peter Daszak; William B. Karesh; Kevin Olival
Cc: Molly Turner; Evelyn Luciano; Alison Andre; predict@ucdavis.edu
Subject: Fwd: Next P2 brown bag -- Peter

Hi Peter and Kevin,

We're drawing near to the big brown bag event! Alisa and team are going to begin promoting and sharing save the dates and are asking for a blurb and some promo info to share. It's best to also send a striking image or visual for the email blast that goes out for those that don't read anything ;-)

Would be great to have something to them before next week's management team call in case they have questions.

Thanks and enjoy the weekend!

David

---------- Forwarded message ---------
From: **Alisa Pereira** <apereira@usaid.gov>
Date: Fri, Jul 20, 2018 at 6:28 AM
Subject: Next P2 brown bag -- Peter
To: PREDICTMGT <predictmgt@usaid.gov>, Predict inbox <predict@ucdavis.edu>, David J Wolking <djwolking@ucdavis.edu>, Cassandra Louis Duthil <clouisduthil@usaid.gov>

David and team,

The p2 brown bags are going incredibly well, and there is a lot of enthusiasm at USAID for the series. I believe the next one up to bat is Peter. Cassandra is going to start publicizing the event. Would you please provide a summary "blurb" that we can include to "hook" people so they mark their calendars?

thanks!
alisa

Alisa Pereira, Senior Public Health Advisor
USAID, Contractor
Bureau for Global Health, Office of Infectious Disease, Emerging Threats Division
2100 Crystal Drive, CP3-0001, Arlington, VA 22202
Phone:202-997-9966
Email: apereira@usaid.gov

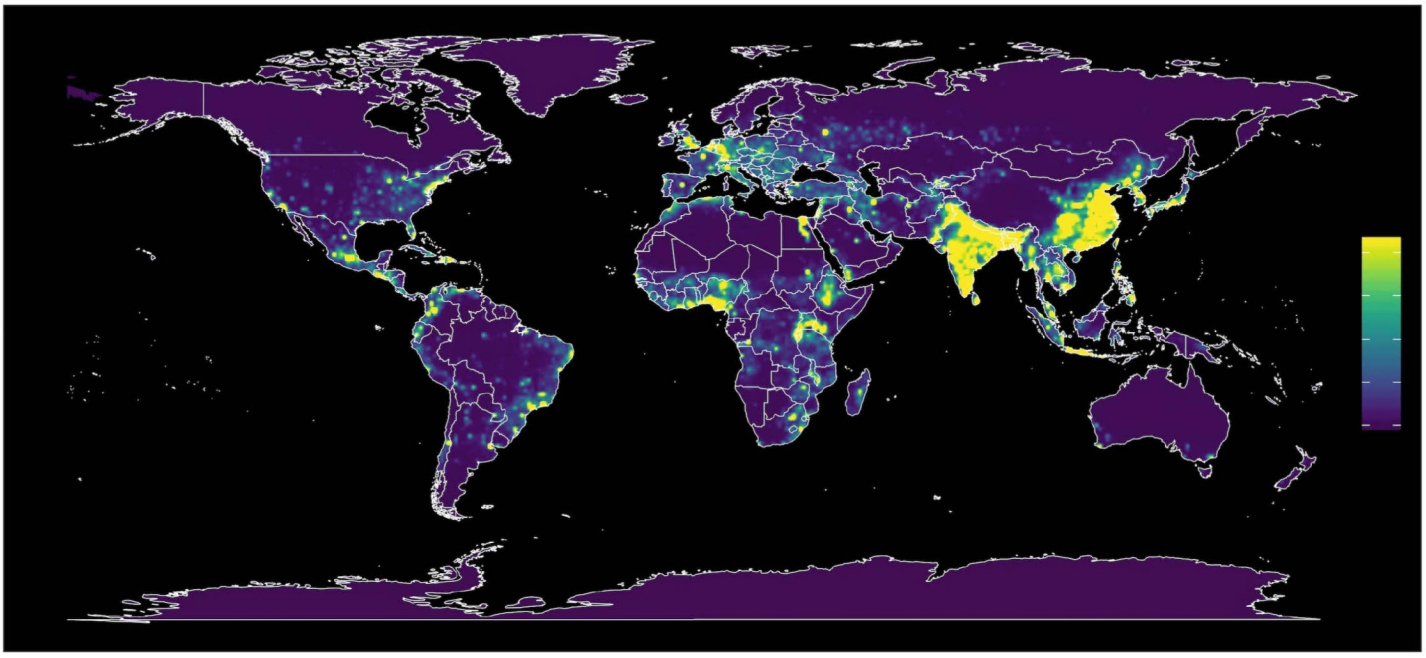
GHSI-III - Social Solutions International, Inc. prime contractor

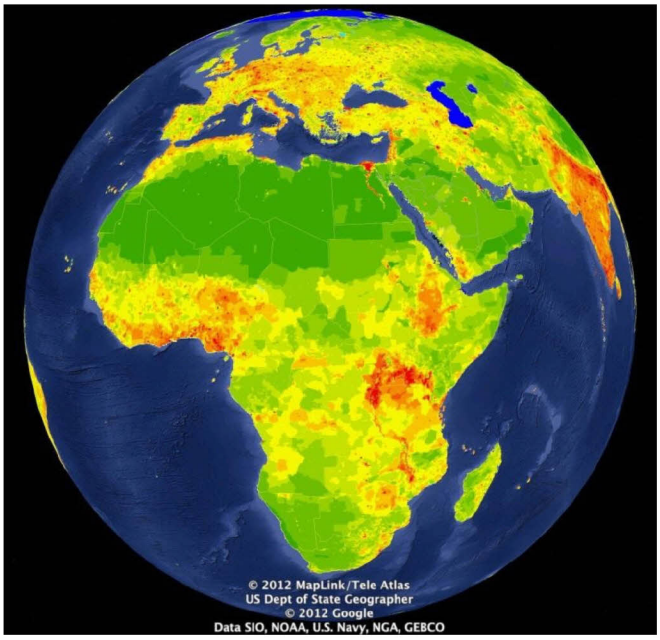
PREDICT Modeling & Analytics team Brown Bag:

"Mapping the risk of emerging diseases across the world"

Peter Daszak, President of EcoHealth Alliance, and head of the PREDICT Modeling & Analytics team, will talk about how PREDICT is analyzing and mapping the risk of emerging diseases. PREDICT's M&A team combines information from on-the-ground surveillance programs, environmental and biodiversity data, and projections of demographic patterns to analyze and map:

- Where the next emerging diseases are likely to originate, and who will be affected
- How population growth and land use change affect disease risk in Africa, South and SE Asia
- Where pathogens will spread to once they emerge
- How we can trace back the origins of diseases like Ebola and influenza to better target surveillance and intervention programs

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Data SIO, NOAA, U.S. Navy, NGA, GEBCO

From:	Andrew Clements <aclements@usaid.gov>
To:	Katherine Leasure <kaleasure@ucdavis.edu>;mdea@usaid.gov <mdea@usaid.gov>
CC:	PREDICTMGT <predictmgt@usaid.gov>;Predict inbox <predict@ucdavis.edu>;Jonna Mazet <jkmazet@ucdavis.edu>;kchittenden@usaid.gov <kchittenden@usaid.gov>
Sent:	8/1/2018 2:18:57 PM
Subject:	Re: Time Sensitive ITA: Guinea team to Liberia (Aug 8)

Approved subject to mission concurrence.

Monica: please provide concurrence.

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: aclements@usaid.gov

On Aug 1, 2018, at 2:39 PM, Katherine Leasure <kaleasure@ucdavis.edu> wrote:

Hi Andrew. Please find below an ITA request for members of our PREDICT Guinea team to travel to Liberia for training. This is a late submission for travel given the response received from the SL mission to our request for concurrence (declined due to current situation). We were able to coordinate with the EHA team to do the needed training while Leilani is in Liberia, hence the rushed approval request. Please let me know if you have any questions. Thank you!

1. Sango, Mamy, Koivogui (Liberia): $1,000 airfare each/$295 (Monrovia) max daily per diem

Travel Request –

UC Davis would like to request travel approval for Mathias Sango, Marie Louise Mamy and Marian Koly Koivogui to travel from Conakry, Guinea to Monrovia, Liberia from August 8-13, 2018 for a behavioral training related to the PREDICT Ebola Host Project.

Trip purpose: This training will focus on the Ebola Host Project Behavioral study objectives and how to administer the human questionnaire. Topics will include ethical conduct, questionnaire administration, data entry, community engagement, and data analysis. The Sierra Leone behavioral team has over one year of experience working with this study and is well equipped to train the Guinea team in appropriate conduct and study design.

Katherine Leasure
One Health Institute
University of California, Davis
530-752-7526
530-752-3318 FAX
kaleasure@ucdavis.edu

From: Monica Dea <mdea@usaid.gov>
To: Andrew Clements <aclements@usaid.gov>
CC: Katherine Leasure <kaleasure@ucdavis.edu>;PREDICTMGT <predictmgt@usaid.gov>;Predict inbox <predict@ucdavis.edu>;Jonna Mazet <jkmazet@ucdavis.edu>;kchittenden@usaid.gov <kchittenden@usaid.gov>
Sent: 8/1/2018 2:33:34 PM
Subject: Re: Time Sensitive ITA: Guinea team to Liberia (Aug 8)

Mission concurs.
Thanks.

Sent from my iPhone

On 1 Aug 2018, at 9:18 PM, Andrew Clements <aclements@usaid.gov> wrote:

Approved subject to mission concurrence.

Monica: please provide concurrence.

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
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Katherine Leasure
One Health Institute
University of California, Davis
530-752-7526
530-752-3318 FAX
kaleasure@ucdavis.edu

--

From: James Desmond [redacted]
Sent: Fri, 7 Sep 2018 09:39:09 +0000
Cc: Monica Dea <mdea@usaid.gov>, "Dr. Charles W. Oliver Jr." <choliver@usaid.gov>, Jon Epstein <epstein@ecohealthalliance.org>, Emma Lane <lane@ecohealthalliance.org>, Andrew Clements <aclements@usaid.gov>, "predict@ucdavis.edu" <predict@ucdavis.edu>, Evelyn Luciano <luciano@ecohealthalliance.org>, "William B. Karesh" <karesh@ecohealthalliance.org>, "Alisa (GH/HIDN) Pereira" <apereira@usaid.gov>, Ava Sullivan <sullivan@ecohealthalliance.org>
To: Tara Milani <tmilani@usaid.gov>
Subject: [predict] PREDICT Partner Update - Y4Q3
PREDICT-2 Y4Q3 Mission Partner Update Liberia.pdf

Hi Tara,

I've attached the quarterly update on PREDICT activities in Year 4, quarter 3 in Liberia. Please let me know if you have any questions. Regards,

Jim

James S. Desmond, DVM, MS
Email: desmond@ecohealthalliance.org
Phone: [redacted] (Kenya)
Phone: [redacted] (Liberia)
Phone: [redacted] (USA)
Skype: jim.desmond

Hi Tara,
I've attached the quarterly update on PREDICT activities in Year 4, quarter 3 in Liberia. Please let me know if you have any questions.

Regards,

Jim

James S. Desmond, DVM, MS
Email: desmond@ecohealthalliance.org
Phone: [redacted] (Kenya)
Phone: [redacted] (Liberia)
Phone: [redacted] USA)
Skype: jim.desmond

USAID | PREDICT
FROM THE AMERICAN PEOPLE

August 6, 2018

Dear Partner,

The PREDICT project, part of USAID's Emerging Pandemic Threats program (EPT), is developing a global early warning system to detect, track, and predict the emergence of new zoonotic pathogens from wildlife that could pose a threat to human health. In Liberia, PREDICT is implemented by EcoHealth Alliance in close partnership with the Society for Conservation of Nature of Liberia, Forestry Development Authority, Ministry of Agriculture and Ministry of Health in cooperation with local stakeholders and communities.

Below is the summary of PREDICT achievements and progress during Year 4 Quarter 3 from April 1st, 2018 to June 30st, 2018. In Liberia, PREDICT activities are being implemented within the Ebola Host Project – a subproject focused on identifying the wildlife reservoir for Ebola virus, and also determining whether transmission has occurred among domestic animals. The Ebola Host Project is also being implemented by PREDICT in Sierra Leone and Guinea. The report includes an overview of PREDICT at the global level, followed by the summary of activities and progress in Liberia.

Please direct all correspondence to the PREDICT Liberia Country Coordinator and EcoHealth Alliance Liberia Program Lead

James S. Desmond
EcoHealth Alliance Liberia Program Lead, Interim Country Coordinator
Email: desmond@ecohealthalliance.org
Phone: +231 776 147 565
Address: Society for Conservation of Nature of Liberia (SCNL)
Opposite German Embassy, Tubman Blvd.
Congo Town, Monrovia

USAID FROM THE AMERICAN PEOPLE | UCDAVIS VETERINARY MEDICINE One Health Institute | WCS | EcoHealth Alliance | METABIOTA | Smithsonian Institution

PREDICT-2 Liberia Continuing Plans

- Identify human populations with highest incidence of Ebola virus infection as well as those populations with the most recent infections.
- Locate wildlife (especially bats) in urban and peri-urban markets where wildlife is sold and consumed as part of the bushmeat trade.
- Identify areas with high rates of hunting or consumption of wildlife.
- Identify rapidly growing human communities around extractive industries or intensifying agricultural and animal production activities.
- Locate wildlife populations (especially bats) in forested areas degraded by population growth, settlements, and extractive industries.
- Conduct questionnaires and surveys on humans in close contact with wildlife either through direct contact via hunting or the bushmeat industry or by living in close proximity to the forest.
- Build capacity within Forestry Development Authority and Ministry of Agriculture on a One Health approach to disease surveillance and prevention in wildlife and domestic animal populations, respectively.
- Build capacity at the Liberian Institute for Biomedical Research (LIBR), our laboratory partner, in diagnostics and molecular biology for Ebola and related viruses.
- Conduct field sampling expeditions at appropriate locations around Liberia, primarily targeting bats, but also goats, dogs and pigs while also conducting observational research on human behavior as it relates to interaction with wildlife.

PREDICT Liberia Summary of Activities & Progress April 1, 2018 through June 30, 2018

Highlights and Success Stories

Surveillance and Field Activities

- The PREDICT Liberia team conducted four field expeditions in this quarter in Nimba and Lofa Counties
- A total of 1475 bats and 103 rodents were captured and sampled resulting in approximately 5200 samples collected.
- During each field trip, PREDICT behavioral scientists conducted 240 behavioral surveys in the area surrounding the sampling sites.
- The country coordinator for PREDICT continues to attend the laboratory, surveillance and rabies technical working group meetings under the One Health Platform. PREDICT has also been invited to attend separate meetings at MOA to provide technical advice and information to the newly established epi-unit housed at MOA.

Diagnostics Activities and Cold Chain

- 7029 samples were scheduled to ship at the end of June, subject to logistical delays. All permits have been obtained and communications with World Courier and Columbia

University, Mailman School of Public Health, Center for Infection and Immunity continue to be updated. Sample testing is pending.

Capacity Building

- The PREDICT team has continued to receive training on PREDICT modules and also on EIDITH data entry.
- Employees hired in March have been fully trained on PREDICT protocols and integrated into the field team.
- A service contract with the National Public Health Institute of Liberia has been completed and is in the processes of becoming fully executed.
- The protocols for the behavioral risk assessment aspect of the PREDICT project was resubmitted to the National Ethics Review Board for review.

Summary of Stakeholder Engagement and Partner Coordination for the Period April 2018 through June 2018:

- The Country Coordinator of PREDICT-LIberia has regular meetings with EPT2 partners, FAO and P&R, to discuss coordinated activities and to provide support to EPT2 efforts. The Country Coordinator assisted in the development of the FAO work plan and aligning it with the World Bank's REDISSE project work plan.
- PREDICT also provides monthly updates to the Managing Director and Deputy Director of the FDA, MOA, and MOH.
- PREDICT attends One Health Technical Working Group meetings related to laboratory, surveillance and rabies and other related meetings across the health sectors as well as provide updates to the USAID Liberia Mission.
- The PREDICT country coordinator attends the weekly National Emergency, Preparedness and Response Committee.
- The PREDICT team worked closely with the MOH Health Promotions Department, P&R and FAO to develop messaging for community engagement activities in Ebola affected communities.
- The Country Coordinator attended an USAID implementer meeting with representatives from other USAID funded to learn more about various aspects of USAID policies.

From: Elizabeth Leasure <ealeasure@UCDAVIS.EDU>
To: Andrew Clements <aclements@usaid.gov>
Cc: Alisa Pereira <apereira@usaid.gov>, Amalhin Shek <ashek@usaid.gov>, Jonna Mazet <jkmazet@ucdavis.edu>, David John Wolking <djwolking@ucdavis.edu>, predict Sympa List <predict@ucdavis.edu>, Hannah R Chale <hrchale@UCDAVIS.EDU>
Subject: PREDICT-2 September 2018 Ebola Financial Report
Sent: Thu, 1 Nov 2018 19:47:32 +0000
PREDICT Ebola Financial Report_Sept 2018_final.pdf

Hi Andrew. Please find attached the Ebola Financial Report for September 2018. If you have any questions, please let me know.

Thanks!
Liz

Elizabeth Leasure
Financial Operations Manager
One Health Institute
REDACTED *(cell)*
530-754-9034 (office)
Skype: ealeasure

PREDICT-2 Expenses - Ebola

September 2018

Cost Category	*US Central*	*Cameroon*	*Cote d'Ivoire*	*DRC*	*Ethiopia*	*Ghana*	*Guinea*	*Kenya*	*Liberia*
Salaries	*7,009*	*30,077*	*13,561*	*19,469*	*22,899*	*22,543*	*16,035*	*15,329*	*814*
Fringe	*3,313*	*11,472*	*5,328*	*6,383*	*8,536*	*2,895*	*7,651*	*5,032*	*386*
Equipment	*0*	*13,767*	*0*	*13,556*	*0*	*0*	*0*	*0*	*0*
Domestic Travel	*1,455*	*2,548*	*0*	*1,458*	*0*	*7,237*	*15,000*	*0*	*0*
Foreign Travel	*0*	*104*	*104*	*26*	*2,625*	*902*	*2,829*	*5,117*	*0*
Services	*0*	*17,629*	*4,020*	*17,206*	*4,020*	*1,005*	*0*	*18,024*	*45,525*
Supplies	*1,675*	*9,043*	*0*	*436*	*99*	*43,508*	*428*	*0*	*0*
Other	*0*	*8,676*	*3,069*	*35,882*	*3,365*	*7,793*	*163,923*	*1,534*	*11,800*
Indirects	*7,668*	*30,823*	*12,090*	*30,806*	*20,903*	*15,073*	*92,134*	*10,580*	*7,410*
Total Costs	**$21,120**	**$124,138**	**$38,172**	**$125,222**	**$62,447**	**$100,956**	**$298,000**	**$55,618**	**$65,935**

Cost Category	*Senegal*	*Sierra Leone*	*Tanzania*	*Uganda*
Salaries	*31,797*	*27,401*	*53,216*	*30,967*
Fringe	*10,317*	*5,886*	*9,704*	*13,189*
Equipment	*0*	*0*	*0*	*0*
Domestic Travel	*4,965*	*14,649*	*16,883*	*893*
Foreign Travel	*607*	*8,086*	*967*	*104*
Services	*4,020*	*0*	*6,958*	*4,440*
Supplies	*312*	*62,192*	*220*	*181*
Other	*16,711*	*153,898*	*24,648*	*9,136*
Indirects	*22,816*	*103,557*	*35,402*	*22,053*
Total Costs	**$91,544**	**$375,669**	**$147,998**	**$80,962**

$1,587,780 PREDICT-2 Costs (Ebola)

From: Andrew Clements <aclements@usaid.gov>
To: Jonna Mazet <jkmazet@ucdavis.edu>
CC: David J Wolking <djwolking@ucdavis.edu>
Sent: 12/19/2018 6:57:15 AM
Subject: Re: Sierra Leone comms timelines

Thanks. I've shared the SL cable with Tara and Tamar so they know.

Andrew 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
E-mail: aclements@usaid.gov

For more information on USAID's Emerging Pandemic Threats program, see: http://www.usaid.gov/ept2

On Wed, Dec 19, 2018 at 3:51 PM Jonna Mazet <jkmazet@ucdavis.edu> wrote:
Sounds right. Leadership in G & L know, but I'll also be sure that they are prepared to discuss with Mission and any Ministries, etc. that have questions, once the information is officially released. Good reminder.
Have a nice rest of your da,
Jonna

On Wed, Dec 19, 2018 at 3:37 AM Andrew Clements <aclements@usaid.gov> wrote:
Thanks. No concerns at this point.

I'm assuming the CDC and UCD press releases will go out tomorrow at 9:00 GMT and then it's okay to share with NSC, FAO, OIE, and WHO even though sub-national briefings not scheduled until later.

Do PREDICT staff in G and L know? They may be asked questions by the host governments once the findings are out. E.g. is this something we should be looking at? Is PREDICT looking for this in our country? etc.

Andrew 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
E-mail: aclements@usaid.gov

For more information on USAID's Emerging Pandemic Threats program, see: http://www.usaid.gov/ept2

On Wed, Dec 19, 2018 at 3:55 AM Jonna Mazet <jkmazet@ucdavis.edu> wrote:

FYI. I have seen draft press releases from GoSL, UCD & CDC. I will forward as soon as we receive final. USAIDis mentioned in all.
I think things are on track, but let me know if you have any concerns.
Jonna

---------- Forwarded message ---------
From: **Brian Bird** <bhbird@ucdavis.edu>
Date: Mon, Dec 17, 2018 at 1:04 PM
Subject: Sierra Leone comms timelines
To: Kristin Burns <kburns@ucdavis.edu>, Kat E Kerlin <kekerlin@ucdavis.edu>, Eunah Regina Cho <eecho@ucdavis.edu>
Cc: David J Wolking <djwolking@ucdavis.edu>, Bridgette Smith <brpsmith@ucdavis.edu>, Brooke Genovese <bgenovese@ucdavis.edu>, Jonna Mazet <jkmazet@ucdavis.edu>, Tracey Goldstein <tgoldstein@ucdavis.edu>

Hi folks,

Just so were all on the same page with the target dates for these communications. It was decided this morning at the Ministry meeting that the various public releases would be:

1. Thursday Dec 20, 2018 09:00 GMT: National level meeting and press conference with TV, radio, and print materials/interviews etc.
2. Over the Holidays and week of Jan 7th, continued local print, TV, and radio media engagements.
3. Week of January 14th 2019: In-person District and village level stake holder meetings and engagements.

So, it seems that the target date to have our press related items ready would be Wednesday evening/Thursday morning this week to synch up with the in-country timelines.

The CDC folks are aware that we'll wait for their draft document, but then adapt and add to that as needed for our purposes. We do need to make sure though that the UCD press release, however that shapes up, keeps the spirit and acknowledgment intact of the collaborative work between the groups and our efforts to communicating this together to the government of Sierra Leone etc.

-B

From: "Towner, Jonathan (Jon) (CDC/DDID/NCEZID/DHCPP)" <jit8@cdc.gov>
Date: Monday, December 17, 2018 at 12:28 PM
To: Brian Bird <bhbird@ucdavis.edu>, "McQuiston, Jennifer H. (CDC/DDID/NCEZID/DHCPP)" <fzh7@cdc.gov>, "Pearson, Christine (CDC/DDID/NCEZID/DHCPP)" <boy3@cdc.gov>, "O'Sullivan, Megan C. (CDC/DDID/NCEZID/DHCPP)" <gtz3@cdc.gov>, Kristin Burns <kburns@ucdavis.edu>, Kat E Kerlin <kekerlin@ucdavis.edu>, Eunah Regina Cho <eecho@ucdavis.edu>
Cc: "Nichol, Stuart T. (CDC/DDID/NCEZID/DHCPP)" <stn1@cdc.gov>, David J Wolking <djwolking@ucdavis.edu>, Bridgette Smith <brpsmith@ucdavis.edu>, "Amman, Brian R. (CDC/DDID /NCEZID/DHCPP)" <cxx1@cdc.gov>, Brooke Genovese <bgenovese@ucdavis.edu>, Jonna Mazet <jkmazet@ucdavis.edu>, Tracey Goldstein <tgoldstein@ucdavis.edu>
Subject: RE: FAQ with updates from VSPB and UCD

Brian,

Looks good. Attached is the FAQ sheet, basically the exact same document you sent with a few very minor tweaks in the last paragraph. I also renamed it so to have a different title than the summary document we sent to for ministry consumption. Also, I've CC'd the communications teams from UCD and CDC.

Not sure where we go from here. When it goes to Sierra Leone, we need to be sure and include Tushar and Dr. Lebbie.

Thanks

Jon

From: Brian Bird <bhbird@ucdavis.edu>
Sent: Monday, December 17, 2018 2:01 PM
To: Jonna Mazet <jkmazet@ucdavis.edu>; Tracey Goldstein <tgoldstein@ucdavis.edu>; Towner, Jonathan (Jon) (CDC/DDID/NCEZID/DHCPP) <jit8@cdc.gov>; Amman, Brian R. (CDC/DDID/NCEZID/DHCPP) <cxx1@cdc.gov>
Cc: Nichol, Stuart T. (CDC/DDID/NCEZID/DHCPP) <stn1@cdc.gov>; David J Wolking <djwolking@ucdavis.edu>; Bridgette Smith <brpsmith@ucdavis.edu>; Brooke Genovese <bgenovese@ucdavis.edu>
Subject: FAQ with updates from VSPB and UCD

Hi folks,

I've attached here a combo version of all the updates I received from Jon, Big-Brian, and Tracey. I accepted almost all of the changes, just left out a few where either the CDC or UCD edits talked over one another or were rendered unnecessary etc. by changes that came earlier up in the revised document. Thanks to you all for these great suggestions and additions!

Two comments/edits from me on this version:

1. I think we should drop the "Egyptian" word from the title and go just for "Rousette bats" in the title…. Otherwise it's a little confusing to the lay reader about did we find this in Egypt or Sierra Leone?, or is this only in bats on holiday going to see the pyramids etc?? ;) Then we keep it further down in the text with the full-name.
2. I went ahead and moved the last paragraph of the answers into a new question to break up the text a bit. "Where do Marburg virus and Ebola virus outbreaks start, and what is being done to understand this in Sierra Leone?"

Seems like the time is right to send these out to the press folks (CDC and UCD working group) so that they have them. ***Any major concerns about that or my last edits mentioned above?*** I'm sure these will get edited again by those folks, so probably best to send what we have I think and let them start chewing on it.

And apologies to Tracey for leaving her off the press email late Friday, I was bone tired by then and left her off by mistake. I'll add you back when I send these FAQs forward.

-Brian

From: David J Wolking <djwolking@ucdavis.edu>
To: Jon Epstein <epstein@ecohealthalliance.org>;Emma Lane <lane@ecohealthalliance.org>;James Desmond <desmond@ecohealthalliance.org>;Ava Sullivan <sullivan@ecohealthalliance.org>
CC: predict@ucdavis.edu <predict@ucdavis.edu>
Sent: 1/25/2019 9:36:50 AM
Subject: [predict] FAQ for Ebola finding in Liberia?

Hey y'all,

Great work on handling the release of the finding this week, the media coverage, social media feeds, and the ProMed post (great moderator top up too!) all looked fantastic. Hope the in-country storm was also positive. Congrats to you all for the hard work, after being through some of this with Brian and team in Sierra Leone, I 100% appreciate all the hours, moving parts, and complexity of getting to the finish line, so hope you have a chance to relax and just enjoy the moment.

Some of our PREDICT teams (Ghana in the region and TZ in East Africa) were wondering if you all have the FAQ finalized. I know Tracey and others may have commented on an early draft but no one in Davis has seen the final. We like to include that in our communications toolkit that I share more broadly to inform our teams as missions and other governments sometimes reach out for briefings shortly after these releases. If you have one can you share? I'll work with the team here to get the final comms packet updated and then pass by you all again in case you have other resources you want to include.

Cheers!

David

From: Jon Epstein <epstein@ecohealthalliance.org>
Sent: Mon, 4 Feb 2019 10:43:09 -0500
To: Alisa Pereira <apereira@usaid.gov>
Cc: Jonna Mazet <jkmazet@ucdavis.edu>, Brian Bird <bhbird@ucdavis.edu>, Predict inbox <predict@ucdavis.edu>, PREDICTMGT <predictmgt@usaid.gov>, Amalhin Shek <ashek@usaid.gov>, Cassandra Louis Duthil <clouisduthil@usaid.gov>
Subject: [predict] Re: EHP Findings "to date" presentation -- Feb 7th

Alisa,
Thanks - that's fantastic. I'll talk to Brian today and we'll get something to you asap.

Cheers,
Jon

On Mon, Feb 4, 2019 at 9:48 AM Alisa Pereira <apereira@usaid.gov> wrote:

> We have secured a conference room, and Dennis' time (for the intro) for the meeting on Feb 7th at 1pm for the presentation on EHP findings. Brian and Jon, thank you so much for making yourselves available at such short notice.
>
> We would greatly appreciate your help in preparing a very short intro blurb that we can circulate with the invitation.
>
> I am copying Cassandra and Amalhin on this message too because they will be critical in the communication/logistical arrangements (including projecting the presentation, etc).
>
> The presentation will be held in our Crystal City offices (2100 Crystal Drive, Arlington, Va 22202) at 1pm. You should plan to arrive earlier than that so get through security. When you arrive, please go to the 9th floor to the security office. Text me before you get in the elevator (202-997-9966), and I will meet you there to get you checked in.
>
> Thank you again!!
> Alisa

Alisa Pereira, Senior Public Health Advisor
USAID, Contractor
Bureau for Global Health, Office of Infectious Disease, Emerging Threats Division
2100 Crystal Drive, CP3-0001, Arlington, VA 22202
Phone:202-997-9966
Email: apereira@usaid.gov

GHSI-III - Social Solutions International, Inc. prime contractor

--
Jonathan H. Epstein DVM, MPH, PhD

Vice President for Science and Outreach

EcoHealth Alliance
460 West 34th Street, Ste. 1701
New York, NY 10001
1.212.380.4467 (direct)
REDACTED (mobile)

web: ecohealthalliance.org

Twitter: @epsteinjon

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: Elizabeth Leasure <ealeasure@UCDAVIS.EDU>
To: Andrew Clements <aclements@usaid.gov>
Cc: David John Wolking <djwolking@ucdavis.edu>, Jonna Mazet <jkmazet@ucdavis.edu>, "predictmgt@usaid.gov" <predictmgt@usaid.gov>, predict Sympa List <predict@ucdavis.edu>
Subject: Re: All-country meeting
Sent: Thu, 14 Mar 2019 13:05:51 +0000

Thanks, Andrew. We'll keep our options open.

Elizabeth Leasure
Financial Operations Manager
One Health Institute
University of California, Davis
Cell: REDACTED

From: Andrew Clements <aclements@usaid.gov>
Sent: Thursday, March 14, 2019 1:18 AM
To: Elizabeth Leasure
Cc: David John Wolking; Jonna Mazet; predictmgt@usaid.gov; predict Sympa List
Subject: Re: All-country meeting

Don't feel limited to Denpasar town if there are better deals elsewhere on the island. It's not too big so easy to get from airport to other places.

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: aclements@usaid.gov

On Mar 13, 2019, at 6:56 PM, Elizabeth Leasure <ealeasure@ucdavis.edu> wrote:

> Hi Andrew. Yes, cost was certainly a primary consideration, as was visa requirements for non-US travelers. Several in-country folks had their visas rejected for the last two All Country meetings, so we felt that picking a location that would ensure comprehensive representation from all PREDICT countries was extremely important, especially since this is to be the last All Country meeting for the PREDICT project.
>
> Thanks,
> Liz
>
> *Elizabeth Leasure*
> *Financial Operations Manager*
> *One Health Institute*
> REDACTED *(cell)*
> *530-754-9034 (office)*
> *Skype: ealeasure*
>
> ---
>
> **From:** Andrew Clements <aclements@usaid.gov>
> **Sent:** Wednesday, March 13, 2019 10:09 AM
> **To:** Elizabeth Leasure <ealeasure@UCDAVIS.EDU>
> **Cc:** David John Wolking <djwolking@ucdavis.edu>; Jonna Mazet <jkmazet@ucdavis.edu>; predictmgt@usaid.gov; predict Sympa List <predict@ucdavis.edu>
> **Subject:** Re: All-country meeting

Thanks, Liz. I'm assuming you initially selected Jakarta because it was at least no more expensive than the others.

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: aclements@usaid.gov
On Mar 13, 2019, at 5:47 PM, Elizabeth Leasure <ealeasure@ucdavis.edu> wrote:

> Hi Andrew. Yes, we conducted a cost analysis, also looking at visa requirements, travel time, weather, etc. for the various locations. We ultimately decided on Bali, Indonesia as the location after several people voiced concerns at the Bronx Zoo meeting about the air quality in Jakarta (which was our initial choice) and confirming that the costs for Jakarta and Bali are comparable. Alternate locations considered in the initial location analysis include Bangkok, Thailand, Dhaka, Bangladesh, Hanoi, Viet Nam, Kathmandu, Nepal, Accra, Ghana, Addis Ababa, Ethiopia, Arusha, Tanzania, and Amman, Jordan.
>
> At this point in time we have formed a committee for the planning effort, which will be spearheaded by EHA as the global lead for Indonesia, but not much else has happened in terms of logistical arrangements. Now that we have confirmed meeting dates, however, we can move forward.
>
> Thanks,
> Liz
>
> *Elizabeth Leasure*
> *Financial Operations Manager*
> *One Health Institute*
> REDACTED *(cell)*
> *530-754-9034 (office)*
> *Skype: ealeasure*
>
> ---
>
> **From:** Andrew Clements <aclements@usaid.gov>
> **Sent:** Wednesday, March 13, 2019 2:04 AM
> **To:** Elizabeth Leasure <ealeasure@UCDAVIS.EDU>; David John Wolking <djwolking@ucdavis.edu>; Jonna Mazet <jkmazet@ucdavis.edu>
> **Cc:** predictmgt@usaid.gov
> **Subject:** All-country meeting
>
> Hi all,
>
> Where are you in arranging the September meeting? Have you done the comparisons within Asia to determine if Indonesia is competitive?
>
> Additional possibilities you might want to include are Bangkok, Thailand and Siem Reap, Cambodia. Both have favorable visa procedures and can be accessed easily by air from major hubs.
>
> 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: aclements@usaid.gov*

From: Elizabeth Leasure <ealeasure@UCDAVIS.EDU>
To: Jonna Mazet <jkmazet@ucdavis.edu>
Cc: David John Wolking <djwolking@ucdavis.edu>, Christine Kreuder Johnson <ckjohnson@UCDAVIS.EDU>, Tracey Goldstein <tgoldstein@ucdavis.edu>
Subject: RE: Schedule meeting to discuss China, Egypt, Jordan, India, Bangladesh spending
Sent: Wed, 5 Jun 2019 19:08:36 +0000

Any availability to schedule this for earlier in the week or push it out to the week of the 17th?

Elizabeth Leasure
Financial Operations Manager
One Health Institute
REDACTED *(cell)*
530-754-9034 (office)
Skype: ealeasure

From: Jon Epstein <epstein@ecohealthalliance.org>
Sent: Wednesday, June 5, 2019 12:00 PM
To: Elizabeth Leasure <ealeasure@UCDAVIS.EDU>
Cc: Peter Daszak <daszak@ecohealthalliance.org>; William B. Karesh <karesh@ecohealthalliance.org>; Evelyn Luciano <luciano@ecohealthalliance.org>; Molly Turner <turner@ecohealthalliance.org>; Jonna Mazet <jkmazet@ucdavis.edu>; Tracey Goldstein <tgoldstein@ucdavis.edu>; Christine Kreuder Johnson <ckjohnson@UCDAVIS.EDU>; David John Wolking <djwolking@ucdavis.edu>
Subject: Re: Schedule meeting to discuss China, Egypt, Jordan, India, Bangladesh spending

Liz,
I'll be out of the office June 13 and 14 and unavailable for the call.
-Jon

On Wed, Jun 5, 2019 at 2:57 PM Elizabeth Leasure <ealeasure@ucdavis.edu> wrote:
Hi everyone. Can you all please confirm your availability for a meeting on Thursday, June 13th between 3 and 5 pm EDT (12-2 pm PDT) to discuss spending in the countries noted above and recent developments with the pending Y5 funding obligation? I anticipate only needing one hour, so please let me know your preferred times within the window provided. If you would like to have your country liaisons also join the call, that is up to your discretion. Please provide a response by COB this Friday or sooner.

Thanks!
Liz

Elizabeth Leasure
Financial Operations Manager
One Health Institute
REDACTED *(cell)*
530-754-9034 (office)
Skype: ealeasure

--
Jonathan H. Epstein DVM, MPH, PhD
Vice President for Science and Outreach
EcoHealth Alliance
460 West 34th Street, Ste. 1701
New York, NY 10001
1.212.380.4467 (direct)
REDACTED (mobile)

web: ecohealthalliance.org
Twitter: @epsteinjon
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:	Andrew Clements <aclements@usaid.gov>
To:	Katherine Leasure <kaleasure@ucdavis.edu>
CC:	PREDICTMGT <predictmgt@usaid.gov>;Predict inbox <predict@ucdavis.edu>;Jonna Mazet <Jkmazet@ucdavis.edu>
Sent:	6/18/2019 10:42:47 AM
Subject:	Re: Change to Approved ITA - P. Daszak (CIV)

Thanks

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: aclements@usaid.gov

On Jun 18, 2019, at 12:28 PM, Katherine Leasure <kaleasure@ucdavis.edu> wrote:

Hi Andrew. I will be responding to Zandra's email directly, but wanted to share an updated ITA reflecting the change to Peter Daszak's CIV travel plans. He will now be traveling from Liberia to CIV on June 21-22. Please let me know if you have any questions. Thanks!

EcoHealth Alliance would like to request travel approval for Peter Daszak to travel from Monrovia, Liberia ~~Newark, NJ~~ to Abidjan, Cotê d'Ivoire from June 21 ~~19~~ to 22, 2019 to meet with country coordinators and the USAID Mission in Abidjan. **From Cote d'Ivoire, he will return to Newark NJ.*

Trip purpose: In Abidjan, Dr. Daszak will meet with all of the PREDICT stakeholders including PREDICT partners, community leaders, and USAID Mission lead Zandra Andre. [$8181.91 airfare **business class required due to medical need*/$344 (Abidjan) max daily per diem].

--
Katherine Leasure
HR/Payroll/Financial Assistant
One Health Institute
530-752-7526

--

PREDICT Sample Disposition Summary as of July 30 2019

The ability of collaborating PREDICT laboratories to securely and appropriately store PREDICT samples beyond 30 September 2019 has been assessed. To date 21 laboratories in 16 countries have solid plans to securely store and appropriately maintain samples. Three laboratories from 3 countries have plans to transfer samples to appropriate secure laboratories before 30 September 2019. Further clarification and work to securely store and appropriately maintain samples beyond 30 September 2019 or to transfer samples to appropriate secure laboratories before 30 September 2019 is in process for 22 laboratories in 13 countries, and we will keep you apprised of that process through regular updates.

A summary is provided below by laboratory grouping and indicating sample numbers stored in each laboratory by taxa group.

I. Laboratories securely and appropriately storing samples beyond 30 September 2019

Bangladesh:
IEDCR: Total samples = 50,867, Human = 10,293, Wildlife = 37,908, Domestic/Livestock = 2,666
ICDDR,b: Total samples = 6,910, all wildlife

Cambodia
IPC: Total samples = 52,647, Human = 14,543, Wildlife = 22,131, Domestic/Livestock = 15,973

China
Wuhan Institute of Virology: Total samples = 11,051, Human = 3,000, Wildlife = 8,051
Institute of Microbiology, CAS: Total samples = 1,202, all wildlife

Indonesia
Eijkman Institute: Total samples = 4,718, all human
Institute Pertanian Bogor - IPB: Total samples = 19,468, all wildlife

Myanmar
LBVD: Total samples = 12,363, Wildlife = 10,761, Domestic/Livestock = 1,602

Thailand
Chulalongkorn University: Total samples = 35,700, Human = 9,269, Wildlife = 24,630, Domestic/Livestock = 1,801

Vietnam
NIHE: Total samples = 8,428, Human = 6,348, Wildlife = 2,080

Côte d'Ivoire
IPCI: Total samples = 7,479, Human = 4,770, Wildlife = 2,709

Egypt
National Research Center: Total samples = 6,750, Human = 1,460, Wildlife = 5,290

Ghana

Noguchi Laboratory: Total samples = 6,526, Human = 6,213, Wildlife = 313
Jordan
Jordan University of Science and Technology: Total samples = 15,148, Human = 7,588, Wildlife = 7,560

Kenya
Institute of Primate Research: Total samples = 12,328, Human = 2,913, Wildlife = 5,817, Camels = 3,598

Nepal
CMDN: Total samples = 25,2170, Human = 12,214, Wildlife = 12,956

Senegal
UCAD: Total samples = 4,484, all human
ISRA: Total samples = 3,742, all wildlife

Tanzania
Ifakara Health Institute: Total samples = 9,226, all human
Humans: 9,226
Sokoine University of Agriculture: Total samples = 23,272, Wildlife = 22,124, Domestic/Livestock = 1,148

Uganda
UVRI: Total samples = 23, 574, Human = 7,888, Wildlife = 14,855, Camels = 831

II. Laboratories transferring samples to appropriate laboratories by 30 September 2019

Ghana
Accra Vet Lab: Total samples = 8,632, all wildlife, to be transferred to Noguchi Laboratory

Guinea
Viral Hemorrhagic Fever Laboratory: Total samples = 15,128, Wildlife = 13,242, Domestic/Livestock = 1,886; Wildlife samples to be transferred to UC Davis, Domestic/Livestock samples to be destroyed

Uganda
Makerere University: Total samples = 2,082, all wildlife; To be transferred to UVRI

III. Receiving clarification or solidifying appropriate plans for samples storage or shipment by 30 September 2019

China
GDCDC: Total samples = 1,266, all human
Yunnan Institute: Unclear if PREDICT samples are stored at this location

Lao PDR
NAHL: Total samples = 11,416, all wildlife
NCLE: Total samples = 1,276, all human

Malaysia
Wildlife Health, Genetic and Forensic Lab, Sabah Wildlife Department, Sabah: Total samples = 22,558, all wildlife
Kota Kinabalu Public Health Lab, Sabah: Total samples = 104, all human
National Public Health Lab, Sungai Buloh: Total samples = 9,804, all human
National Wildlife Forensic Lab, Kuala Lumpur: Total samples = 27,672, Wildlife = 22,328, Domestic/Livestock = 5,344

Mongolia
SCVL: Total samples = 6,000, all wild birds

Myanmar
DMR: Total samples = 6,358, all human

Vietnam
VNUA: Total samples = 2,404, all wildlife
RAHO6: Total samples = 8,632, all wildlife

Cameroon
CRESAR: Total samples = 45,446, Human = 4,890, Wildlife = 40,556

Côte d'Ivoire
LANADA: Total samples = 3,630, all domestic/livestock; Collected by FAO

DRC
INRB: Total samples = 22,148, Human = 2,743, Wildlife = 19,320, Domestic/Livestock = 85
MGVP laboratory in Goma**:** Plan is to transfer samples

Ethiopia
Addis Ababa University: Total samples = 2,123, all wildlife
Ethiopia Public Health Institute: Total samples = 1,805, all human

India
Sanjay Gandhi Institute: Total samples = 728, Human = 625, Wildlife = 103

Liberia
National Public Health Institute: Total samples = 14,484, all wildlife

Republic of Congo
INRB: Total samples = 10,389, all wildlife

Rwanda
Rwanda Agriculture Board Laboratory: Total samples = 11,240, Human = 3,953, Wildlife = 7,287

Sierra Leone
UNIMAK: Total samples = 34,893, Wildlife = 20,835, Domestic/Livestock = 14,058
Domestic/Livestock = 1,148

From:	Evelyn Luciano <luciano@ecohealthalliance.org>
To:	Hannah R Chale <hrchale@ucdavis.edu>
CC:	Alison Andre <andre@ecohealthalliance.org>;Peter Daszak <daszak@ecohealthalliance.org>;Joseph Riccardi <riccardi@ecohealthalliance.org>;predict Sympa List <predict@ucdavis.edu>;Elizabeth Leasure <ealeasure@ucdavis.edu>;Molly Turner <turner@ecohealthalliance.org>;Aleksei Chmura <chmura@ecohealthalliance.org>
Sent:	12/16/2019 6:46:29 AM
Subject:	[predict] Re: A15-0146-S001 Amd 15

Hi Hannah,

I sent a signed amendment on Nov. 26th. Please find attached.

Thanks.

Evelyn

AMENDMENT NO. 15

AGREEMENT NUMBER 201403200-07 / A15-0146-S011

BETWEEN
THE REGENTS OF THE UNIVERSITY OF CALIFORNIA
AND
ECOHEALTH ALLIANCE

This Agreement entered into February 5, 2015 and subsequently amended December 2, 2015, September 29, 2016, December 21, 2016, April 3, 2017, May 1, 2017, January 8, 2018, April 6, 2018, September 28, 2018 October 1, 2018, December 12, 2018, and April 9, 2019, June 27, 2019, August 16, 2019 and Octoboer 8, 2019 constituting a subaward under Contract Number AID-OAA-A-14-00102 **(Prime Agreement)** from USAID **(Prime Sponsor)**, in support of the project entitled "Emerging Pandemic Threats Program 2 PREDICT-2" is hereby amended as set forth below.

The purpose of this amendment is to provide additional funding in the amount of $337,217 for continued activities hereunder. The specific modifications to the Agreement follow:

Article 5 - Allowable Cost, Compensation, Invoices:

Subparagraph A is hereby replaced with the following:

For the performance of work specified herein, University shall pay those expenses, direct and indirect, incurred by Participating Institution in accordance with the attached **Participating Institution Budget**, incorporated herein as Exhibit **C, C-1, C-2, C-3, C-4, C-5, C-6, C-7, C-8, C-9 and C-10.** Allowable reimbursable Project costs shall be those costs incurred in accordance with the detailed Project budget, including its line item categories, as approved by the University for this Project. The maximum allowable costs for this Agreement for the period specified in Article 3 is **Thirty Three Million One Hundred Ninety Thousand Nine Hundred Seventy ($33,190,970) U.S. Dollars**.

Article 28 - Entire Agreement, the following is hereby added to the list of Exhibits:

Exhibit C-10 - Budget Dated November 25, 2019

The Parties agree that all other terms and conditions of the original Agreement Number 201403200-07 shall remain in full force and effect.

THE REGENTS OF THE
UNIVERSITY OF CALIFORNIA

By: _____

Name: Paula Noble

Title: Contracts and Grants Officer

Date: _____

ECOHEALTH ALLIANCE

By: _____

Name: Peter Daszak, PhD

Title: President

Date: November 26, 2019

PREDICT Budget

	Bangladesh	Global
icddr,b Subaward		
Personnel Costs and Benefits	32,445	
Supplies and Materials		
Other Costs	16,752	
Indirect Cost 10%	4,920	
icddr,b TOTAL	**54,117**	
IEDCR Subaward		
Personnel Costs and Benefits	75,319	
Supplies and Materials	1,352	
Other Costs	19,223	
Indirect Cost 10%	9,589	
IEDCR TOTAL	**105,484**	
Ariful Islam (Country Coordinator)		
Personnel Costs and Benefits	21,927	
Supplies and Materials	732	
Other Costs	5,369	
Islam TOTAL	**28,028**	
PREDICT All Country Meeting (Bali)		15,621
EHA Indirect Costs (32%)	*8,969*	*4,999*
TOTAL Costs	**196,597**	**20,620**

EHA PREDICT Budget
November 25, 2019

Exhibit C-10 - Budget Dated November 25, 2019

EHA Global Sept. 2019	
Salaries	29,283
Fringe	10,981
Total Direct Costs	***40,264***
Indirect	*12,884*
Total Global	**53,148**
EHA Admin Mgt Sept. 2019	
Salaries	3,296
Fringe	1,236
Total Direct Costs	***4,532***
Indirect	*1,450*
Total Admin Mgt	**5,983**
Consultants	
Rajesh Bhatia	4,657
Indirect	*1,490*
Total	**6,148**
Ehab Abu-Basha	10,662
Indirect	*3,412*
Total	**14,073**
Subaward	
Society for the Conservation of Nature, Liberia (SCNL)	
Salary and fringe	7,795
Severance	19,393
Services	9,683
Supplies	380
Travel	3,397
Total SCNL	**40,648**
TOTAL COSTS	**120,000**

AMENDMENT #15 TOTAL - $337,217

From: Andrew Clements <aclements@usaid.gov>
To: William B. Karesh <karesh@ecohealthalliance.org>
CC: Peter Daszak <daszak@ecohealthalliance.org>;Jonna Mazet <jkmazet@ucdavis.edu>;Chris Johnson <ckjohnson@ucdavis.edu>;PREDICTMGT <predictmgt@usaid.gov>;Kevin Olival <olival@ecohealthalliance.org>
Sent: 1/21/2020 10:45:22 AM
Subject: Re: nCoV and travel to Africa

Thanks, Billy.

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: aclements@usaid.gov

On Jan 21, 2020, at 7:08 PM, William B. Karesh <karesh@ecohealthalliance.org> wrote:

No scheduled direct flights from Wuhan, but the link to Dubai provides connections across Africa. Peter and Kevin might be able to run the models we have for secondary connections and data on numbers of passengers.

See screen shoots below:

From: Andrew Clements <aclements@usaid.gov>
Sent: Wed, 26 Feb 2020 15:39:14 -0500
Subject: Re: PREDICT International Travel Requests
To: Katherine Leasure <kaleasure@ucdavis.edu>
Cc: PREDICTMGT <predictmgt@usaid.gov>, Predict inbox <predict@ucdavis.edu>, Jonna Mazet <Jkmazet@ucdavis.edu>

Ok. Thanks.
Approved.

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: aclements@usaid.gov

On Feb 26, 2020, at 8:28 PM, Katherine Leasure <kaleasure@ucdavis.edu> wrote:

> Hi Andrew,
>
> Per Metabiota, PREDICT would only be covering the equivalent cost of Karen traveling from home in REDACTED to DC and back; they will not be billing the project for the more expensive cost of travel from RoC. Please let us know if this clarifies, or if you have any further questions.
>
> Thank you,
> Katie
>
> On Tue, Feb 25, 2020 at 3:15 AM Andrew Clements <aclements@usaid.gov> wrote:
>
> > Hi Katie,
> > Both of Tammie's trips are approved.
> >
> > Can I get more information on Karen's travel? Why would Predict pay to bring her back from ROC if, presumably, some other organization paid to send her there and back again.
> >
> > Thanks.
> >
> > *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: aclements@usaid.gov*
> >
> > On Feb 25, 2020, at 1:41 AM, Katherine Leasure <kaleasure@ucdavis.edu> wrote:
> >
> > > *Hi Andrew. Please find below travel requests for your review and approval. Please let me know if you have any questions. Thanks!*
> > >
> > > 1. Saylors (USA): $1400 airfare/$332 (Washington, DC) max daily per diem
> > > 2. O'Rourke (USA): $1200 airfare/$332 (Washington, DC) max daily per diem
> > > 3. O'Rourke (USA): $579 airfare/$198 (Davis) max daily per diem
> > >
> > > Travel Requests –

1. Metabiota would like to request travel approval for Dr. Karen Saylors to travel from Brazzaville, Republic of Congo to Washington, DC, USA from March 15-19, 2020 to participate in PREDICT meetings. From Washington, DC, USA, Dr. Saylors will travel home to REDACTED

Trip purpose: Dr. Saylors will participate in the PREDICT government meetings as well as a PREDICT briefing for the public.

2. Metabiota would like to request travel approval for Tammie O'Rourke to travel from Nanaimo, British Columbia, Canada to Washington, DC, USA from March 16-20, 2020 to participate in PREDICT meetings.

Trip purpose: Ms. O'Rourke will participate in the PREDICT government meetings as well as a PREDICT briefing for the public.

3. Metabiota would like to request travel approval for Tammie O'Rourke to travel from Nanaimo, British Columbia, Canada to Davis, California, USA from March 23-27, 2020 to meet with the UC Davis global team.

Trip purpose: Ms. O'Rourke will meet with the UC Davis PREDICT global team to discuss EIDITH data progress and final submissions to the USAID Data Development Library (DDL).

--
Katherine Leasure
HR/Payroll/Financial Assistant
One Health Institute
530-752-7526

--
Katherine Leasure
HR/Payroll/Financial Assistant
One Health Institute
530-752-7526

From:	Andrew Clements <aclements@usaid.gov>
To:	David J Wolking <djwolking@ucdavis.edu>
CC:	Christine Kreuder Johnson <ckjohnson@ucdavis.edu>;predict@ucdavis.edu <predict@ucdavis.edu>;Tammie O'Rourke <torourke@metabiota.com>
Sent:	3/16/2020 1:13:11 PM
Subject:	Re: [predict] USAID Account

Sounds like a good plan, David. Thanks!

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: aclements@usaid.gov

On Mar 16, 2020, at 8:05 PM, David J Wolking <djwolking@ucdavis.edu> wrote:

Hi Andrew,

Rob Henry requested access to EIDITH database. As of today, only you as AOR have a login to the internal data. As we are still preparing this data to share with USAID's DDL and to publish in an open data publication, I'd recommend we share with Rob the data site for now (data.predict.global) and message that we will talk in-depth about our data and plans for sharing during this week's data meetings.

Please let us know how you'd like us to handle this one.

Thanks in advance,

David

---------- Forwarded message ---------
From: **Tammie O'Rourke** <torourke@metabiota.com>
Date: Mon, Mar 16, 2020 at 8:58 AM
Subject: [predict] USAID Account
To: Predict inbox <Predict@ucdavis.edu>

Hello PREDICT,
R. Henry from USAID has requested a signin to EIDITH, I don't have a first name. His email is rhenry@usaid.gov. Of course we can't give him access, but I'm wondering if I should email him and direct him to the public site? Or do you prefer to do that at your end?
Tammie

--
Tammie O'Rourke
Metabiota
Senior Information Management Developer
Emerging Pandemic Threats - PREDICT Program
tel +1-250-618-2460

From:	Tracey Goldstein <tgoldstein@ucdavis.edu>
To:	director@iedcr.gov.bd <director@iedcr.gov.bd>
CC:	Jonna Mazet <jkmazet@ucdavis.edu>;Woutrina Smith <wasmith@ucdavis.edu>;Peter Daszak <daszak@ecohealthalliance.org>;Jennifer K Lane <jklane@ucdavis.edu>;Vipat Kuruchittham <vipat@seaohun.org>;Ratsuda Poolsuk <ratsuda@seaohun.org>;Marilyn Crane <mcrane@usaid.gov>;onehealthnextgen Sympa List <onehealthnextgen@ucdavis.edu>
Sent:	3/19/2020 10:41:51 AM
Subject:	One Health Workforce-Next Generation Thank you and Invitation to COVID-19 Webinar March 23/24

Dear Director Flora,

We are writing to formally express our sincere gratitude for your support and engagement with our successful USAID One Health Workforce – Next Generation proposal and are pleased to report that initial project work plans have recently been approved by USAID. As we all navigate the unprecedented challenges associated with the COVID-19 pandemic, the importance of an educated and engaged One Health workforce is abundantly clear.

Both the AFROHUN (Africa One Health University Network, formerly OHCEA) and SEAOHUN Southeast Asia One Health University Network) Secretariats, and their university partners, have been hard at work laying the initial foundation and plans, as our teams have all gotten to know each other during our initial startup period. The networks span 15 countries and include nearly 100 universities unified in the mission of transforming the capacity of workforces to prevent, detect, and respond to emerging disease threats of epidemic and pandemic importance. The One Health Workforce – Next Generation (OHW-NG) Consortium global team brings together One Health leaders from institutions worldwide, with core partners including UC Davis, EcoHealth Alliance, Ata Health Strategies, ICAP/Columbia University, UC Berkeley, Project ECHO (University of New Mexico), UC Irvine, and USAID.

Many of our consortium partners, staff, and university network members are on the front lines of the COVID-19 response effort at local, national, and international levels. Our project activities are adapting and responding to meet emergency needs, and on March 23 and March 24, AFROHUN and SEAOHUN and the OHW-NG global team are hosting two online educational platforms (webinars) for network members, partners, and other stakeholders on the One Health approach to COVID-19 with current updates. All are welcome to join, and feel free to circulate the webinar invitation within your professional network. We fully anticipate additional activities oriented around the COVID-19 response effort and most importantly, how to work together to prevent pandemics like this from ever happening again.

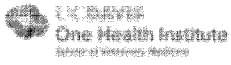
We look forward to engaging with you on AFROHUN and SEAOHUN initiatives and activities. If you have any ideas or suggestions regarding engagement or questions or concerns, please do not hesitate to reach out.

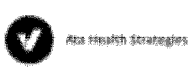
Your partnership liaison contacts are:

Dr. Jonna Mazet Executive Director, One Health Institute. University of California, Davis, jkmazet@ucdavis.edu & Dr. Jennifer Lane, One Health Institute, University of California, Davis, jklane@ucdavis.edu

Kind regards,

The One Health Workforce-Next Generation Consortium





Special One Health COVID-19 Response ECHO Session
For SEAOHUN Members

USA: Monday, March 23, 2020, and
SE Asia: Tuesday, March 24, 2020

US time:
7:00 pm - 8:30 pm MT
9:00 pm - 10:30 pm ET
6:00 pm - 7:30 pm PT

SE Asia time:
8:00 am - 9:30 am ICT
9:00 am - 10:30 am MYT
9:00 am - 10:30 am PHT

- **AGENDA**
  - Introductions – [SEAOHUN Secretariat; Jonna Mazet, DVM, MPVM, Ph.D.- UC Davis]
  - COVID-19 **Global Epidemiology** - [Minesh Shah, MD, MPH - Africa Regional Lead, International Task Force, CDC COVID-19 Response]
  - COVID-19 **Laboratory Diagnostics** - [Christina Scheel, Ph.D. - Laboratory Advisor, International Task Force, CDC COVID-19 Response]
  - COVID-19 **Infection Control and Prevention** - [Katie Wilson, MPH - Infection Prevention and Control Deputy Lead, International Task Force, CDC COVID-19 Response]
  - COVID-19 **One Health Perspective** - [Brian Bird, DVM, MSPH, Ph.D. - UC Davis]
  - Q&A
- **FACILITATORS**
  - Woutrina Smith, DVM, MPVM, Ph.D. - UC Davis
  - Bruce Struminger, MD, MA - ECHO Institute, UNM

Agenda (English)
Save the date (English)

WHO Coronavirus disease (COVID-2019) situation reports:
https://www.who.int/emergencies/diseases/novel-coronavirus-2019/situation-reports

For Connection Information, please click here

Participation Attestation and Access to the Powerpoint Presentations:

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Download the app to your phone for Android

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Detailed PDA-Partner App Instructions

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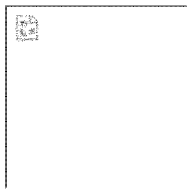
Zoom Instructions and ECHO Etiquette (English)

This session may be recorded. By joining you consent to being recorded.



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ECHO Resources

Project ECHO in 90 seconds - Video

Project ECHO One-Pager - Our Story and Model

For help with connecting, please call (505) 750-4897 or email *echoit@salud.unm.edu*

HIPAA Compliance:

All patient information will be de-identified for presentation during clinic. To ensure HIPAA compliance during patient presentations, please identify your patient(s) only by their ECHO ID.

Please direct any additional questions or concerns to

ECHOonehealth@salud.unm.edu

ECHO is a movement to demonopolize knowledge and amplify the capacity to provide best practice care for underserved people all over the

world.

In order to support the growth of the ECHO movement, Project ECHO collects participation data for each teleECHO™ program. This data allows Project ECHO to measure, analyze, and report on the movement's reach. It is used in reports, on maps and visualizations, for research, for communications and surveys, for data quality assurance activities, and for decision making related to new initiatives.

--

Sent: Wed, 27 May 2020 18:01:24 -0700
Subject: Re: Summary of Predict successes
From: Jonna Mazet <jkmazet@ucdavis.edu>
To: Bennie Irve Osburn <biosburn@ucdavis.edu>
Cc: "Alan Kelly (kellya@vet.upenn.edu)" <kellya@vet.upenn.edu>
PREDICT_4pager_COVID.pdf

Hi Bennie & Alan,
Would the attached document work for your purposes?
Thanks again for thinking of the project & let me know if you would like me to flesh anything out.
Also info from our website below.
Have a nice evening,
Jonna

PREDICT, a project of USAID's Emerging Pandemic Threats (EPT) program, was initiated in 2009 to strengthen global capacity for detection of viruses with pandemic potential that can move between animals and people. PREDICT has made significant contributions to strengthening global surveillance and laboratory diagnostic capabilities for both known and newly discovered viruses within several important virus groups, such as filoviruses (including ebolaviruses), influenza viruses, paramyxoviruses, and coronaviruses.

PREDICT activities supported emerging pandemic threats preparedness and the Global Health Security Agenda, primarily in Africa and Asia. A decade later, more than 30 countries around the world have stronger systems to safely detect, identify, prevent and respond to viral threats. PREDICT initiated One Health Surveillance, a transdisciplinary collaborative approach to understanding infectious disease risk at the animal-human interface. The PREDICT-trained workforce, including zoonotic disease specialists and laboratory scientists at more than 60 national, university and partner laboratories, is one of the best response resources to assist with safe and secure detection and response to COVID-19 and other emerging biological threats.

On April 1, 2020, PREDICT was granted a 6-month extension to assist with COVID-19 response efforts, and is providing technical and logistical support to our implementing partners around the world.

Life of Project Highlights:

- >6,800 people trained for the One Health Workforce in over 30 countries
- >164,000 animals and people safely sampled and tested for zoonotic disease threats
- >60 laboratory systems enhanced with biosecure zoonotic disease detection capabilities
- 949 novel viruses detected, including Bombali ebolavirus, Zaire ebolavirus, Marburg virus, and MERS- and SARS-related coronaviruses
- 217 known viruses detected

PREDICT established best practices in One Health surveillance and biosecurity, to identify viruses with the potential to spillover from animals into people and help prepare the world for more rapid detection in future epidemics and pandemics. PREDICT works in full compliance with US federal and international regulations and we have set the standard in optimizing collaborative transdisciplinary work needed for early detection of viral threats where these are most likely to emerge. Through our network of global and host country partners, our work adheres to national and international ethical, legal, and regulatory requirements and we go beyond these obligations to strive for optimal practices in transparency, cooperation, biosafety, and information sharing.

PREDICT is led by the UC Davis One Health Institute, and core partners include USAID, EcoHealth Alliance, Metabiota, Wildlife Conservation Society, and Smithsonian Institution. Contact us at predict@ucdavis.edu.

On Thu, May 21, 2020 at 8:04 PM Jonna Mazet <jkmazet@ucdavis.edu> wrote:

> Hi Bennie,
> I'll look for something & try to get it to you soon.
> Sorry for the delay,
> Jonna

On Thu, May 14, 2020 at 6:52 AM Bennie Irve Osburn <biosburn@ucdavis.edu> wrote:

Hi Jonna,

Alan Kelly and I are in the process of writing a summary of some of the real success stories led by veterinarians in hopes that future entrepreneur's may garner ideas for their careers. We would like to capture what you have done by leading the Predict program. Ideally, a paragraph, possibly something that you have included in a grant application that could serve as a summary of your major accomplishments with that program would be appreciated.

Thanking you for your assistance with this request,

Bennie

Bennie I. Osburn, Dean Emeritus
Western Institute for Food Safety & Security
School of Veterinary Medicine
University of California, Davis
1477 Drew Ave. Suite 101
Davis, CA 95618

Office (530) 757-5760

Cell REDACTED

biosburn@ucdavis.edu

USAID
FROM THE AMERICAN PEOPLE

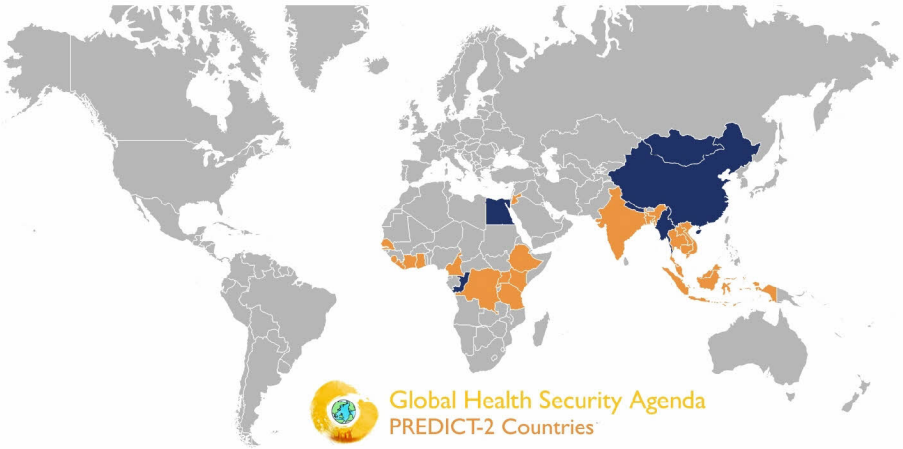
PREDICT

PANDEMIC PREPAREDNESS FOR GLOBAL HEALTH SECURITY

PREDICT was initiated in 2009 to strengthen global capacity for detection and discovery of viruses with pandemic potential that can move between animals and people, including filoviruses, such as ebolaviruses; influenza viruses; paramyxoviruses, such as Nipah virus; and coronaviruses, the family to which SARS CoV-2 belongs, the virus responsible for the COVID-19 pandemic.

PREDICT activities supported emerging pandemic threats preparedness and the global health security agenda, primarily in Africa and Asia. A decade later, more than 30 countries around the world have stronger systems to detect, identify, prevent and respond to viral threats, both known and novel. The PREDICT-trained workforce, including field, data and technicians at more than 60 national, university and partner laboratories, is one of the best response resources to assist with detection and response to COVID-19 and other emerging viruses.

WHERE WE WORK



HIGHLIGHTS

6.8K
people trained for the One Health Workforce in over 30 countries

164K
animals and people sampled to minimize spillover of zoonotic disease threats

>60
laboratory systems enhanced with zoonotic disease detection capabilities

949
novel viruses detected, including Bombali ebolavirus, Zaire ebolavirus, Marburg virus, and MERS- and SARS-like coronaviruses

217
known viruses detected

PREDICT COVID OUTBREAK RESPONSE ACTIVITIES

PREDICT has been actively supporting partners in the US and around the world by providing technical assistance and outbreak response support for the latest emergence of Disease X, COVID-19.

EARLY DETECTION

Helped raise the flag that coronaviruses have pandemic potential by providing critical data on the group of coronaviruses to which SARS-CoV-2 belongs, through collaborations with the PREDICT/China team and with National Insitutes of Health (NIH).

ONGOING SUPPORT

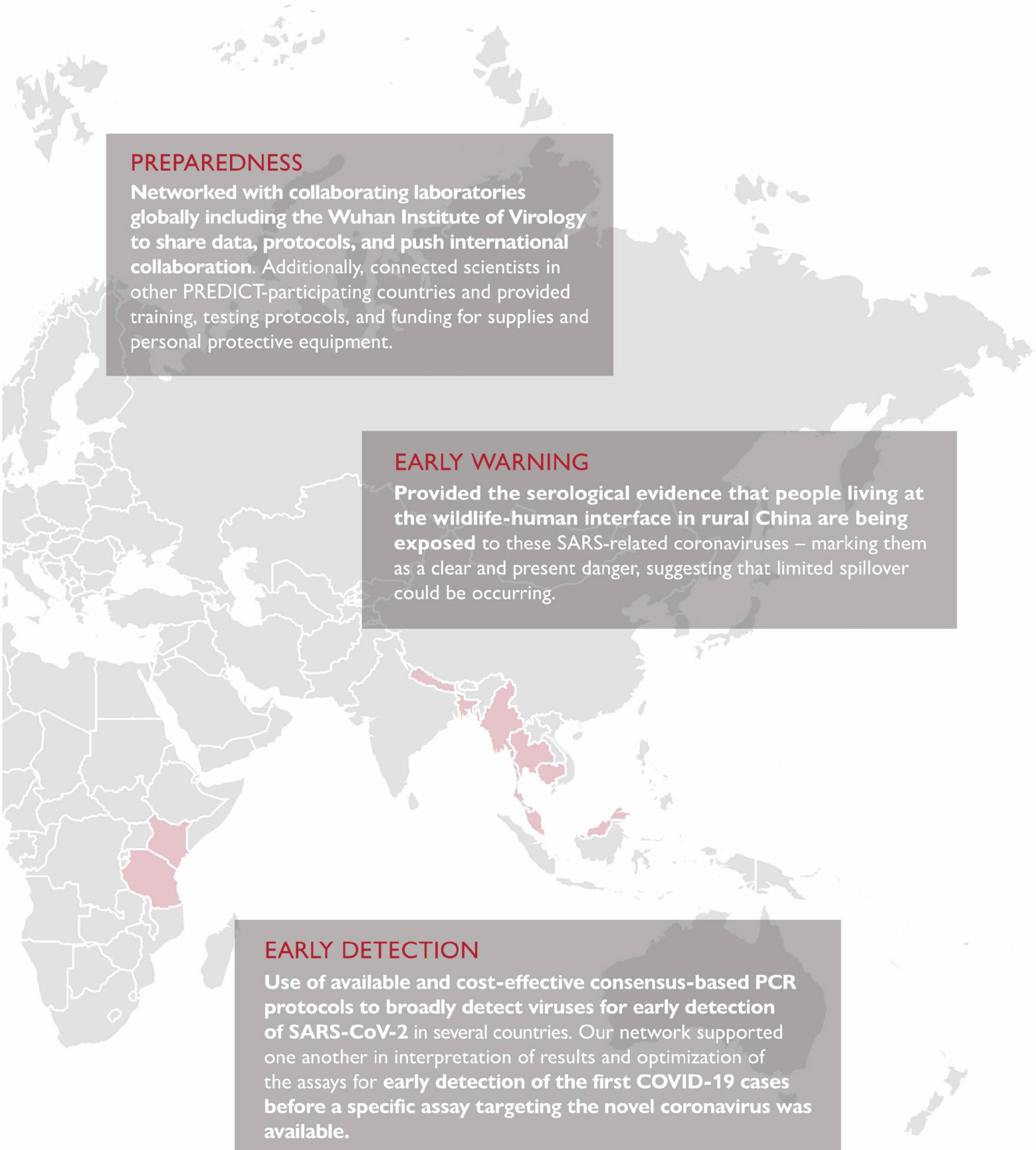
Global preparedness and response: providing technical assistance and testing support for early identification of cases as well as readiness for other emerging viruses.

Assisting in coronavirus detection and **supporting government evaluations of potential cases** throughout Asia, the Middle East and Africa.

USAID FROM THE AMERICAN PEOPLE

UCDAVIS VETERINARY MEDICINE One Health Institute

WCS



PREPAREDNESS

Networked with collaborating laboratories globally including the Wuhan Institute of Virology to share data, protocols, and push international collaboration. Additionally, connected scientists in other PREDICT-participating countries and provided training, testing protocols, and funding for supplies and personal protective equipment.

EARLY WARNING

Provided the serological evidence that people living at the wildlife-human interface in rural China are being exposed to these SARS-related coronaviruses – marking them as a clear and present danger, suggesting that limited spillover could be occurring.

EARLY DETECTION

Use of available and cost-effective consensus-based PCR protocols to broadly detect viruses for early detection of SARS-CoV-2 in several countries. Our network supported one another in interpretation of results and optimization of the assays for **early detection of the first COVID-19 cases before a specific assay targeting the novel coronavirus was available.**

EcoHealth Alliance METABIOTA™ Smithsonian Institution

PREDICT HIGHLIGHTS

The following highlights are available online alongside other digital stories and findings at **p2.predict.global**. For quick access to the digital stories, scan the QR code with your cell phone camera.

PREDICT scientists were the first to discover a new ebolavirus species in a host prior to detection in an infected human or sick animal.

The discovery of the Bombali virus in bats in Sierra Leone and the sequencing of the complete genome was officially published in the journal *Nature Microbiology* in August 2018. The PREDICT team sampled more than 6,000 animals in Sierra Leone and performed laboratory tests to look for both known and unknown ebolaviruses.

In the Southeast Asia region, the wildlife value chain has been identified as the source of multiple zoonotic disease outbreaks, including Severe Acute Respiratory Syndrome (SARS) in 2002 and more recently Coronavirus Disease 2019 (COVID-19), which is suspected to have emerged from a mixed animal market in Wuhan, China.

Recognizing the threat these markets pose to both conservation and health, PREDICT has been conducting surveillance and investigating risks of virus emergence in markets since 2009.

Collaborative studies by the Centers for Disease Control and Prevention, Njala University, USAID PREDICT, and the University of Makeni detected Marburg virus in fruit bats in Sierra Leone in 2018, marking the first time the deadly virus had been found in West Africa.

PREDICT scientists worked with Sierra Leone government colleagues to inform people across the country as fast as possible of the new health risk and remind people not to harm or come in contact with bats.

Follow us on Twitter **@PREDICTproject**
Contact: **predict@ucdavis.edu**

From: Nicole Litschgi <REDACTED>
To: "jkmazet@ucdavis.edu" <jkmazet@ucdavis.edu>, "aclements@usaid.gov" <aclements@usaid.gov>
Cc: "karesh@ecohealthalliance.org" <karesh@ecohealthalliance.org>
Subject: Operationalising One Health on the ground
Sent: Tue, 10 Jan 2017 15:13:52 +0000

Dear Jonna, dear Andrew

We are a Swiss based NGO active in Ethiopia, Somalia, Kenya, South Sudan, Mali and Togo, working on rural development, resilience building, health (one health) and capacity building of local communities and institutions. http://vsf-suisse.org/vsf/web/en/ In South Sudan and Somalia, we regularly receive USAID/OFDA funding. We appreciated the partnership with USAID/OFDA so far, especially the openness to new ideas and the common discussions leading up to a new project.

Today I'm writing you, because we want to strengthen our engagement in the field of 'One Health'. To begin with, we want to focus on Ethiopia (and Somalia), targeting the Somali community and on Mali. In both countries we work with pastoral communities, characterized by their close relationship to the animals and the environment. We often work in remote areas where public services hardly reach the communities and where it would make a lot of sense to put the scarce resources together in order to improve the human and animal health status and to preserve the environment. A One Health approach would be indicated to strengthen disease awareness and diagnostics, to prevent zoonotic diseases, to strengthen surveillance, to improve service delivery etc. We know that USAID *preparation and response* have recently (Oct/Nov 2016) supported the set-up of a One Health Platform in Mali. We have recently undertaken a study on the access to human and animal health services for pastoralists and their livestock in the Somali Region of Ethiopia. We wonder, how we could get in a partnership with USAID on the issue of One Health, maybe in the framework of the *PREDICT 2*, the *One Health Workforce* or the *preparation and response* project. In both countries (Ethiopia and Mali) we have well established and long term relationships with national and international research institutions:

- Swiss Tropical and Public Health Institution in Basel, Switzerland http://www.swisstph.ch/
- Jigjiga University in Somali Regional State of Ethiopia http://www.jju.edu.et/
- Centre Suisse de Recherche Scientifique in Abidjan, Ivory Coast http://www.csrs.ch/
- Central Veterinary Laboratory in Bamako, Mali

Together with these partners we could work at the crossroads of research and implementation of One Health approaches.

We are furthermore member of the VSF-International network. http://vsf-international.org/ The network members implement altogether more than 200 projects in 38 countries in Africa, Asia and Latin America. One Health is one of our key topic and other member organizations could equally be interested in a partnership with USAID.

The different VSF organizations from their mandate "Healthy people, healthy animals, healthy environment" but also from their strong presence on the ground in many remote areas, where diseases are often difficult to control, could be an interesting partner for USAID.

I am very grateful for any hint on who I would have to contact to discuss the issue further.
Kind regards,

Nicole Litschgi
Director of Programmes

VÉTÉRINAIRES SANS FRONTIÈRES SUISSE

Vétérinaires Sans Frontières Suisse

REDACTED

Usually in the office from Monday to Thursday.

From: Alisa Pereira <apereira@usaid.gov>
To: Tracey Goldstein <tgoldstein@ucdavis.edu>
CC: Jonna Mazet <jkmazet@ucdavis.edu>;djwolking@ucdavis.edu <djwolking@ucdavis.edu>;Elizabeth Leasure <ealeasure@ucdavis.edu>;Andrew (GH/HIDN) Clements <AClements@usaid.gov>;Shana Gillette <sgillette@usaid.gov>;cchrisman@usaid.gov <cchrisman@usaid.gov>;Christine Kreuder Johnson <ckjohnson@ucdavis.edu>
Sent: 1/26/2017 1:53:13 PM
Subject: Re: Thoughts going into today's mtg

And that should say prep work not Oreo! Auto correct gets me every time!

Sent from my iPhone

On Jan 26, 2017, at 4:52 PM, Tracey Goldstein <tgoldstein@ucdavis.edu> wrote:

I think it was too! On the lab side also :)

On Thu, Jan 26, 2017 at 1:41 PM, Alisa Pereira <apereira@usaid.gov> wrote:
I think today was a huge win for us! Thank you to all of you for the
Oreo work and the hours of participation!!!!

Liz, sorry I had to scoot out early, but I was on the phone after so
could "hear" or mostly hear everything.

Shew!

Sent from my iPhone

> On Jan 26, 2017, at 8:14 AM, Alisa Pereira <apereira@usaid.gov> wrote:
>
> Hi Team Predict!
>
> I have been mentally preparing for this meeting today, and have the
> following thoughts:
>
> 1) let's stick to the intent of the mtg -- define the capacity levels
>
> 2) no changes of any kind to your cooperative agreement are official
> without agreement and written direction from your AOR.
>
> 3) Jonna has agreed to meet with Richard to explain how Predict is
> GHSA. All discussion about changing, modifying, or adding activities
> will be "considered," but only after jonna's meeting with Richard and
> the USAID predict mgt team.
>
> 4) don't take the bait (i am saying this for myself). We can note
> requested tweaks and punt until the appropriate discussions take
> place.
>
> Go team!
>
> I will be physically in the room beginning at 9:30. We will figure

> out how to get you all connected through the various breakout
> sessions.
>
>
> Sent from my iPhone

--

(530) 752-0412
(530) 752-3318
tgoldstein@ucdavis.edu

From: Elizabeth Leasure <ealeasure@ucdavis.edu>
To: Ryland Marbray <rmarbray@usaid.gov>
Cc: Alisa Pereira <apereira@usaid.gov>, Andrew Clements <aclements@usaid.gov>, Shana Gillette <sgillette@usaid.gov>, Jonna Mazet <jkmazet@ucdavis.edu>, David John Wolking <djwolking@ucdavis.edu>
Subject: RE: Key Personal Letter approval
Sent: Wed, 1 Feb 2017 22:41:56 +0000

Thank you, Ryland. I'm actually not the AOR, so I think the letter you sent will need to be corrected to reflect either Andrew Clements or Shana Gillette in that role.

Alisa, can you please advise Ryland who to name as AOR in this letter?

Thanks,
Liz

Elizabeth Leasure
One Health Institute
University of California, Davis
530-754-9034 (office)
REDACTED (cell)

From: Ryland Marbray [mailto:rmarbray@usaid.gov]
Sent: Wednesday, February 01, 2017 2:37 PM
To: Elizabeth Leasure
Cc: Alisa Pereira; Andrew Clements
Subject: Key Personal Letter approval

Hi Elizabeth

Please find attach the letter approval concerning the above subject line.

Best Regards,

Ryland Marbray
Agreements/Contracting Officer

From: Elizabeth Leasure <ealeasure@ucdavis.edu>
To: Jonna Mazet <jkmazet@ucdavis.edu>, David John Wolking <djwolking@ucdavis.edu>
Subject: FW: Key Personal Letter approval
Sent: Wed, 1 Feb 2017 22:52:42 +0000
Key Personal Approval Dr. Leilani Francisco.pdf

FYI-
He named me as AOR, so a corrected letter is needed.

Elizabeth Leasure
One Health Institute
University of California, Davis
530-754-9034 (office)
REDACTED (cell)

From: Ryland Marbray [mailto:rmarbray@usaid.gov]
Sent: Wednesday, February 01, 2017 2:37 PM
To: Elizabeth Leasure
Cc: Alisa Pereira; Andrew Clements
Subject: Key Personal Letter approval

Hi Elizabeth

Please find attach the letter approval concerning the above subject line.

Best Regards,

Ryland Marbray
Agreements/Contracting Officer

USAID
FROM THE AMERICAN PEOPLE

February 1, 2017

Dr. Armine Arustamyan
Chief Financial Officer
EcoHealth Alliance
460 West 34th Street 17th Floor
New York, NY 10001-2320

Subject: USAID Cooperative Agreement AID-OAA-A-14-00102, PREDICT-2 Request for Agreement Officer's Key Personnel approval of Dr. Leilani Francisco as Senior Behavioral Risk Coordinator.

Ref: Dr. Armine Arustamyan letter dated January 4, 2017, plus supporting documents

Dear Dr. Armine Arustamyan:

After concurrence of the Agreement Officer's Representative (AOR), Elizabeth Leasure, and after review of the information provided in the referenced email and the provisions of the basic agreement, Agreement Officer's approval is hereby granted as shown below:

- Dr. Leilani Francisco, as Senior Behavioral Risk Coordinator at an annual salary of $156,000.

This approval is granted with the understanding that (i) there are sufficient funds available in the budget (ii) there will be no increase in the total estimated cost of the agreement, and (iii) additional funds will not be required. All other terms and conditions of the Agreement remain unchanged an in full force and effect.

If there are any questions regarding this approval, please contact me.

Sincerely,

Ryland Marbray
Agreement Officer

cc: Janet Phillips, AOR

Sent: Fri, 03 Feb 2017 08:13:49 -0800
Subject: Re: [predict] [predict-outbreak] Bangladesh outbreak update: Feb 2nd
From: Brian Bird <bhbird@ucdavis.edu>
To: Peter Daszak <daszak@ecohealthalliance.org>, Jonna Mazet <jkmazet@ucdavis.edu>, Jon Epstein <epstein@ecohealthalliance.org>
Cc: "predict-outbreak@ucdavis.edu" <predict-outbreak@ucdavis.edu>, "Dr. Melinda Rostal" <rostal@ecohealthalliance.org>, Emily Hagan <hagan@ecohealthalliance.org>, "William B. Karesh" <karesh@ecohealthalliance.org>, Ariful Islam <arif@ecohealthalliance.org>

Hi folks,
Since Jonna (and probably several of you) are enroute to China, I'm filling in on these for the next few days. We'll hold with this strategy unless we hear back from Alisa that the mission still wants a daily "no update" update.

Certainly, if something substantive comes up please put it in a new report to predict-outbreak@ucdavis.edu and I'll get it edited and forwarded on to appropriate people on the predictMGT team.

-Brian

From: <predict-outbreak-request@ucdavis.edu> on behalf of Peter Daszak <daszak@ecohealthalliance.org>
Date: Thursday, February 2, 2017 at 8:48 PM
To: Jonna Mazet <jkmazet@ucdavis.edu>, Jon Epstein <epstein@ecohealthalliance.org>
Cc: "predict-outbreak@ucdavis.edu" <predict-outbreak@ucdavis.edu>, "Dr. Melinda Rostal" <rostal@ecohealthalliance.org>, Emily Hagan <hagan@ecohealthalliance.org>, "William B. Karesh, D.V.M" <karesh@ecohealthalliance.org>, Ariful Islam <arif@ecohealthalliance.org>
Subject: RE: [predict] [predict-outbreak] Bangladesh outbreak update: Feb 2nd

Are you sure about that – what if there is nothing to report, and we don't report to the mission, but then P&R pass on some other public information – it'll get confusing. I thought it would be good to just continue to give them daily updates, incl. 'no change today' – at least it shows them we're on the case?

Cheers,

Peter

Peter Daszak
President

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

+1.212.380.4473 (direct)
+1.212.380.4465 (fax)
www.ecohealthalliance.org

From: [redacted] **On Behalf Of** Jonna Mazet
Sent: Thursday, February 2, 2017 6:51 PM
To: Jon Epstein

Cc: predict-outbreak@ucdavis.edu; Dr. Melinda Rostal; Emily Hagan; Peter Daszak; William B. Karesh; Ariful Islam
Subject: Re: [predict] [predict-outbreak] Bangladesh outbreak update: Feb 2nd

Executive decision from me -- please provide next update only when new substantive information to add is available for the update (e.g. meeting with Mission or government, lab results communicated, behavioral data analysis completed, etc.).
Thanks,
J

On Thu, Feb 2, 2017 at 11:47 AM, Jon Epstein <epstein@ecohealthalliance.org> wrote:
Jonna,
Attached is the Feb 2 update for Dhaka. We noticed that the total #crows sampled listed in the Feb 1 report had an error (listed as 148, instead of 140). Sorry about that, but today's total is correct.

We've finished sample collection in Dhaka, but some labwork and behavioral analyses are still pending. Once we complete these, our engagement will be completed. I'm not sure if this still warrants daily updating, but let us know what USAID would like at this point.

Cheers,
Jon

--

Jonathan H. Epstein DVM, MPH

Vice President for Science and Outreach

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

1.212.380.4467 (direct)
REDACTED (mobile)

web: ecohealthalliance.org

Twitter: @epsteinjon

From: Katherine Leasure <kaleasure@ucdavis.edu>
To: 'Andrew Clements' <aclements@usaid.gov>;'Jonna Mazet' <jkmazet@ucdavis.edu>
CC: 'PREDICTMGT' <predictmgt@usaid.gov>;predict@ucdavis.edu <predict@ucdavis.edu>
Sent: 4/4/2017 4:22:44 PM
Subject: RE: PREDICT International Travel Requests

Hi Andrew,

Liz had advised that the process for Smithsonian/Kenya travel was AOR approval, followed by Mission concurrence, then eCC submission. Is this an overall process change, or case-specific given that this is rescheduled from a previously approved ITA? I just want to make sure we're clear for this and future travel.

Thank you,
Katie

From: Andrew Clements [mailto:aclements@usaid.gov]
Sent: Friday, March 31, 2017 4:33 AM
To: Jonna Mazet
Cc: Katherine Leasure; PREDICTMGT; David J Wolking
Subject: Re: PREDICT International Travel Requests

Hi Katie,

Mazet/New Zealand travel approved.

Mazet/India travel approved subject to mission concurrence.

Kenya travel: based on the last email exchange I saw between Dawn and Lisa Kramer, Dawn notified Lisa that there was a delay,but had not submitted new dates so as far as I can tell Lisa has not provided the required pre-approval for this travel. Please have Dawn get the pre-approval from Lisa. Once that happens, you will automatically have my approval (no need to re-submit the request to me).

Andrew

On Fri, Mar 31, 2017 at 4:03 AM, Jonna Mazet <jkmazet@ucdavis.edu> wrote:
They may want the name of the conference. In case they do, it's: **3rd International Conference on Animal Health Surveillance**
Thanks,
J

On Thu, Mar 30, 2017 at 4:59 PM, Katherine Leasure <kaleasure@ucdavis.edu> wrote:
Please find below international travel requests for your review and approval. Please let me know if you have any questions. Thanks!!

1. Zimmerman (Kenya): $1,500 airfare/$410 (Nairobi) max daily per diem

2. Mazet (India, New Zealand): $12,000 airfare (*business class required due to medical need)*/ $474 (Bangalore), $400 (Delhi) $259 (Rotorua) max daily per diems

Travel Requests:

1. The Smithsonian Institution would like to request travel approval for Dr. Dawn Zimmerman to travel

from Washington, DC, USA to Nairobi, Kenya for the period April 23 to May 5, 2017 to help with sample collection and meet with partners. **Revised ITA for postponed travel; previously submitted February 10 for travel to Kenya March 17 to April 3, 2017.*

Trip purpose: Dr. Zimmerman will participate in an animal sampling trip in Turkana, as well as attend meetings with partners, including: International Livestock Research Institute, Department of Veterinary Services, Kenya Wildlife Service, Insect Physiology and Ecology (ICIPE), Mpala Ranch, and the Institute of Primate Research.

2. UC Davis would like to request travel approval for Dr. Jonna Mazet to travel from Davis, California, USA to Bangalore and Delhi, India from April 24 to May 1, 2017 to meet with PREDICT project partners and discuss ongoing and future project strategies. From Delhi, India, she will travel to Rotorua, New Zealand from May 2-5, 2017 to serve as keynote speaker at the 2017 International Conference on Animal Health Surveillance.

Trip purpose: India – Dr. Mazet will travel to India in order to meet with PREDICT partners to discuss ongoing activities in country, as well as coordinate the implementation of future sampling, surveillance, and diagnostic strategies. New Zealand – Dr. Mazet will serve as keynote speaker, with her talk on "Moving from a reactive to preventive paradigm for infectious disease surveillance." **Airfare cost for travel to India will be split with other UC Davis funds, as part of Dr. Mazet's travel will be related to a smaller research project. A travel allowance from conference organizers will cover a portion of the travel costs associated with Dr. Mazet's travel to New Zealand.*

Katherine Leasure
HR/Payroll/Financial Assistant
One Health Institute
University of California, Davis
530-752-7526
530-752-3318 FAX
kaleasure@ucdavis.edu

--

Andrew Clements, Ph.D.
Senior Scientific Adviser
Emerging Threats Division/Office of Infectious Diseases/Bureau for Global Health
U.S. Agency for International Development
Mobile phone: 1-571-345-4253
E-mail: aclements@usaid.gov

For more information on USAID's Emerging Pandemic Threats program, see: http://www.usaid.gov/ept2

From: Jonna Mazet <jkmazet@ucdavis.edu>
To: sheydari@usaid.gov <sheydari@usaid.gov>
CC: Katherine Leasure <kaleasure@ucdavis.edu>;Jon Epstein <epstein@ecohealthalliance.org>;predict@ucdavis.edu <predict@ucdavis.edu>;PREDICTMGT <predictmgt@usaid.gov>
Sent: 4/18/2017 2:52:42 PM
Subject: Re: FW: PREDICT International Travel Requests

Dear Sara,
Sorry to bother you -- just double checking on the hotel recommendation and confirmation on the May 1 meeting in order to finalize arrangements (see below).
If we don't hear from you, we'll make a reservation tomorrow.
Looking forward to being with you,
Jonna

On Fri, Apr 14, 2017 at 3:15 PM, Jonna Mazet <jkmazet@ucdavis.edu> wrote:
Dear Sara,
Thank you for your concurrence on my travel to meet with our (Predict's) India team. I also look very much forward to meeting with you at the mission on Monday, May 1st. What time do you normally start your work day there? Would it be possible to get on your calendars early, as I have an international flight that departs at 1:15 pm?
If appropriate from your end, I would like to bring Rajesh Bhatia and Debapriyo "Debo" Chakraborty with me to our meeting. I believe you are acquainted with both of them.

Please let me know if you would like any other information in advance and if you would like a formal presentation or a more casual out-brief.

Also a small request for a recommendation: can you suggest the most convenient hotel to the mission? We have identified the Shangri-La's Eros Hotel and The Claridges, but I wonder if you can endorse one of these or give us a better suggestion.

Thank you again and looking forward to being with you,
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. Liz Chase

eschase@ucdavis.edu

+1-530-752-3630

From: Sara Heydari [mailto:sheydari@usaid.gov]
Sent: Thursday, April 06, 2017 7:41 PM
To: Cassandra Louis Duthil
Cc: Daniel Schar; Damrongwatanapokin, Sudarat (RDMA/OPH); Angela Wang; Andrew Clements; Alisa Pereira; Katie Leasure; Elizabeth Leasure; David John Wolking; Xerses Sidhwa; Marietou Satin
Subject: Re: PREDICT International Travel Requests

Hi Casandra and Katie-

Thank you for providing more information on the scope of Dr. Mazets visit to India. We would be interested in an out-brief at the mission on Monday May 1st.

Thanks,

Sara

Sent: Mon, 22 May 2017 17:26:24 -0700
Subject: Re: [predict] [predict-outbreak] Ebola Virus Disease Outbreak in the Bas-Uele province -update
From: Jonna Mazet <jkmazet@ucdavis.edu>
To: Sarah Paige <spaige@usaid.gov>, Angela Wang <awang@usaid.gov>, PREDICTMGT <predictmgt@usaid.gov>
Cc: PREDICT-outbreak <predict-outbreak@ucdavis.edu>

Thanks for your inquiry -- once again, this effort is not a Predict activity, so we don't have the details -- information from the meetings is provided for your notification, but we don't necessarily have the details that would be available from your in-country contacts. We will clarify in further updates that certain sections are informational items. If our personnel have any additional information, I will send on to you.
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Senior Infectious Disease Advisor
USAID Africa Bureau/Health Division
Desk: +1-202-712-1814
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Angela Wang, MSPH
Public Health Advisor
Emerging Threats Division, Office of Infectious Disease
USAID/Washington, Bureau for Global Health
Phone: 202-712-1070 (O) | REDACTED
Email: awang@usaid.gov

From: "William B. Karesh" <karesh@ecohealthalliance.org>
To: Jonna Mazet <jkmazet@ucdavis.edu>
Subject: Re: [predict] [predict-outbreak] Ebola Virus Disease Outbreak in the Bas-Uele province -update
Sent: Tue, 23 May 2017 07:09:29 +0000

Oye, I guess we're the only ones keeping her informed.

Sent from my iPhone

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Public Health Advisor
Emerging Threats Division, Office of Infectious Disease
USAID/Washington, Bureau for Global Health
Phone: 202-712-1070 (O) | REDACTED
Email: awang@usaid.gov

From: Andrew Clements <aclements@usaid.gov>
Sent: Tue, 23 May 2017 09:15:43 +0200
Subject: Fwd: [predict] [predict-outbreak] Ebola Virus Disease Outbreak in the Bas-Uele province -update
To: Jonna Mazet <jkmazet@ucdavis.edu>

Hi Jonna,

Sorry about that. It's not uncommon for this to happen during outbreaks because more people are involved and sometimes they start reaching out directly to projects because of the real or perceived urgency with gathering information.

See below for a note I sent back to Sarah and others. If you think it would be helpful, I can ask them to send all questions through me and I can filter out the unnecessary ones.

Andrew P. Clements, Ph.D.
Senior Scientific Adviser
Emerging Threats Division/Office of Infectious Diseases/Bureau for Global Health
U.S. Agency for International Development
Mobile phone: 1-571-345-4253
Email: aclements@usaid.gov

Begin forwarded message:

> **From:** Andrew Clements <aclements@usaid.gov>
> **Date:** May 23, 2017 at 9:10:39 AM GMT+2
> **To:** Sarah Paige <spaige@usaid.gov>, Angela Wang <awang@usaid.gov>
> **Cc:** PREDICTMGT <predictmgt@usaid.gov>
> **Subject: Re: [predict] [predict-outbreak] Ebola Virus Disease Outbreak in the Bas-Uele province -update**
>
> I know there is a desire to get all the latest information available for outbreaks and that there are always a lot of questions, but for the sake of not bogging down our partners, let's try to keep our questions focused on activities related to how our partners are contributing. The partners efforts with the outbreaks (sometimes many at the same time) are in addition to their daily work in up to 30 countries so they only have a finite amount of time available to get work done.

Thanks.

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Angela Wang, MSPH
Public Health Advisor
Emerging Threats Division, Office of Infectious Disease
USAID/Washington, Bureau for Global Health
Phone: 202-712-1070 (O) [redacted]
Email: awang@usaid.gov

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PREDICT-DRC_EVD Outbreak Bas-Uele 22May2017.doc

Thanks, James -- please use this version for further editing, as I added the disclaimer that I suggested yesterday in bold to the entry for the 22nd. Please use this kind of notation or another for the same purpose in future updates, where non-Predict activities are detailed. USAID appreciates these updates very much, but we want to be clear what is our work and what is just informational. Doing that will likely help limit the number of follow-up questions I receive.
Appreciate your work & please take care,
Jonna

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From: [redacted] > on behalf of Jonna Mazet <jkmazet@ucdavis.edu>
Sent: Monday, May 22, 2017 5:24:44 PM
To: Karen Saylors; Eddy Rubin; James Ayukekbong; Prime Mulembakani; Maria Makuwa; Damien Joly
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> Find attached the updated PREDICT Outbreak Rapid Report form regarding the current Ebola outbreak in DRC.
>
> We are told the Minister of health would sign an official request for PREDICT to perform the following;
>
> - To conduct a joined ecological research with FAO to look for Ebola virus among wild and domestic animals in Likati.
>
> - To test all samples (including negatives) from these outbreak with the PREDICT panel.
>
> Kind regards,
>
> **J.A Ayukekbong, PhD**
> Regional Coordinator /Central Africa
> USAID PREDICT | Metabiota
> Email: jayukekbong@metabiota.com
> Mobile: +1 250-797-7755
> Website: www.metabiota.com
> Skype: ayukekbong.ayukepi

--

Angela Wang, MSPH
Public Health Advisor
Emerging Threats Division, Office of Infectious Disease
USAID/Washington, Bureau for Global Health
Phone: 202-712-1070 (O) | REDACTED (C) | RRB-3.06.050
Email: awang@usaid.gov

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PREDICT Outbreak or Health Event Rapid Report

Today's Date: *May 22nd, 2017*
Working Title of Investigation: *Outbreak of Ebola Virus Disease in the Bas-Uele province, DR Congo*
Cumulative day of the outbreak investigation: 13

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

On 8 May 2017, an alert of 9 suspected cases of Human Viral Hemorrhagic Fever and 2 deaths in the Likati Health Zone, Bas-Uele Province was received from the Provincial Health Officer. Symptoms were fever, bloody vomiting, diarrhea, and bleeding from the nose.

Location	
Country:	*Democratic Republic of Congo*
District:	*Province of Bas-Uele, Health zone of Likati, north-west of Buta*
Village/Town:	*Village in the Nambwa health area, Territory of Aketi*
GPS Coordinates (if known):	
Date that first case(s) of illness occurred (if known or estimate):	*April 22nd, 2017*
Date that PREDICT was first notified of outbreak:	*On May 10th, 2017 the PREDICT CC was informed by the INRB staff working in the virology lab that they were notified of suspected cases of VHF in the Likati Health Zone and that samples were expected to arrive for confirmatory testing anytime.* *On May 11th, 2017 the PREDICT CC was informed that the samples arrived at INRB in early afternoon and are being tested for Ebola. The same day the PREDICT CC was informed by the EPT2 focal point at the mission who talked on the phone with the Bas-Uele provincial health officer about more details on this alert: 9 cases and 2 deaths.*

Key Information	**Description of Findings/Actions/Outcomes**			
How many affected individuals?		**Suspected:**	**Confirmed:**	**Deaths:**
	Humans	43	2	4
	Domestic Animals			
	Wild Animals			
How was outbreak first noticed?	*During 16th week, a 45 year old man (case 1), fisher and farmer, became sick with fever, then bloody vomiting, bloody*			

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	*stools and nosebleed in the fisher camp along the river Likati, in the Nambwa health area. He was brought to a traditional healer and then transported by moto with 2 relatives, case 2 (moto driver) and case 3 (his brother) to the Likati general hospital about 45 km away. B*ut he died on the road. Then case 3 decided to return to their village with the corpse. He was buried in the Kapayi village, Nambwa health area. On 25th April, case 2 and 3 developed the disease with same symptoms. Case 2 died the same day, and case 3 recovered. From these 3 persons, 6 other close contacts were infected. Among them, a young boy who attended the burial of case 1 died on 11th May. The provincial health office has sent a team to the site to investigate and information is expected when they return as the area has no cell phone coverage.
Where was the first reported case? What is/was the extent of geographic spread? Include comments on the apparent speed of spread.	*For now the disease is located within four health centers: Nambwa (12 cases, 2 deaths), Muma (3 cases, 1 death), Ngayi (4 cases, 0 death) and Azande (1 case, 0 death), in the Likati Health Zone, Territory of Aketi in the Bas-Uele province, where the first reported case was treated at the health center. No case is reported outside this area.*
Has the country requested support from PREDICT (include date of request)?	*Yes, the INRB General Director asked PREDICT to retest the 5 samples that were received from the field using PREDICT protocols;*
If so, which government agency requested PREDICT support?	The Ministry of Health through the INRB which is the national Public Health Laboratory
When was PREDICT response initiated (date)?	Saturday, 13th May, 2017
Are other EPT partners involved in the response (which ones and how)?	*None for now*
What type of assistance did PREDICT initially provide? Which PREDICT personnel were involved?	Testing of 5 samples from the field using PREDICT protocols and primers for Filoviruses, by the PREDICT lab manager and lab technician
When was the first official acknowledgement of the outbreak (by which government agency or other reputable body and date)? When was a response initiated and by whom? Which agencies were involved? Who was in charge of the national response?	On May 9th, 2017, the Bas-Uele provincial office informed the MoH direction of disease surveillance of the alert. A team from Buta, the provincial health office was sent to the site to investigate. A team from the MoH direction of disease control, INRB, Hygiene and the Ministry of information travelled on Saturday morning to the field. They reached Likati (health zone office) on Sunday night at 10.00 PM. On Monday morning they had a meeting with the health zone staff and sent a first report to the national coordination committee via the Ministry of Health

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). *Note: Daily updates for ongoing laboratory testing should be entered in the Daily Activities/Timeline table below.*	Yes, the INRB virology laboratory tested 5 serum samples collected from patients admitted at the Nambwa health center and who were in contact with the diseased cases. They performed real-time PCR and found 2 positive results for Zaire Ebola virus. The tests were performed on 11th May and re-tested on 12th May, 2017 by the same staff. On Saturday, 13th May, the samples were re-tested by the PREDICT staff using the PREDICT protocol. They found one positive result on the 5 samples, the same that was clearly positive by real-time PCR.
Where was the laboratory testing performed (name of laboratory)?	Samples were tested at the INRB virology laboratory
Number of days between initiation of government response and lab confirmation of laboratory results.	N/A
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:	
Summary of PREDICT Team response activities during the outbreak.	

	Suspected:	**Confirmed:**	**Deaths:**
Humans			
Domestic Animals			
Wild Animals			

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PREDICT Outbreak or Health Event Response Daily Activities/Timeline

Working Title of Investigation: *Suspicion of VHF in the Bas-Uele province, DR Congo*

*Instructions: This is the timeline of all PREDICT team activities related to this event. Please fill out in detail any PREDICT team activity as they occur on a **daily** basis (e.g., sample collection, other field activities, laboratory testing, outbreak related meetings attended, communications with the Mission or Government, etc.) in addition to the key specific items listed below.*

*Add additional rows into the specific activities listed below **in chronological order** as needed. If a specific listed event has not yet occurred, please put "pending" or "not expected" in the date column.*

Key Events:

Date	Day #	Notification or Action Taken
5/10/2017	1	First notification of 9 suspected cases of Viral Hemorrhagic Fever in the Nambwa Health Area, Likati Health Zone, Bas-Uele Province;
5/11/2017	2	PREDICT Country coordinator (CC) notified of reception of samples from the suspected cases at the INRB; PREDICT CC notified PREDICT global team
5/12/2017	3	Two samples out of five tested positive for Ebola Zaire virus, and 3 were negative by real-time PCR at the INRB virology laboratory. PREDICT CC attended the National coordination committee meeting where the Minister and his team presented the situation: 9 cases and 2 deaths, and preparations are made of an investigation team composed of epidemiologists, medical biologists and lab technicians (from the MoH and INRB) to travel tomorrow from Kinshasa to support the local team, begin contact tracing and prepare the logistic for the outbreak response. The area of Nambwa is located 45 km from Likati but it takes about 5 days to reach by car and 2 days by motorcycle. The Minister and WHO have contacted the UN Mission to provide an helicopter to bring equipment to the site. The INRB will deploy the K-Plan mobile laboratory that was purchased through the USAID funds for Yellow Fever Outbreak in Nambwa.
5/13/2017	4	PREDICT CC attended the meeting of the National coordination committee, where the Ministry of Health updated partners of the situation on the ground: a total of 11 cases were reported since the beginning of the outbreak with 3 deaths in the 3 health areas of Nambwa (7 cases and 3 deaths), Mouma (3 cases and 0 death) and Ngayi (1 case and 0 death). The provincial investigation team was back to Likati and could send this update by phone via the provincial health office.

		A team of 9 persons left Kinshasa today for Nambwa, composed of 2 epidemiologist, 1 lab technician, 1 clinician, 1 data manager, 1 information specialist, 1 hygienist, 1 logistician and 1 psychologist. They are expected to reach Nambwa on Monday or Tuesday and will prepare the logistic for the local coordination committee and begin contact tracing and sensitization. Staffs from the WHO country office and the Ministry of health are working to prepare the list of needs for the outbreak response and a budget. A request was made to the MONUSCO to provide an air lift between Kinshasa and Likati for shipping all materials and equipment, including the K-Plan mobile laboratory from the INRB.
5/15/2017	6	On Saturday, 13th May, the General Director of INRB asked PREDICT to retest the 5 samples received from the field for Filovirus using the PREDICT protocol. The reason was to have a second diagnostic method. The INRB staff tested these samples on Friday and Saturday by real time PCR, using 3 different protocols: the first targeting the L gene returned 1 positive result; the second targeting the NP gene returned 2 positive results, and the 3rd targeting the Glycoprotein gene returned 1 positive result. Using the PREDICT protocols, the PREDICT staff tested the five samples which returned only one putative positive result on the gel, from the sample which tested positive from the 3 protocols used by the INRB staff. Amplicon from this sample will be send to GATC for sequencing per our protocol. This result was as expected as the PREDICT Filovirus protocols should be and are correct for detection of this virus but are also necessarily less sensitive as a result of conserved technique, resulting in weak or negative reactions in samples with low viral load. PREDICT CC and virologist attended the National Coordination meeting. Two points were discussed: 1) the plan and budget for the outbreak response: a group from the MoH direction of disease control, the INRB, WHO, UNOCHA and UKAID finalized the plan and budget on Monday morning. Main points are: strengthening of coordination, surveillance, hygiene and biosecurity, medical and psycho-social care, laboratory diagnostic, communication and rehabilitation of health centers and the Likati General Hospital in the Bas-Uele province. No decision of quarantine will be made. The INRB will deploy two mobile laboratories, one at Nambwa (epicenter) and a second in Buta with possibility to be deployed anywhere based on the epidemiologic situation of the outbreak. The total budget for the response is $8,072,636.00 and includes:

		coordination at national, provincial and local levels ($945,377), surveillance and laboratory ($1,685,265.00), communication ($505,000.00), materials and supplies ($1,605,000.00), medical and psychosocial care ($2,313,280.00), prevention ($ 477,839.00), Water, hygiene and sanitation ($540,675). Main Challenges are: transport of goods to the affected area (THE UN may help with a Helicopter), and transport of probable cases to the Ebola Treatment Center due to bad roads. 2) the situation on the field: now the total of cases has increased to 20, reported from 4 health areas: Nambwa with 12 cases and 2 deaths, Muma with 3 cases and 1 death, Ngayi with 4 cases and 0 death, Azande with 1 case and 0 death. Samples collected will all be shipped to the INRB because the committee decided not to wait for the mobile lab to be deployed. Right now all cases are being treated at home because there is no facility for handling Ebola cases. The Ebola Treatment Center is still under rehabilitation. The team has begun to disinfect the laboratory and health centers and the local radio broadcast is used for sensitization.
5/16/2017	7	PREDICT virologist attended the National Coordination Committee. A new case was reported from Nambwa, young girl 16 years old living in a house with a suspect case. Now the total number of reported cases are 21: Nambwa 13 cases, 2 deaths; Muma 3 cases, 1 death; Ngayi 4 cases, 0 death, Azande 1 case, 0 death. 3 teams are now deployed in the field in three different locations with the following objectives : active research of suspected cases, sample collection, contacts tracing and assessment of logistic needs. A fourth team led by the Ministry of Health will leave Kinshasa tomorrow with one mobile laboratory from the INRB, prepared to perform 100 tests. WHO has mobilized PPEs from the city of Kisangani to support the response. Seven committees were set up and will be meeting everyday; PREDICT was invited to be included in the committee in charge for laboratory and research. The first meeting will be on next Thursday to analyze all needs and make request to different partners. These committees will report to the National Coordination Committee daily. PATH, a CDC Implementing Partner in charge to support the country Emergency Operation Center – GHSA is partnering with DigitalGlobe and UCLA to get precise maps of the Likati health zone. They have provided cellphones with GPS to the team who will travel to the site tomorrow.
5/17/2017	8	The PREDICT Lab manager attended the National Coordination

		Committee meeting at the MoH: no new cases reported from Likati, still a total of 21 cases with 3 deaths, and 4 health areas affected; samples were collected from a total of 13 cases; 5 were shipped to Kinshasa and tested at the INRB, and 8 are kept in Aketi waiting to be tested on site. The investigation team has identified a total of 416 contacts to be followed. A team from the INRB travelled this morning with the 1st mobile laboratory which will be deployed in Nambwa. The 2nd mobile laboratory (K-Plan) will be transported to the field tomorrow and will be deployed in Likati. A fourth investigation team, led by the Minister of Health will travel to the site tomorrow. WHO has confirmed that PPEs (unknown number of kits) were deployed to Aketi from their stockpile in Kisangani PREDICT was requested by the Commission of Laboratory and Research to provide for the mobile laboratory: one glovebox, 1 Qiagen extraction kit and Ethanol.
5/18/2017	9	PREDICT CC and virologist attended the 1st meeting of the commission for laboratory and research, with staffs from the INRB, CDC, UCLA and FAO-ECTAD: - The mobile lab arrived and was deployed to Aketi with 4 INRB staffs; - The K-Plan laboratory travelled today and will be deployed to Buta, the provincial capital city; - INRB transmitted a list of reagents and supplies needed to perform lab tests in the field; the list was transmitted to the MoH and FAO. The team from FAO informed that they will provide the needed supplies according to what is available now at the Central Vet Lab PREDICT virologist attended the National Coordination Committee meeting: The Minister of Health reported on his trip to Aketi: the deployed team is performing active research of suspected cases and contacts; visited health facilities and traditional healers; ongoing data collected regarding burials in villages; sensitization of local communities; different opinion leaders are intensively collaborating with investigation teams; as well as challenges due to bad roads. Epidemiological update: Total of 29 suspected cases reported, and 3 deaths: Nambwa Health Area=11 cases and 2 deaths; Muma Health Area=3 cases and 1 death;

		Ngayi Health Area=14 cases and 0 death; Azande Health Area=1 case and 0 deaths. Registered contacts under follow up = 416. A total of 35 samples collected: 5 were shipped to Kinshasa and the remaining stored at Likati waiting to be tested on site. Four new alerts received, 2 from Azande and 2 from Ngabatal, under investigation Mobile lab expected to be operational tomorrow Discussion on vaccination: Director of the Expanded Program for Immunization presented a plan and proposal for the use of experimental vaccine that was used in West Africa which is made of recombinant ZEBOV-VZV. The vaccine is efficient in protecting chimpanzees from infection. It should be conserved at -60°C, conditioned in 10 doses/vial and after reconstitution could be conserved between +2 and +8°C for a maximum of 6 hours. The vaccine is administered via intramuscular injection. The Protocol of vaccination is ready and will be submitted this evening to the Ethical Committee at KSPH for approval and will be considered a clinical trial. The vaccine is not approved to be used in humans yet. If the DRC Government accept the use of this vaccine, nearly 12,000 doses could be provided to be administered to teams working in the field.
5/19/2017	10	PREDICT virologist attended 2nd meeting of the commission for laboratory and research with staff from the INRB, CDC, UCLA: The commission has transmitted the complete list of members and partners to Ministry of Health. The General Director of INRB presented the strategy for response to the outbreak: - The Mobile Laboratory should be operational for PCR, ELISA tests and rapid tests - As there are only 3 deaths reported till today there is a possibility that this current Ebola outbreak may be mask by another unknown pathogen – INRB will also deploy a team from the Parasitology and Bacteriology Laboratories to perform investigations and diagnosis on samples collected in the field (for example recently in Banalia - Shigella and Salmonella infections were responsible for several deaths) **Reagents for diagnosis:** - Two boxes of Ebola rapid tests are available at INRB Virology Laboratory - Another tests will be provided by Japanese Cooperation

		- The Ebola tests for Mobile Laboratory (Kaplan- Prof. Parisi) were sent to DRC via DHL - The Gene Expert machine with reagents will be received this Sunday and offered by UCLA project to INRB PREDICT virologist also attended the National Coordination Committee meeting: Epidemiological update: At the date of May 18, 2017 a total of 32 suspected cases were reported with 4 deaths: Nambwa-11 cases, 2 deaths, Mouma – 3 cases, 1 death, Ngayi – 14 cases, 1 death*, Azande-2 cases and Ngabatala – 2 cases. Concerning the 4th death* – young girl, 22 years old died with hemorrhagic symptoms, vomiting and fever on May 8, 2017 in a small village near Ngayi. She was the family member of the 3rd died case. The burial ceremony was done for her and this was only reported when the surveillance team visited the site. Four direct contacts were identified, they are sick and under the surveillance in the village. Registered contacts: 416 persons Samples collected: 35 The Mobile Laboratory was installed and the testing of samples will start this evening. In the reference Hospital in Likati, separate room for suspected cases and sick persons was prepared for safe medical follow –up of these persons. The General Director of INRB highlighted the importance of intensive research of new cases, the daily follow-up of all contacts (two times per day with measurement of corporal temperature). He also highlighted the importance to determine the "definition of case" by the medical team deployed in the field. The follow-up of contacts is very challenging/difficult to be implemented, there is a need for trained voluntaries (ex. members of Red Cross) to help. **Vaccination Program against Ebola:** The Government has approved the use of the Ebola vaccine in DRC during this Ebola outbreak. The Protocol of vaccination was submitted to Ethical Committee at KSPH for approval as a clinical trial. Several scenarios were proposed and will be discussed before starting the

		vaccination.
5/20/2017	11	PREDICT CC attended the meeting of the commission of Laboratory and Research: Results from the CIRMF laboratory in Gabon: The 2 positive samples for Zaire Ebola Virus out of the 5 that were tested at the INRB were retested and confirmed in CIRMF. The staff at CIRMF is performing whole sequencing of the virus and will send results on Monday or Tuesday with Phylogenetic analysis. The K-Plan mobile laboratory arrived in Kisangani pending transportation to Buta, the provincial capital city. The INRB staff sent to Likati have tested 22 samples collected from suspected cases, all tests (real-time PCR) returned negative results. The director of INRB would like PREDICT to test all negative results with PREDICT protocol for the 5 PREDICT viral families. The DRC PREDICT team is unsure about this as the current sample collection is not in conformity with PREDICT protocol. PREDICT samples should be stored at -80° C soon after collection in either Trizol or VTM which is not the case on the field. PREDICT CC attended the meeting of the National Coordination Committee: The following issues were raised: The data from the field need to be cleaned, waiting for more accurate data tomorrow; the generator of the mobile laboratory is not working, and the lab is using the generator from the Health Zone office; contact tracing is challenging due to bad roads; 2 health facilities were selected to be rehabilitated and transformed to Ebola Treatment Centers (ETC). The K-Plan reagents not arrived yet at the INRB as of this evening at 4.00 PM The CDC will provide rapid tests for this outbreak It was proposed that the team in Likati prepares and sends a list of all cases and contacts, noting timeline of symptoms occurrence, date of sample collection, and clinical outcome in order to better follow the epidemiological curve and be more specific on contacts who can be considered to be removed from the list

		All commissions should prepare an operational action plan; all technical discussion should be prepared in the commissions, and each partner interested to support specific actions and activities should present this to the commission.
21/05/2017	12	-
22/05/2017	13	PREDICT CC and Virologist attended the National Coordination Committee Meeting at the MoH **(all iterms are informational and do not reflect PREDICT activities)**: Situation in the field: - A total of 43 suspected cases with 4 deaths: Nambwa, 24 cases and 2 deaths; Muma, 4 cases and 1 death; Ngayi 10 cases and 1 death; Azande, 3 cases and Ngabatala, 2 cases. - A total of 419 contacts registered: 158 in Nambwa, 162 in Muma, 98 in Ngayi, 1 in Azande and 0 in Ngabatala. - Number of contacts followed=54; - A total of 38 samples collected to date, of which 5 were tested at INRB and 33 being tested in the field with the Mobile laboratory in Nambwa. -- All 33 samples were negative by PCR for the Zaire Ebola virus nucleoprotein. - Thc K-Plan mobilc laboratory that was pickcd up from thc INRB and thought to have left for Kisangani is still in Kinshasa waiting to be transported to Buta. - The INRB team who will work on this mobile lab is already in Buta. - Dr. Pierre Rollin from CDC arrived in Kinshasa with 250 OraSure (OraQuick) rapid tests and 100 Chembio Ebola-Paludism rapid tests. These tests will be used in the field by investigation teams working at places distant from the mobile laboratory. - UCLA in partnership with Dr. Gary Kobinger (a researcher at the University of Laval, Canada, formerly with the Public Health Agency of Canada) will provide the GeneExpert to be used at the Ebola Treatment Center.
		First spccimcns dclivcrcd to laboratory
		First laboratory preliminary results
		First laboratory confirmed results
		First report of results to government and taskforce
		First notification to USAID of government cleared laboratory results

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:	

Wildlife/Environment ministry or department:	
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OIE focal point:	
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EPT PREPAREDNESS and RESPONSE Project:	
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Mobile Phone:	

Other Important Contacts:

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Organization:	
Name:	
Email:	
Mobile Phone:	

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Organization:	
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Mobile Phone:	

From: Andrew Clements <aclements@usaid.gov>
Sent: Fri, 2 Jun 2017 19:20:12 +0200
Subject: Re: PREDICT-2 April 2017 Ebola Financial Report
To: Elizabeth Leasure <ealeasure@ucdavis.edu>
Cc: Alisa Pereira <apereira@usaid.gov>, Jonna Mazet <jkmazet@ucdavis.edu>, David John Wolking <djwolking@ucdavis.edu>, Amalhin Shek <ashek@usaid.gov>, Shana Gillette <sgillette@usaid.gov>

Received. Thanks.

Andrew P. Clements, Ph.D.
Senior Scientific Adviser
Emerging Threats Division/Office of Infectious Diseases/Bureau for Global Health
U.S. Agency for International Development
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Email: aclements@usaid.gov

On Jun 2, 2017, at 5:59 PM, Elizabeth Leasure <ealeasure@ucdavis.edu> wrote:

> Hi Andrew and Alisa. Please find attached the April 2017 Ebola Financial Report for PREDICT. Please note that the negative value for Guinea "other" costs is a correction to a coding error, where domestic travel costs were previously reported as "other" by mistake. Let me know if you have any questions.
>
> Thanks,
> Liz
>
> Elizabeth Leasure
> One Health Institute
> University of California, Davis
> 530-754-9034 (office)
> REDACTED (cell)
>
> <PREDICT Ebola Financial Report_Apr2017_final.pdf>

From: Kirsten Gilardi <kvgilardi@ucdavis.edu>
To: Anna Willoughby <willoughby@ecohealthalliance.org>, "Carlos Zambrana-Torrelio" <zambrana@ecohealthalliance.org>, Tammie O'Rourke <torourke@metabiota.com>
Cc: Peter Daszak <daszak@ecohealthalliance.org>, Christine Kreuder Johnson <ckjohnson@UCDAVIS.EDU>, Jonna Mazet <jkmazet@ucdavis.edu>
Subject: Re: EHA eidith access for DEEP FOREST Uganda
Sent: Wed, 28 Feb 2018 19:05:53 +0000

Hi Carlos, Annie, Tammie:
Peter and Kevin have access to Uganda Deep Forest data from PREDICT-1 in EIDITH— I am fine with Peter or Kevin pulling the specific Uganda data that you need, Carlos, for Deep Forest analyses.

Carlos, it would be great to hear more specifically about the host/virus analyses you plan to do, and to include Benard Ssebide and others of us from UCD on discussion and work going forward.

Thanks,

Kirsten

On Feb 26, 2018, at 2:15 PM, Anna Willoughby <willoughby@ecohealthalliance.org> wrote:

Hi Tammie,
This has not been resolved. Carlos only has access to the P1 Deep Forest data for Malaysia and Brazil (see screenshot attached). Carlos is hoping to receive access to Uganda DF data only for standardized analyses. We are also confused how to link the viral information once we have access to P1 Deep Forest, as there is no testing or sequence tab for the Deep Forest portal. For access to P2 Malaysia, animals sampled, we receive the above error and cannot access data. We are happy to plan a call if you or the Uganda team need any clarification.

Thanks,
Anna

On Mon, Feb 19, 2018 at 2:37 PM, Tammie <torourke@metabiota.com> wrote:

Hi Carlos - did this get sorted out? I believe you should already have access to their data?
Tammie

------ Original Message ------
From: "Carlos Zambrana-Torrelio" <zambrana@ecohealthalliance.org>
To: "Anna Willoughby" <willoughby@ecohealthalliance.org>; "Kirsten Gilardi" <kvgilardi@ucdavis.edu>
Cc: "Christine Kreuder Johnson" <ckjohnson@ucdavis.edu>; "Tammie O'Rourke" <torourke@metabiota.com>; "Peter Daszak" <daszak@ecohealthalliance.org>
Sent: 2/16/2018 1:17:10 PM
Subject: Re: EHA eidith access for DEEP FOREST Uganda

Hi Kirsten,
I'm not sure about the previous Uganda data pulls for EHA. I'll double check with the team here. Other than the development of the eidith R package I cannot think about other people using Uganda data.

We are requesting access to the Uganda DF host and viral results data. We already completed the host analysis for Malaysia and currently we are in the process to finish the host analysis for Brazil. We would like to continue doing the same analysis for Uganda now.

Please let me know if you have any questions,

Best,

Carlos

On Feb 14, 2018, 10:47 PM -0500, Kirsten Gilardi <kvgilardi@ucdavis.edu>, wrote:

> Hi Anna:
> There have been several Uganda data pulls for EHA for the Deep Forest project to date.

Can you be more specific as to what additional PREDICT-1 Deep Forest data is needed from Uganda, and for what purpose? We can then work with Tammie to get the team what it needs for any additional analyses.

Thanks,

Kirsten

> On Feb 12, 2018, at 2:26 PM, Anna Willoughby <willoughby@ecohealthalliance.org> wrote:

Dear Chris, Kirsten, and Tammie,
I am writing on behalf of Carlos here at EHA in order to gain access to P1 Uganda DEEP FOREST host and viral testing data for incorporation with our country analyses. Peter currently has access through the eidith website to the Events, Animals, and Specimen tables for all DF countries, but neither Peter nor Carlos have access to testing results of these data. Carlos does not have access to Uganda data.

Tammie, this may simply be an app permissions issue, but I'd like Chris and Kirsten to be on the same page before Carlos accesses and analyzes these data.

Also, for P2 DEEP FOREST (only Malaysia), we are able to see the "Animals Sampled - Deep Forest" under "Uploaded Data". This report, however, is unable to generate due to this error:

Error on Primary Select: Ambiguous column name 'TimeCapture'. Ambiguous column name 'NbrDarts'. Ambiguous column name 'TotalTimeTrapsOpenAndBaited'. Ambiguous column name 'DrugsUsed'. Ambiguous column name 'AdditionalDose'. Ambiguous column name 'DartTime'. Ambiguous column name 'RecumbancyTime'. Ambiguous column name 'TimeTrapCheck'.

We are also unclear on how to view viral results for P2 DF Malaysia. Lastly, for barcoding confirmation, we see this as the IdCertainty = "barcoded" column in the Animals sheet. Would it be possible to see the original species name + the barcoded corrected name? This would allow us to understand common issues in the field. Carlos, please add any missing details if you have them.

Please let me know if you have questions, I realize these are extremely specific requests. We are happy to plan a call if any of you need further clarification or have any question for us.

Thanks for your help!
Anna

--

Anna Willoughby
Research Assistant

EcoHealth Alliance
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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.

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Anna Willoughby
Research Assistant

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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.

<carlos_eidith_access.png>

From:	David J Wolking <djwolking@ucdavis.edu>
To:	William Karesh <karesh@ecohealthalliance.org>
CC:	Peter Daszak <daszak@ecohealthalliance.org>;Catherine Machalaba <Machalaba@ecohealthalliance.org>;Ava Sullivan <sullivan@ecohealthalliance.org>;Evelyn Luciano <luciano@ecohealthalliance.org>;Corina Grigorescu Monagin <cgmonagin@ucdavis.edu>;predict@ucdavis.edu <predict@ucdavis.edu>
Sent:	3/20/2018 11:57:33 AM
Subject:	[predict] Re: Action required: P2 2018 Semi-annual report - due to HQ April 13, 2018

Whoops! Missed Billy on the original....

On Tue, Mar 20, 2018 at 11:56 AM, David J Wolking <djwolking@ucdavis.edu> wrote:
Hey Billy and Catherine,

It's Semi-annual Report time!

I'm attaching your section from the AR 2017 for reference and to update as the SAR 2018 template. Feel free to scrap or retain what you like from this as you update the content from your activities to cover the this report's period of performance (October 1, 2017-March 31, 2018).

Our deadline for submission back to HQ is April 13, 2018. Since EIDITH submissions are in pretty good shape and the report is cast in the same mold as the annual report (or even abbreviated for the semi-annual period), hopefully this is enough time.

I'm also including the M&E components for the Behavior Risk team here with instructions (see below). If you have questions on the M&E stuff, reach out to me and Corina (she's just now back from leave).

Thanks,

David

M&E Guidance:

Please see attached for your relevant M&E indicator reference sheets and template for data entry. The templates have not changed from last year's annual report. Most instructions are included on the template itself but please refer to the indicator reference sheet if you have questions. If applicable, we included cumulative data so that you may add onto this (there is only one cumulative indicator) **The data call is from October 1, 2017 – March 31, 2018.**

Additional information below *(a lot of these indicators are captured from global leads and country teams)*

One Health (Billy/Catherine):

2B: Qualitative Indicator: List/Description of application of OH approaches in the workforce (consult with Capacity team; (country info captured in our Google form).
3A: Qualitative Indicator: List/Description of national/regional coordination mechanisms showing improved capacity (country info captured in our Google form)
3B: Qualitative Indicator: List/Description of global, regional or country (lab, surveillance, workforce, OH, AMR) strategies under implementation (country info captured in our Google form).
3.2a: #, list of high-level multisectoral and/or multilateral events coordinated (country info captured in our Google form).
3.2b: #, list of tools for implementation or operationalization developed (consult with Capacity team).
3.2c: #, list of evidence-based informational resources developed or refined (consult with M&A, Lab, Surveillance, and Capacity teams).
3.2d: #, list of policy briefs developed and disseminated (consult with M&A, Lab, Surveillance, and Capacity teams).
3.2e: #, list of community OH events coordinated (country info captured in Google form and now in

EIDITH site and event form).

Produced in Native Format

One Health Partnerships

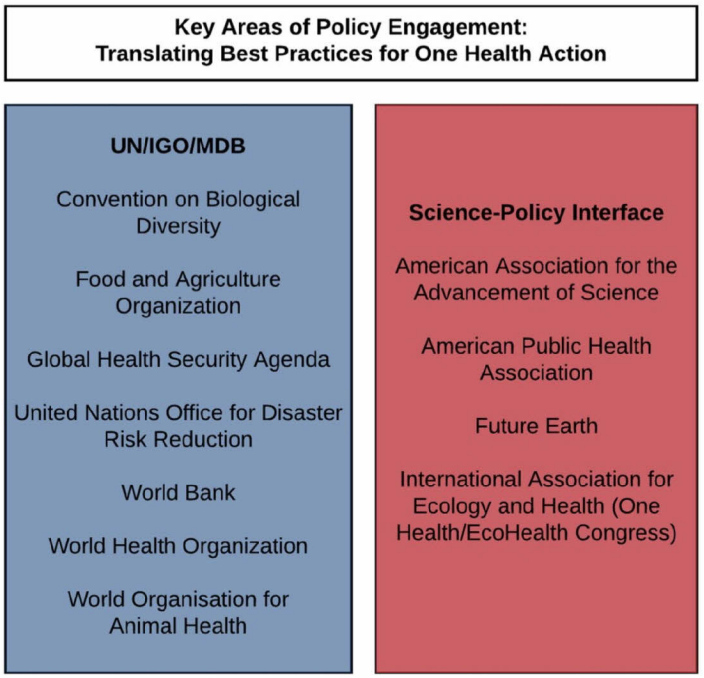
One Health policy advocacy

To strengthen integration of the environment sector in One Health and health security, we suggested key additions and updates to the World Health Organization (WHO) for their forthcoming guide for national action planning for health security, as well as the WHO Joint External Evaluation tool, to reflect wildlife pathogen surveillance, disease forecasting, and risk management opportunities. We also provided expert guidance on a draft matrix of impacts to health from environmental change and One Health "vignettes" to inform potential actions by the G7.

We prepared a One Health policy statement for the American Public Health Association (APHA), highlighting needs and opportunities for the public health community to advance health security and pandemic prevention and preparedness capacity in the U.S. and globally. The policy statement draws on strategies and lessons learned from PREDICT-2 and was prepared in collaboration with the health focal point from the UN Office for Disaster Risk Reduction (UNISDR). This fills a critical policy gap in the APHA.

Other highlights and success stories

We developed a One Health outbreak simulation exercise for students, which was piloted with international students from Dartmouth College. The exercise examined an undiagnosed illness (modeled on the 1998-99 emergence of Nipah virus in



Malaysia) through the human health, animal health and environment sectors, bringing together information to elucidate the transmission chain and demonstrating the value of multisectoral collaboration via a One Health approach.

Building on global economic analyses in the World Bank's 2012 "People, Pathogens and Our Planet" report, PREDICT partnered with the World Bank and the Network for Evaluation of One Health to hold an expert workshop in February 2017 to

One Health in Action, a case study booklet released by PREDICT and P&R is available online at: onehealth.predict.global

examine how to align methods, metrics and data to inform national decision making. Through the workshop, we established a methodology for country-level economic analysis of One Health. These methods are being applied in PREDICT countries, reinforcing overall efforts in collaboration with the World Bank to operationalize One Health and assist countries in determining cost-effective pandemic prevention and preparedness measures.

As part of ongoing investigations to advance our understanding of the value of the One Health approach, we disseminated the One Health data collection form to PREDICT countries. By systematically documenting examples of One Health, we can evaluate its effectiveness and identify best practices for local and national platforms, creating synergies with EPT-2 partner Preparedness and Response (P&R) to maximize benefits generated from One Health approaches. The "One Health in Action" case study booklet highlighting examples was also released by PREDICT with P&R on the first international One Health Day and is available online.

New publications, products, and policy briefs

This year we produced eight new publications, products and policy briefs.

- "Evaluating One Health: Are we Demonstrating Effectiveness?" in the journal *One Health* (collaboration with P&R).
- "Summarizing US Wildlife Trade with an Eye Toward Assessing the Risk of Infectious Disease Introduction" in *EcoHealth,* reviewing 14 years of import data, including from PREDICT countries, to examine possible zoonotic disease risks.
- "Global Environmental Change and Emerging Infectious Diseases: Macrolevel Drivers and Policy Responses" (book chapter).
- "Avoiding catastrophes: seeking synergies among the public health, environmental protection, and human security sectors" in *The Lancet Global Health* (commentary).
- "Wildlife hosts for OIE-Listed diseases: considerations regarding global wildlife trade and host–pathogen relationships" in *Veterinary Medicine and Science* (Published findings of host-pathogen analysis entitled).
- Post on the *Lancet Global Health* blog on disease drivers and animal vaccination targets to optimize the Coalition for

Epidemic Preparedness innovation (CEPI - with partners from the World Bank, Harvard and OIE: Available online).
- 'One Health in Action' case study booklet (English and French, see above for link).
- A briefing document on the role of environment in One Health and national health security.

Selected presentations on PREDICT, One Health, zoonotic diseases, and global health security

- Presented on economic consequences of EIDs as well as disease drivers and pathogen surveillance in wildlife and relevant costing items as integral components of national action planning for health security at the WHO Stakeholders Consultation on Planning, Costing and Financing for accelerated IHR implementation and Global Health Security (non-PREDICT).
- Presented at high-level GHSA event held at the State Department.
- Presented on PREDICT approaches and EID risk mitigation at multiple side events at the Convention on Biological Biodiversity (CBD) Thirteenth Conference of the Parties, including dissemination of key messages from the infectious disease chapter of the WHO-CBD State of Knowledge Review on Biodiversity and Human Health. A formal decision was passed reinforcing the value of One Health and recognizing the drivers of EIDs.
- Hosted session on One Health at the AAAS Science Diplomacy conference, presenting on drivers of disease and the economics of One Health.
- Presented on the drivers of disease and the PREDICT project on a Future Earth webinar.
- Presented on PREDICT One Health effectiveness metrics at the EU Network for Evaluation of One Health meeting.
- Presented on policy engagement for One Health, One Health and viral discovery, and organized a symposium on future health at the One Health/EcoHealth Congress.
- Attended the FAO-OIE Global Framework for the progressive control of Transboundary Animal Diseases Steering Committee meeting.
- Attended the OFFLU Steering Committee meeting, presenting on influenza surveillance activities in wild birds.
- Chaired the OIE Working Group on Wildlife Meeting, highlighting new and emerging wildlife disease events and reinforcing the importance of country reporting for wildlife diseases.
- Presented on One Health cost-effectiveness at the American Public Health Association meeting.

From:	Andrew Clements <aclements@usaid.gov>
To:	Brian Bird <bhbird@ucdavis.edu>
CC:	PREDICTMGT <predictmgt@usaid.gov>;PREDICT-outbreak <predict-outbreak@ucdavis.edu>
Sent:	3/22/2018 8:19:18 AM
Subject:	[predict] [predict-outbreak] Re: Bangladesh update - bats

Thanks, Brian. I guess I thought the Predict testing was going to be Nipah-specific and therefore available within days after sampling.

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: aclements@usaid.gov

On Mar 22, 2018, at 3:08 PM, Brian Bird <bhbird@ucdavis.edu> wrote:

Hi Andrew,

For the PREDICT bat samples, the last of the bat testing results were entered into EIDITH for interpretation and if confirmed into gov't reporting earlier this week.

On the human side, I checked in with the team overnight and they confirmed that to their knowledge, the GoB has yet to publically discuss the results of the human testing that initiated our bat response activities. That is indeed frustrating, and our team country coordinator continues to work with his ministry partners to encourage more rapid public reporting generally. The team was going to make more inquiries as to why such a prolonged delay, and report back to us.

-Brian

From: Andrew Clements <aclements@usaid.gov>
Date: Wednesday, March 21, 2018 at 1:48 PM
To: Brian Bird <bhbird@ucdavis.edu>
Cc: PREDICTMGT <predictmgt@usaid.gov>, PREDICT-outbreak <predict-outbreak@ucdavis.edu>
Subject: Re: Update Ghana Lassa fever field investigation 20March2018

Thanks, Brian.

Any word on the results of bat testing in Bangladesh? If they aren't going to release results in a timely manner for an outbreak, it seems like a waste of time and money to go out and collect samples.

Andrew

On Wed, Mar 21, 2018 at 4:30 PM, Brian Bird <bhbird@ucdavis.edu> wrote:
Hi all,

Sampling updates from the field team. Details in report. We are nearing the end of the field investigation for this one, and should have some final close out details in the next day or two.

-Brian

Brian H. Bird DVM, MSPH, PhD

Global Lead Sierra Leone and
Multi-Country Ebola operations
PREDICT-USAID

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For more information on USAID's Emerging Pandemic Threats program, see: http://www.usaid.gov/ept2

From: Tom Hughes <tom.hughes@ecohealthalliance.org>
To: Daniel Schar <dschar@usaid.gov>, Sudarat <sdamrongwatanapokin@usaid.gov>
Cc: "aclements@usaid.gov" <aclements@usaid.gov>, "apereira@usaid.gov" <apereira@usaid.gov>, "predict@ucdavis.edu" <predict@ucdavis.edu>, "sullivan@ecohealthalliance.org" <sullivan@ecohealthalliance.org>, "Jon Epstein" <epstein@ecohealthalliance.org>, Allison White <white@ecohealthalliance.org>
Sent: Thu, 5 Apr 2018 11:33:34 +0000
Subject: [predict] Year 4 Quarter 1 partner update.
Y4Q1 Partner_Mission Update5.4.18.pdf

Hi Dan and Sudarat,

Great to see you both this week.

Attached is our partner update for Year 4 Quarter 1 - October 2017 to December 2017.

Please let me know if you have any questions or require any additional details.

Thank you all for your continued help and support.

Best regards.

Tom

Tom Hughes

Senior Scientist
Project Coordinator - Malaysia

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EcoHealth Alliance integrates innovative science-based solutions and partnerships that increase capacity to achieve two interrelated goals: protecting global health by preventing the outbreak of emerging diseases and safeguarding ecosystems by promoting conservation.

USAID | PREDICT
FROM THE AMERICAN PEOPLE

1 January 2018

Dear Partner,

The PREDICT project, part of USAID's Emerging Pandemic Threats program, is developing a global early warning system to detect, track, and predict the emergence of new zoonotic pathogens from wildlife that could pose a threat to human health. In Malaysia, PREDICT is implemented by EcoHealth Alliance in partnership with the Department of Veterinary Services (DVS) (Ministry of Agriculture), Ministry of Health (MOH) and the National Public Health Laboratory (NPHL), Department of Wildlife and National Parks (PERHILITAN), Sabah State Health Department, Queen Elizabeth Hospital (QEH) and the Kota Kinabalu Public Health Laboratory (KKPHL), Sabah Wildlife Department (SWD), Danau Girang Field Center (DGFC), Faculty of Veterinary Medicine Universiti Putra Malaysia (FVM UPM) and in cooperation with local stakeholders and communities.

Below is the summary of PREDICT achievements and progress during the first 3 months of Year Four activities from October 2017 to December 2017. The report includes an overview of PREDICT at the global level, followed by the summary of activities and progress in Malaysia.

PREDICT thanks all our partners for their continuing support, without which this work would not be possible.

Please direct all correspondence to the PREDICT Malaysia Country Coordinator:

Tom Hughes
PREDICT Malaysia Country Coordinator
Email: tom.hughes@ecohealthalliance.org
Phone: +60 3 6157 6035, Mobile: +60 193928307
Address: 13H, Villamas Condo, Villamas, Jalan Villamas, 47000, Sungai Buloh, Selangor, Malaysia

USAID FROM THE AMERICAN PEOPLE · UCDAVIS VETERINARY MEDICINE One Health Institute · WCS · EcoHealth Alliance · METABIOTA · Smithsonian Institution

PREDICT Global Plans (2015-2019)

- PREDICT will improve understanding of the dynamics of zoonotic virus spillover, evolution, amplification, and spread to inform prevention and control measures, and will facilitate and optimize policies and practices that reduce disease transmission risk through sound, science-based interventions.
- Using an epizonal approach, PREDICT is targeting surveillance activities at three major pandemic risk pathways that drive viral emergence: land conversion for commercialization, intensification of animal production systems, and animal value chains.
- PREDICT will characterize risk and surveil people and animals at high-risk interfaces along disease emergence pathways. Primary activities will include:
- Conducting standardized, longitudinal surveillance of human and animal populations to identify biological and ecological drivers and host-pathogen dynamics at high-risk interfaces within the three critical pathways of disease emergence and spread;
- Conducting human behavioural research so as to understand behavioural mechanisms of human-animal contact within high-risk pathways for disease emergence and spread AND identify potential control points, strategies, and interventions for pilot testing and policy promotion;
- Developing an evidence base to promote policies in support of cross-sectoral collaborations and actively engaging partners through data sharing, capacity building, surveillance, and outbreak response activities to demonstrate the value of the One Health approach; and
- Enhancing global capacity for disease surveillance and viral diagnostics; and improving global data collection, synthesis, storage, and sharing platforms to strengthen disease surveillance and outbreak response systems.

PREDICT-2 Malaysia: Continuing Plans

- Prioritize epizones and pathways in Malaysia for disease emergence, evolution, amplification, and spread along an urban-rural gradient, along transboundary animal value chains, and along animal production pathways to identify opportunities for targeted monitoring of zoonotic viruses in wildlife and human populations.
- Conduct concurrent sampling of wildlife, livestock, and at-risk human populations with high levels of contact with animals at Orang Asli villages on Peninsular Malaysia.
- Continue to conduct systematic and intensive wildlife sampling along a deforestation gradient and compare viral diversity in bats, rodents and nonhuman primates from each zone in Sabah.
- Initiate training of MOH District Health Office field teams for behavioural and biological human surveillance activities, and investigate human behaviours that may influence zoonotic disease risk.
- Strengthen laboratory capacity and conduct diagnostic testing on collected biological samples according to established PREDICT protocols.
- Continue to develop laboratory and surveillance capacity for human, wildlife and livestock surveillance.
- Coordinate with EPT partners in capacity strengthening and operationalizing the One Health approach at the country and regional levels.
- Identify and monitor behaviours, attitudes, practices, and socio-cultural norms that create risk for disease emergence.

PREDICT Malaysia Summary of Activities & Progress 1st October 2017 to 31st December 2017

Highlights and Success Stories

- In October 2017 – PREDICT Country Coordinator and PREDICT Laboratory Manager met with the Deputy Director General DVS, Director of VRI and other senior DVS staff to discuss PREDICT work in Malaysia including the expansion of the PREDICT project to include farms on Peninsular Malaysia and the serological screening. PREDICT Veterinarian attended 10th meeting for Asian Society for Conservation medicine. PREDICT Country Coordinator met with Deputy Director General DVS, DVS veterinarian's based at PERHILITAN and senior PERHILITAN staff to discuss results from serological screening and training of vets using the Bio-Rad Bio-Plex 200 provided by the DTRA funded "Serological Biosurveillance for Spillover of Henipaviruses and Filoviruses at Agricultural and Hunting Human-Animal Interfaces in Peninsular Malaysia" that is supporting the serological work being conducted on PREDICT samples.
- In November 2017– Wildlife Health Unit team leader presented on PREDICT work at the Southeast Asia Wild Animal Rescue Network (WARN) conference in Hanoi, Vietnam. The PREDICT Laboratory Manager attended the International workshop on molecular diagnosis for EEHV infection at Faculty of Veterinary Medicine, Kasetsart University, Thailand with Wildlife Rescue Unit (WRU) veterinarian Laura Benedict as part of the effort to help Sabah Wildlife Department to establish EEHV surveillance for Sabah. PREDICT Country Coordinator gave talk "Promoting One Health & Conservation through Zoonotic Disease Surveillance: The PREDICT, DTRA & IDEEAL Projects in Malaysia" at PERHILITAN's 8th Seminar on Biodiversity.
- In December 2017- PREDICT Field Manager attended the International Conference on One Plan Approach Conservation Planning and Formosan Pangolin PHVA Workshop in Taipei Zoo, Taiwan. PREDICT Field Manager was made a member of IUCN Pangolin Species Survival Specialist Group. PREDICT arranged through the US Embassy using DTRA funding for 2 vets from Sabah Wildlife Department / WRU to be able to attend the 4th Joint International Tropical Medicine Meeting held in Bangkok. A documentary titled "The Amazon of the East – Balancing the scales" focusing on the Deep Forest Project in Kinabatangan aired on the Animal Planet Chanel (South East Asia).

Summary of Surveillance and Field Activities for the Period 1stOctober 2017 to 31st December 2017

Peninsular Malaysia –

- October 2017– PREDICT and PERHILITAN went to Kuala Kangsar, Pos Kuala Mu to carry out wildlife sampling. A total of 94 animals were sampled.
  (Wildlife - 71 bats - 569 samples, 23 rodents - 194 samples)
- In November 2017– PERHILITAN Wildlife Disease Surveillance Program went to Temerloh to carry out wildlife sampling. A total of 1 animal was sampled. (Wildlife - 1 wild boar - 21 samples)

Sabah –

- 7 November 2017– Two confiscated pangolins were sampled at Lok kawi Wildlife Park and 20 samples were collected.

- November 2017–The new PREDICT Veterinarian completed all PREDICT, IACUC and CITI training and 1 WHU ranger received refreshment training for biosafety, setting up traps, animal handling and sampling.
- 18 -19 December 2017– 6 PREDICT rangers were trained for Collaborative Institutional Training Initiative (CITI) training, including the courses of Social and Behavioural Responsible Conduct of Research and Biomedical Research.
- October – December 2017 – Deep Forest Sampling – sampling done at 5 sampling sites (Telupid: Pristine 1, Pristine 2, Pristine 3, Disturbed 2 and 3). Total of 66 animals (11 bats, 54 rodents and 1 carnivore) were sampled and 595 samples were collected.

Summary of Laboratory Development/Testing for the Period 1st October 2017 to 31st December 2017:

Peninsular Malaysia –

- A total of 608 wildlife and livestock samples needed screening for 5 priority viral families. They consisted of 333 animals (236 bats, 26 rodents, 24 NHP, 32 carnivores, 4 birds, 11 ungulates).
- PCR products from screening 447 wildlife samples (257 animals: 214 bats, 19 rodents, 24 NHP) at NWFL for filo, flavi, paramyxo, influenza and corona.
- Extracted total nucleic acid from 57 remaining wildlife samples (29 Animals: 22 bats, 7 rodents). PCR for these samples will be run in next quarter.
- PCR products from screening 94 livestock samples (47 animals: 32 carnivores, 4 birds and 11 ungulates) at UPM FVM for filo, flavi, paramyxo, influenza and corona. Sequencing results pending.
- Extracted total nucleic acid from 10 livestock samples (5 animals: 1 bird, 4 carnivores) but have not been PCR-screened.
- Ongoing priority PCR screening of 188 livestock samples (94 animals: 24 carnivores, 4 NHPs, 1 rodent, 64 birds and 2 other mammals)
- 13 October 2017- Lab emergency drills/exercise (fire, man down, biological and chemical spills) with lab technicians and rangers at NWFL.

Sabah –

- A total of 372 wildlife samples needed screening for 5 priority viral families. They consisted of 189 animals (132 bats and 57 rodents).
- PCR products from screening 242 wildlife samples (123 animals: 119 bats, 4 rodents) at WHGFL for filo, flavi, paramyxo, influenza and corona. Results pending.
- Extracted total nucleic acid of remaining 130 samples (66 animals: 13 bats, 53 rodents). Priority PCR screening on-going.

Summary of Stakeholder Engagement and Partner Coordination for the Period 1st October 2017 to 31st December 2017:

Peninsular Malaysia –

- Regular discussions with NMRR, MREC and MoH regarding ethical approval for Orang Asli work.

- 9 October 2017 – PREDICT Country Coordinator and PREDICT Laboratory Manager met with the Deputy Director General DVS, Director of VRI and other senior DVS staff to discuss ongoing and expanding PREDICT work in Malaysia.
- 14 October 2017 – PREDICT Country Coordinator met with YB Datuk Seri Mah Su Keong, Minister of Plantation Industries and commodities and YB Datuk Dr Kalayan Sundram, Director Malaysian Palm Oil Council. PREDICT Country Coordinator briefed them on PREDICT and IDEEAL work and the important role of SWD WRU and WHU in this work. Minister agreed that Ministry of Plantation Industries and commodities will continue to provide financial support to MPOC to fund WRU and WHU.
- 19 October 2017 – PREDICT Country Coordinator met with Deputy Director General DVS, DVS veterinarian's based at PERHILITAN and senior PERHILITAN staff to discuss results from serological screening and training of vets.
- 24 October 2017 – PREDICT donated two photocopiers to the primary school at PosBalar, GuaMusang. As a result of this partnership, the school has ffered to share classrooms to be used for sampling efforts. This arrangement saves PREDICT money and directly benefits the Orang Asli children who attend the school.
- 2 November 2017 – John C. Schaefer III, International Project Manager, Cooperative Biological Engagement, Defense Threat Reduction Agency, Ms. Sona Ramesh and Ms. Sallamah Mohd Dalib Economic Officers from US Embassy visit PERHILITAN NWFL to see facility including the molecular diagnostic lab PREDICT helped establish and to learn more about the PREDICT and DTRA work.
- 7 November 2017 – PREDICT Country Coordinator met with Mr. Todd Hannah Environment, Science and Technology Officer, Ms. Sona Ramesh and Ms. Sallamah Mohd Dalib Economic Officers at US Embassy to update on PREDICT activities and Year 4 work plan.
- 21 November 2017 – PREDICT Country Coordinator gives talk "Promoting One Health & Conservation through Zoonotic Disease Surveillance: The PREDICT, DTRA & IDEEAL Projects in Malaysia" at PERHILITAN's 8th Seminar on Biodiversity.
- 27 November 2017 – PREDICT Country Coordinator met with Dr Khebir, Director NPHL to discuss changes to Orang Asli concurrent sampling protocol.
- 28 November 2017 – PREDICT Veterinarian, PREDICT Laboratory Manager and PREDICT Field Manager attended the Snakebite Envenoming Management course at the Faculty of Pharmacology, University Technology MARA (UiTM), Puncak Alam, Selangor.
- 29 November 2017 – PREDICT Country Coordinator met with USAID RDMA to brief on PREDICT progress and Year 4 work plan.
- 4 – 8 December 2017 - PREDICT Field Manager attended the International Conference on One Plan Approach Conservation Planning and Formosan Pangolin PHVA Workshop in Taipei Zoo, Taiwan. PREDICT Field Manager made member of IUCN Pangolin Species Survival Specialist Group.

Sabah –

- Over this reporting period PREDICT has conducted regular discussions with SSHD, MoH and NMRR regarding syndromic surveillance.
- 8 November 2017– Wildlife Health Unit team leader presented on PREDICT work at the Southeast Asia Wild Animal Rescue Network (WARN) conference in Hanoi, Vietnam.

- 13 – 16 November 2017 - The PREDICT Laboratory Manager attended the International workshop on molecular diagnosis for EEHV infection at Faculty of Veterinary Medicine, Kasetsart University, Thailand with Wildlife Rescue Unit veterinarian Laura Benedict as part of the effort to help Sabah Wildlife Department to establish EEHV surveillance for Sabah.
- 22 November 2017 – PREDICT Country Coordinator and PREDICT Lab with team from SSHD and QEH to discuss changes to protocol for Syndromic Surveillance.
- 23 November 2017 – PREDICT Country Coordinator met with Deputy Director SWD to discuss releasing results from last PREDICT result report.
- 5 December 2017 - A documentary titled "The Amazon of the East – Balancing the scales" focusing on the Deep Forest Project in Kinabatangan aired on the Animal Planet Chanel (South East Asia).
- 18 December 2017– WHGFL site assessment was done by an engineer from Asia Projects Office, US Army Corps of Engineers and the Environment, Science and Technology Officer from the US Embassy on the landslide and high-tension cables issues.

From: Elizabeth Leasure <ealeasure@UCDAVIS.EDU>
To: Amalhin Shek <ashek@usaid.gov>
Cc: Andrew <aclements@usaid.gov>, Predict inbox <predict@ucdavis.edu>, David John Wolking <djwolking@ucdavis.edu>, Jonna Mazet <jkmazet@ucdavis.edu>, PREDICTMGT <predictmgt@usaid.gov>
Subject: RE: FW: "Rescission plan" - impacts on USAID obligations?
Sent: Mon, 27 Aug 2018 16:30:02 +0000

That's great. Thanks!

Elizabeth Leasure
Financial Operations Manager
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530-754-9034 (office)
Skype: ealeasure

From: Amalhin Shek <ashek@usaid.gov>
Sent: Monday, August 27, 2018 9:28 AM
To: Elizabeth Leasure <ealeasure@UCDAVIS.EDU>
Cc: Andrew <aclements@usaid.gov>; Predict inbox <predict@ucdavis.edu>; David John Wolking <djwolking@ucdavis.edu>; Jonna Mazet <jkmazet@ucdavis.edu>; PREDICTMGT <predictmgt@usaid.gov>
Subject: Re: FW: "Rescission plan" - impacts on USAID obligations?

Hi Liz,

Thanks for sharing this. At this point we don't anticipate this impacting you, but will keep you posted as we hear more here.

Amalhin Shek | Budget & Communications Analyst
Bureau for Global Health, Office of Infectious Disease, Emerging Threats Division
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USAID-HECFAA, VP of Community Engagement

USAID **Contractor**
GHSI-III - Social Solutions International, Inc.

On Fri, Aug 24, 2018 at 12:38 PM Elizabeth Leasure <ealeasure@ucdavis.edu> wrote:

Hi Andrew and Amalhin. Came across this article and wondered if this is something that could potentially impact our Y5 obligations. Is this something we should be concerned about?

Thanks,
Liz

Elizabeth Leasure
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Skype: ealeasure

From: David J Wolking <djwolking@ucdavis.edu>
Sent: Friday, August 24, 2018 9:31 AM
To: Elizabeth Leasure <ealeasure@UCDAVIS.EDU>
Cc: predict@ucdavis.edu
Subject: "Rescission plan" - impacts on USAID obligations?

- Inside Development
- The future of US aid

White House 'rescission' plan throws aid community into uncharted waters

*By **Michael Igoe** // 24 August 2018*

WASHINGTON — Development advocates are bracing for an attempt by United States President Donald Trump's administration to rescind billions of dollars that Congress has already appropriated for foreign assistance programs.

Rumors about the "rescission package" have swirled around Washington, D.C., for more than a week, as U.S. development advocates have sought to piece together details of what the plan could include — and what options are available for them to fight against it. Devex spoke to multiple sources briefed on the rescission plan, who shared information from private conversations and off-the-record meetings, on condition of anonymity.

> **White House opens new front in war on US aid budget**
>
> The latest effort by the White House Office of Management and Budget to cut U.S. foreign assistance indicates that the Trump administration is tired of seeing its spending plans overturned by Congress.

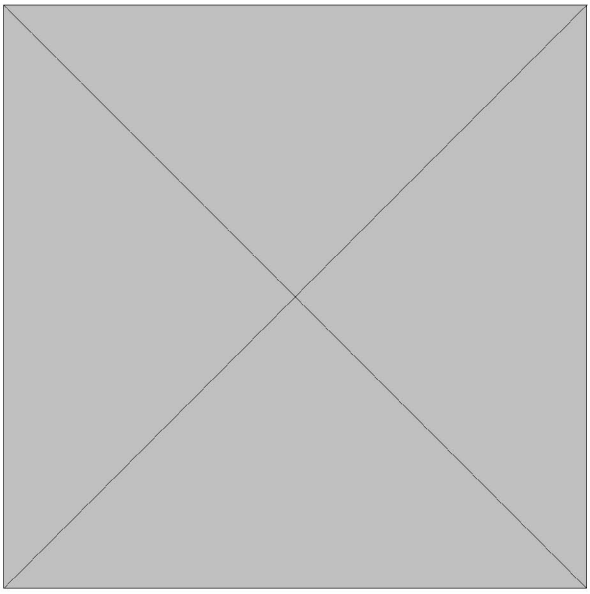
The Trump administration's latest effort to cut U.S. foreign aid has thrown global development supporters into the uncharted waters of a budget fight with no historical precedent. The plan, directed from the White House Office of Management and Budget, is expected to arrive early next week — likely on Aug. 28, according to multiple sources.

The rescission package would place a 45-day "freeze" on money in certain accounts that has not yet been obligated by the U.S. Department of State and the U.S. Agency for International Development. The move would be unprecedented because of its timing — just over a month before the end of fiscal year 2018 — and it would put lawmakers and foreign aid supporters in an ambiguous and alarming position. By the time the 45-day freeze lifted, the fiscal year would be over, and as a result the unspent money would go back to U.S. Treasury.

With little time to overturn the White House's effort — and a hazy list of options for Congress to

do so — development advocates see a real possibility that billions of dollars already designated for U.S. foreign assistance could disappear. Some of them remain confident that lawmakers will either find a way to defeat the White House's plan, or to convince the Trump administration that the political costs of going through with it would outweigh any political gains.

While this particular rescission package is only expected to target funding for the State Department and USAID, lawmakers worry that it could set a dangerous precedent for the White House to be able to ignore Congress' budget authority. Some lawmakers have questioned whether the move would even be legal.



The rescission package would aim to retract funds appropriated on a two-year basis in fiscal year 2017, as well as funds appropriated on a one-year basis in fiscal year 2018, according to people familiar with the plan. Both of those funding pools expire when the current fiscal year ends on Sept. 30.

Questions remain about exactly how much funding — and which accounts — the rescission package would affect.

The accounts that the White House wants to reclaim represent moving targets. As of last week, the OMB plan was believed to apply to $3.6 billion in assistance, but since then, USAID and the State Department have been obligating money quickly in the targeted accounts, and the total is now down to $2 billion, according to several sources updated on the accounts this week. Further changes in those numbers are expected before the rescission package arrives.

The largest pot of money targeted is the Economic Support Fund, an account managed by the State Department that provides assistance to countries where the U.S. has a strategic interest, sources said. USAID's Development Assistance account was previously believed to be vulnerable to

rescission, but staff briefed on the account told Devex it has now been completely obligated.

State Department funds that provide bilateral assistance to Europe, Eurasia, and Central Asia are also reportedly being targeted, as are State Department funds that support security sectors such as law enforcement, peacekeeping, and foreign military financing.

Contributions to multilateral organizations are also rumored to take a big hit under the White House plan, with all unobligated funding in the International Organizations and Programs accounts slated for rescission, sources said. That would likely include contributions to international peacekeeping organizations and United Nations agencies such as UNICEF.

Some development experts, who also spoke to Devex on condition of anonymity in order to speak freely, speculated that the White House may have chosen not to target global health and humanitarian accounts since they typically enjoy broad, bipartisan support, and seeking to cut them would likely give rise to more impassioned opposition.

The OMB's plan has forced some of the administration's development and diplomacy leaders into a difficult situation, and some of them are reportedly lobbying against their own administration's rescission effort, according to people briefed on the situation.

Both Secretary of State Mike Pompeo and United Nations Ambassador Nikki Haley are rumored to have voiced their opposition to President Trump's plan, while Vice President Mike Pence listened to lawmakers express their disapproval at a Republican policy lunch on Tuesday, according to people with knowledge of the meeting.

One Republican lobbyist shrugged off the suggestion that Pompeo has been an effective advocate for maintaining funding.

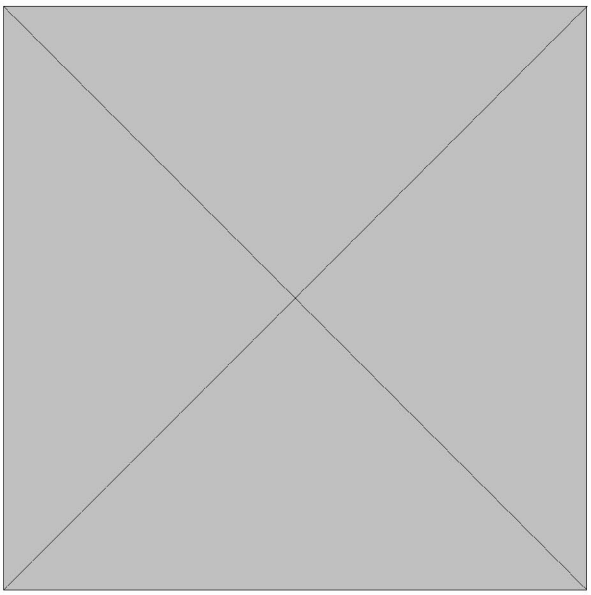
"If Pompeo was being really strong, we wouldn't even be having this discussion," the lobbyist said, adding, "I wouldn't want to give him too much credit."

USAID Administrator Mark Green faced repeated questions about the rescission package at a Center for International and Strategic Studies event on Monday. The USAID chief did not articulate any position on the issue, and suggested that he had little information about it.

“On the budget front, I really don't have much more that I can provide. Part of it is — I'm not attempting to duck — I just literally don't have more. I'd refer you to OMB quite frankly,” Green said.

Typically Congress can reject a rescission package, as the Senate did earlier this year. In this case, with the OMB’s directive expected to arrive so close to the end of the fiscal year, there are questions about the tools available to lawmakers to oppose it. While development advocates and congressional staffers are scrambling to identify options, one source involved in the effort said that “none of them are particularly attractive.”

The most straightforward course of action would be for either the House of Representatives or the Senate to call for a full floor vote to reject the rescission package, which at least some members believe they have the authority to do. With the House in recess, calling such a vote would fall to the Senate, a potential solution that would have to overcome both political and timing challenges. The Senate floor schedule is already packed, and leaders are unlikely to disrupt it.



A second option that some aid advocates have explored is extending the authority of the funds targeted for rescission into fiscal year 2019, so that they would not expire on Sept. 30. This would give the State Department and USAID additional time to obligate them.

While there is some debate around this option, supporters believe that extending the funds’ authority into 2019 would create another problem. If the funding authority is extended into 2019, the Congressional Budget Office may have to “score” the funding as though it were newly appropriated, and that would raise the 2019 budget above the spending caps agreed to in a two-year budget deal earlier this year.

A third option would be for lawmakers to sue the OMB through the U.S. Government

Accountability Office, though aid advocates worry about the lengthiness of this option and they remain uncertain about the funds' fate with a lawsuit pending.

Amid the uncertainty, U.S. aid budget experts are clear about two things: This additional layer of conflict will drive a further wedge between the Trump administration and the development community; and, as funding agencies rush to push money out the door against a backdrop of vanishing funds and a broken budget process, the effectiveness of development programs stands to suffer.

From: Tracey Goldstein <tgoldstein@ucdavis.edu>
Sent: Thu, 1 Aug 2019 12:44:16 -0700
Subject: Samples disposition summary for USAID
To: Jonna Mazet <jkmazet@ucdavis.edu>
Cc: Corina Grigorescu Monagin <cgmonagin@ucdavis.edu>, David Wolking <djwolking@ucdavis.edu>
PREDICT Sample Disposition Summary to USAID August 2019.docx

Hi Jonna,

Take a peak and see if the summary attached of the current status is along the lines of what you were looking for Alisa.

T

--
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

PREDICT Sample Disposition Summary as of July 30 2019

The ability of collaborating PREDICT laboratories to securely and appropriately store PREDICT samples beyond 30 September 2019 has been assessed. To date 21 laboratories in 16 countries have plans to securely store and appropriately maintain samples. Three laboratories from 3 countries have plans to transfer samples to appropriate secure laboratories before 30 September 2019. Further clarification about the ability to securely store and appropriately maintain samples beyond 30 September 2019 or to make a plan to transfer samples to appropriate secure laboratories before 30 September 2019 is still needed from 22 laboratories in 13 countries and is ongoing.

A summary is provided below by laboratory grouping and indicating sample numbers stored in each laboratory by taxa group.

I. Laboratories securely and appropriately storing samples beyond 30 September 2019
Bangladesh:
IEDCR: Total samples = 50,867, Human = 10,293, Wildlife = 37,908, Domestic/Livestock = 2,666
ICDDR,b: Total samples = 6,910, all wildlife

Cambodia
IPC: Total samples = 52,647, Human = 14,543, Wildlife = 22,131, Domestic/Livestock = 15,973

China
Wuhan Institute of Virology: Total samples = 11,051, Human = 3,000, Wildlife = 8,051
Institute of Microbiology, CAS: Total samples = 1,202, all wildlife

Indonesia
Eijkman Institute: Total samples = 4,718, all human
Institute Pertanian Bogor - IPB: Total samples = 19,468, all wildlife

Myanmar
LBVD: Total samples = 12,363, Wildlife = 10,761, Domestic/Livestock = 1,602

Thailand
Chulalongkorn University: Total samples = 35,700, Human = 9,269, Wildlife = 24,630, Domestic/Livestock = 1,801

Vietnam
NIHE: Total samples = 8,428, Human = 6,348, Wildlife = 2,080

Côte d'Ivoire
IPCI: Total samples = 7,479, Human = 4,770, Wildlife = 2,709

Egypt
National Research Center: Total samples = 6,750, Human = 1,460, Wildlife = 5,290

Ghana
Noguchi Laboratory: Total samples = 6,526, Human = 6,213, Wildlife = 313

Jordan
Jordan University of Science and Technology: Total samples = 15,148, Human = 7,588, Wildlife = 7,560

Kenya
Institute of Primate Research: Total samples = 12,328, Human = 2,913, Wildlife = 5,817, Camels = 3,598

Nepal
CMDN: Total samples = 25,2170, Human = 12,214, Wildlife = 12,956

Senegal
UCAD: Total samples = 4,484, all human
ISRA: Total samples = 3,742, all wildlife

Tanzania
Ifakara Health Institute: Total samples = 9,226, all human
Humans: 9,226
Sokoine University of Agriculture: Total samples = 23,272, Wildlife = 22,124, Domestic/Livestock = 1,148

Uganda
UVRI: Total samples = 23, 574, Human = 7,888, Wildlife = 14,855, Camels = 831

II. Laboratories transferring samples to appropriate laboratories by 30 September 2019
Ghana
Accra Vet Lab: Total samples = 8,632, all wildlife, To be transferred to Noguchi Laboratory

Guinea
Viral Hemorrhagic Fever Laboratory: Total samples = 15,128, Wildlife = 13,242, Domestic/Livestock = 1,886; Wildlife samples to be transferred to UC Davis, Domestic/Livestock samples to be destroyed

Uganda
Makerere University: Total samples = 2, 082, all wildlife; To be transferred to UVRI

III. Still need clarification or appropriate plans for samples storage by 30 September 2019
China
GDCDC: Total samples = 1,266, all human
Yunnan Institute: Unclear if PREDICT samples are stored at this location

Lao PDR
NAHL: Total samples = 11,416, all wildlife
NCLE: Total samples = 1,276, all human

Malaysia – Need appropriate laboratory contacts
Wildlife Health, Genetic and Forensic Lab, Sabah Wildlife Department, Sabah: Total samples = 22,558, all wildlife

Kota Kinabalu Public Health Lab, Sabah: Total samples = 104, all human
National Public Health Lab, Sungai Buloh: Total samples = 9804, all human
National Wildlife Forensic Lab, Kuala Lumpur: Total samples = 27,672, Wildlife = 22,328, Domestic/Livestock = 5,344

Mongolia
SCVL: Total samples = 6,000, all wild birds

Myanmar
DMR: Total samples = 6,358, all human

Vietnam
VNUA: Total samples = 2,404, all wildlife
RAHO6: Total samples = 8,632, all wildlife

Cameroon
CRESAR: Total samples = 45,446, Human = 4,890, Wildlife = 40,556

Côte d'Ivoire
LANADA: Total samples = 3,630, all domestic/livestock; Collected by FAO – unclear if they will maintain

DRC
INRB: Total samples = 22,148, Human = 2,743, Wildlife = 19,320, Domestic/Livestock = 85
MGVP laboratory in Goma**:** Plan is to transfer samples, Number to be verified, human and wildlife samples

Ethiopia
Addis Ababa University: Total samples = 2,123, all wildlife
Ethiopia Public Health Institute: Total samples = 1,805, all human

India
Sanjay Gandhi Institute: Total samples = 728, Human = 625, Wildlife = 103

Liberia
National Public Health Institute: Total samples = 14,484, all wildlife

Republic of Congo
INRB: Total samples = 10,389, all wildlife

Rwanda
Rwanda Agriculture Board Laboratory: Total samples = 11,240, Human = 3,953, Wildlife = 7,287

Sierra Leone
UNIMAK: Total samples = 34,893, Wildlife = 20,835, Domestic/Livestock = 14,058
Domestic/Livestock = 1,148

From: Andrew Clements <aclements@usaid.gov>
To: Jonna Mazet <jkmazet@ucdavis.edu>
CC: David J Wolking <djwolking@ucdavis.edu>;PREDICTMGT <predictmgt@usaid.gov>;Predict inbox <predict@ucdavis.edu>
Sent: 9/9/2019 10:14:01 AM
Subject: Re: country reports

Thanks.

Andrew 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
E-mail: aclements@usaid.gov

For more information on USAID's Emerging Pandemic Threats program, see: http://www.usaid.gov/ept2

On Mon, Sep 9, 2019 at 4:28 PM Jonna Mazet <jkmazet@ucdavis.edu> wrote:
Hi Andrew,
The final report ve3rsions are aimed at getting as close as we can to the fuller version, if we have the resources. They will definitely have the final country findings and analyses that were pending to the extend of our ability with the funding left on hand.
Best,
Jonna

On Mon, Sep 9, 2019 at 2:20 AM Andrew Clements <aclements@usaid.gov> wrote:
Thanks, David. Understood about which one is used before 9/30/19.

Which version will be included in the final report (when you have more time but not necessarily more money)?

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: aclements@usaid.gov

On Sep 6, 2019, at 11:34 PM, David J Wolking <djwolking@ucdavis.edu> wrote:

Hi Andrew,

Here's the explanation I shared last week when I posted these examples to the Team Drive.

There are two versions now but all with preliminary data: 1) a long form version that includes a little more content (e.g., the Ghana, Laos and Tanzania reports) and 2) an ultralight version that we are producing really quickly to be available for print at close-out meetings as a leave behind .

At this point, with countries closing out in the next few weeks, and available staff, time, and funding limitations, the ultralight versions of these reports (e.g., Uganda and Rwanda) are all we can produce before September 30, 2019.

David

On Fri, Sep 6, 2019 at 6:15 AM Andrew Clements <aclements@usaid.gov> wrote:
What I was hoping to do at some point was share one of these with missions so they could get a sense of what it will look like for their country. So I would need to know which one and if it's okay to share in its current state. Thanks!

Andrew 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
E-mail: aclements@usaid.gov

For more information on USAID's Emerging Pandemic Threats program, see: http://www.usaid.gov/ept2

On Fri, Sep 6, 2019 at 2:49 PM Andrew Clements <aclements@usaid.gov> wrote:
Hi David,

Was just looking at the 4 country reports that you have shared in the google drive. I noticed that the Ghana and Laos documents have much more detail that those for Rwanda and Uganda. Which or the two sets is representative of what the other countries will be receiving?

Thanks!

Andrew

Andrew 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
E-mail: aclements@usaid.gov

For more information on USAID's Emerging Pandemic Threats program, see: http://www.usaid.gov/ept2

From: Downey, Autumn <ADowney@nas.edu>
To: 'Jonna Mazet' <jkmazet@ucdavis.edu>;'David A Relman' <relman@stanford.edu>;'andersen@scripps.edu' <andersen@scripps.edu>;'trevor@bedford.io' <trevor@bedford.io>;'dgriffi6@jhu.edu'" <dgriffi6@jhu.edu>;'daszak@ecohealthalliance.org'" <daszak@ecohealthalliance.org>;'rbaric@email.unc.edu'" <rbaric@email.unc.edu>;Shore, Carolyn <CShore@nas.edu>;'andre@ecohealthalliance.org' <andre@ecohealthalliance.org>;'Mary Radford' <maradford@ucdavis.edu>;'antoinette_baric@med.unc.edu'" <antoinette_baric@med.unc.edu>;Brown, Lisa <LBrown@nas.edu>;Pope, Andrew <APope@nas.edu>
Sent: 4/22/2020 3:19:58 PM
Subject: HOLD - Viral Characteristics WG Discussion

Dear working group members,

We've narrowed the WG call to two possible dates and are sending a hold for both pending receipt of availability information from the remaining members. Since one of the options is tomorrow afternoon/evening, we'll confirm no later than tomorrow morning.

Best,
Autumn and Carolyn

From:	David J Wolking <djwolking@ucdavis.edu>
To:	Prof. Jonna Mazet <jkmazet@ucdavis.edu>;ohi-covid-coms Sympa List <ohi-covid-coms@ucdavis.edu>
Sent:	7/21/2020 1:21:49 PM
Subject:	Fwd: Confidential: Policy Forum that acknowledges and highlights PREDICT/USAID EPT

FYI - this is under embargo until Friday but sharing in case it becomes news later this week; PREDICT acknowledged by Peter and both PREDICT and GVP heavily featured here. Could generate some media attention..

David

---------- Forwarded message ---------
From: **Peter Daszak** <daszak@ecohealthalliance.org>
Date: Tue, Jul 21, 2020 at 12:26 PM
Subject: Confidential: Policy Forum that acknowledges and highlights PREDICT/USAID EPT
To: Andrew Clements <aclements@usaid.gov>
Cc: Chris Johnson <ckjohnson@ucdavis.edu>, William B. Karesh <karesh@ecohealthalliance.org>, Alisa Pereira <apereira@usaid.gov>, PREDICTMGT <predictmgt@usaid.gov>, Amalhin Shek <ashek@usaid.gov>, David John Wolking <djwolking@ucdavis.edu>

Hi All,

Here's the Policy Forum coming out in Science this week. It focuses on how efforts to reduce deforestation and the wildlife trade would be costly, but have a substantial return on investment in reducing pandemic risk, sequestering carbon and saving biodiversity. The cost/benefit numbers are necessarily 'ballpark', but it's great because it shows the value of the PREDICT/EPT program. It also has PREDICT as an acknowledgement.

This is embargoed until Friday, but reporters are writing articles on it now. If you are talking with reporters and they get onto the subject of preventing pandemics, please let them know about the paper. Please don't share this version – it's not the final one and some of the numbers are not lined up yet with the Supplementary Information. If they want a copy of the paper, Robert Kessler (cc'd) will be able to get them one and let them know full details of the embargo.

Cheers,

Peter

Peter Daszak

President

EcoHealth Alliance

520 Eighth Avenue, Suite 1200

New York, NY 10018-6507

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: Peter Daszak
Sent: Tuesday, June 30, 2020 8:33 PM
To: William B. Karesh <karesh@ecohealthalliance.org>; Alisa Pereira <apereira@usaid.gov>
Cc: Chris Johnson <ckjohnson@ucdavis.edu>; Jonna Mazet <jkmazet@ucdavis.edu>; Tracey Goldstein <tgoldstein@ucdavis.edu>; Andrew Clements <aclements@usaid.gov>; PREDICTMGT <predictmgt@usaid.gov>; predict Sympa List <predict@ucdavis.edu>; David John Wolking <djwolking@ucdavis.edu>
Subject: RE: Predict question: Scientists Say New Strain of Swine Flu Virus Is Spreading to Humans in China
Importance: High

Adding to Billy's comments, also attaching a clean pdf. This was identified through the swine influenza surveillance China set up a few yrs ago (2011) through CAS, where they do standardized active surveillance on pig farms across China. They've found other H1N1 strains before this one in pigs, with some evidence of people being infected by them – just 5 cases (in the discussion of this paper).

This strain is potentially more serious because it's novel, it can be transmitted through aerosol in ferrets, it can infect human airway cells in the lab, and there's serological evidence that people working with pigs have been infected – they've got antibodies in something like 10% of a n=300 group, but 20+% in young adults aged 18-35yrs. No evidence in general population, all suggesting it hasn't yet achieved community spread, but has pandemic potential.

Definitely see the influence of PREDICT on this paper – it's the same strategy we've been working on of identifying potentially-pandemic strains in animals before they emerge. It's exactly what we've done repeatedly with bat-origin CoVs in China, and some of the same people involved in that work are involved here, incl. George Gao.

Cheers,

Peter

Peter Daszak

President

EcoHealth Alliance

520 Eighth Avenue, Suite 1200

New York, NY 10018-6507

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: William B. Karesh <karesh@ecohealthalliance.org>
Sent: Tuesday, June 30, 2020 11:19 AM
To: Alisa Pereira <apereira@usaid.gov>
Cc: Chris Johnson <ckjohnson@ucdavis.edu>; Jonna Mazet <jkmazet@ucdavis.edu>; Tracey Goldstein <tgoldstein@ucdavis.edu>; Andrew Clements <aclements@usaid.gov>; PREDICTMGT <predictmgt@usaid.gov>; predict Sympa List <predict@ucdavis.edu>; David John Wolking <djwolking@ucdavis.edu>; Peter Daszak <daszak@ecohealthalliance.org>
Subject: Re: Predict question: Scientists Say New Strain of Swine Flu Virus Is Spreading to Humans in China

It's a good paper and reviewed by Ian Brown so that adds even more support since he's one of the world's real experts on this subject. Paper attached here FYI - embargoed until today.

Of course, we are not working in China with any USG funds or support, and this was not PREDICT work. FAO was to do the EPT livestock work in China and our human samples were not used in this study.

Mindy did an interview on it yesterday also: https://www.inverse.com/science/scientists-identify-a-swine-flu-virus-with-pandemic-potential

I'll let Peter fill you in if he has any additional insights. He in regular contact with George Gao.

BK

--
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

POLICY FORUM

ECOLOGY AND ECONOMICS: COVID-19

Ecology and economics for pandemic prevention

Investments to prevent tropical deforestation and to limit wildlife trade will protect against future zoonosis outbreaks

By **Andrew P. Dobson[1], Stuart L. Pimm[2], Lee Hannah[3], Les Kaufman[4], Jorge A. Ahumada[3], Amy W. Ando[5], Aaron Bernstein[6], Jonah Busch[7], Peter Daszak[8], Jens Engelmann[9], Margaret F. Kinnaird[10], Binbin V. Li[11], Ted Loch-Temzelides[12], Thomas Lovejoy[13], Katarzyna Nowak[14], Patrick R. Roehrdanz[3], Mariana M. Vale[15]**

For a century, two new viruses per year have spilled from their natural hosts into humans (*1*). The MERS, SARS, and 2009 H1N1 epidemics, and the HIV and coronavirus disease 2019 (COVID-19) pandemics, testify to their damage. Zoonotic viruses infect people directly most often when they handle live primates, bats, and other wildlife (or their meat) or indirectly from farm animals such as chickens and pigs. The risks are higher than ever (*2*, *3*) as increasingly intimate associations between humans and wildlife disease reservoirs accelerate the potential for viruses to spread globally. Here, we assess the cost of monitoring and preventing disease spillover driven by the unprecedented loss and fragmentation of tropical forests and by the burgeoning wildlife trade. Currently, we invest relatively little toward preventing deforestation and regulating wildlife trade, despite well-researched plans that demonstrate a high return on their investment in limiting zoonoses and conferring many other benefits. As public funding in response to COVID-19 continues to rise, our analysis suggests that the associated costs of these preventive efforts would be substantially less than the economic and mortality costs of responding to these pathogens once they have emerged.

REDUCING DEFORESTATION

Tropical forest edges are a major launchpad for novel human viruses. Edges arise as humans build roads or clear forests for timber production and agriculture. Humans and their livestock are more likely to contact wildlife when more than 25% of the original forest cover is lost (*4*), and such contacts determine the risk of disease transmission. Pathogen transmission depends on the contact rate, the abundance of susceptible humans and livestock, and the abundance of infected wild hosts. Contact rates vary with the perimeter (the length of the forest edge) between forest and nonforest. Deforestation tends to create checkerboards, whereupon we see a maximum perimeter at a 50% level of forest conversion. Thereafter, the abundance of domestic animals and humans rapidly exceeds that of wild animals, so although we expect transmission to decline, the magnitude of any resultant outbreak is higher (*4*). Habitat fragmentation complicates this because it increases the length of the perimeter. Roadbuilding, mining and logging camps, expansion of urban centers and settlements, migration and war, and livestock and crop monocultures have led to increasing virus spillovers. Hunting, transport, farming, and trade of wildlife for food, pets, and traditional medicine compound these routes of transmission and closely track deforestation. For example, bats are the probable reservoirs of Ebola, Nipah, SARS, and the virus behind COVID-19. Fruit bats (Pteropodidae in the Old World, the genus *Artibeus* in the New World) are more likely to feed near human settlements when their forest habitats are disturbed; this has been a key factor in viral emergence in West Africa, Malaysia, Bangladesh, and Australia (*5*–*7*).

The clear link between deforestation and virus emergence suggests that a major effort to retain intact forest cover would have a large return on investment even if its only benefit was to reduce virus emergence events. The largest-scale example of directed deforestation reduction comes from Brazil between 2005 and 2012. Deforestation in the Amazon dropped by 70%, yet production of the region's dominant soy crop still increased (*8*). International contributions, complemented by an Amazon Fund, of about $1 billion supported land-use zoning, V 6502market and credit restrictions, and state-of-the-science satellite monitoring. Brazil's program reduced forest fragmentation and edge at a lower cost than could have been achieved by carbon-pricing approaches (*9*).

Several estimates of the effectiveness and cost of strategies to reduce tropical deforestation are available (*8*, *9*). At an annual cost of $9.6 billion, direct forest-protection payments to outcompete deforestation economically could achieve a 40% reduction in areas at highest risk for virus spillover [see supplementary materials (SM)]. Multiple payment-for-ecosystem-services programs demonstrate the effectiveness of this approach. At the low end, widespread adoption of the earlier Brazil policy model could achieve the same reduction for only $1.5 billion annually by removing subsidies that favor deforestation, restricting private land clearing, and supporting territorial rights of indigenous peoples. All require national motivation and political will. Strong public support for similar deforestation-prevention policies may emerge in other countries recovering from COVID-19's devastation.

WILDLIFE TRADE SPILLOVER

Global demand for wildlife causes people to enter forests to collect wildlife for sale in markets in urban and rural areas. In cities, where people have diverse options for protein, bushmeat is a luxury bought to show status, and occasionally for cultural reasons. COVID-19 is the huge price society now pays for such encounters with wild species.

Wildlife markets and the legal and illegal wildlife trade bring live and dead wild animals into contact with hunters, traders, consumers, and all those involved in this commerce. Trade follows global consumer demand. The United States is one of the biggest global importers of wildlife, including for the massive exotic pet industry (*10*). The transit conditions, lack of health screening at import, and warehouses that store animals before and after import are similar to live animal markets, all conducive to spreading diseases.

Some countries have wildlife farming industries intended to prevent overhunting of wild species while meeting market demands for protein and appealing to cultural traditions. In China, wildlife farming is a ~$20 billion industry employing some 15 million people (*11*). With the February 2020 announcement by the Standing Committee of the National People's Congress of a ban on wildlife consumption for food and related trade in China, there are ongoing discussions on phasing out this industry. The justification is that

See supplementary materials for authors' affiliations.
Email: dobber@princeton.edu, stuartpimm@me.com

it creates risks for disease emergence and that the health and safety regulations associated with farming wild animals are often insufficient. Laws to ban the national and international trade of high-risk disease reservoir species, and the will to sustain their enforcement, are necessary and precautionary steps to prevent zoonotic disease. Regulations must keep primates, bats, pangolins, civets, and rodents out of markets.

International conventions such as the Convention on International Trade in Endangered Species of Fauna and Flora (CITES) deal with only a part of the problem. They, regional networks, and national agencies monitoring wildlife trade and enforcing regulations are severely underfunded. Regional wildlife enforcement networks (WENs) could be strengthened to form part of an effective response frontier to future pandemic prevention. The annual budget of one WEN, hosted by the Association for Southeast Asian Nations, is $30,000 (see SM). CITES's annual budget is a mere $6 million. Its secretariat has recently stated that zoonotic diseases are outside of CITES's mandate; they are certainly outside its current budget. Helping to prevent the next outbreak might include raising WENs' budgets for regional responses while at the same time developing globally coordinated protocols to increase the WENs' capacity in wildlife health screening. Although there is no global agency with a remit to conduct surveillance on the wildlife trade, we estimated the costs of such an effort by considering the annual operating budget of the World Organization for Animal Health (OIE), which has a remit to assess disease risk in livestock trade without conducting testing. We then added costs of large-scale disease surveillance in wildlife, scaled to the global volume of wildlife trade (see SM).

Restricting access to wildlife for food and other uses must consider indigenous peoples and those in remote communities for whom wildlife provides essential protein. In some parts of the world, reliance on migratory wildlife such as caribou and salmon motivates stewardship of large expanses of habitat. Although the right to traditional diets should be upheld, people can nonetheless be at risk from harvesting wildlife. These are food security issues that governments and development agencies should confront. Where needed, they must include education and awareness on animal handling, sanitation, and disease transmission as well as sustainable wildlife management and support to develop village-level alternative foods. Legal hunting and marketing of wildlife that meets basic nutritional requirements sustainably can be regulated to reduce the risk of emerging pandemics. Over time, culturally sensitive measures could ensure indigenous people's access to healthy diets and reduce pandemic risks.

Summary of prevention costs, benefits, and break-even probability change

ITEM	VALUES (2020 $)
Expenditures on preventive measures	
Annual funding for monitoring wildlife trade (CITES+)	$250–$750 M
Annual cost of programs to reduce spillovers	$120–$340 M
Annual cost of programs for early detection and control	$217–$279 M
Annual cost of programs to reduce spillover via livestock	$476–$852 M
Annual cost of reducing deforestation by half	$1.53–$9.59 B
Annual cost of ending wild meat trade in China	$19.4 B
TOTAL GROSS PREVENTION COSTS (*C*)	**$22.2–$30.7 B**
Ancillary benefit of prevention	
Social cost of carbon	$36.5/tonne
Annual CO_2 emissions reduced from less deforestation	118 Mt
Ancillary benefits from reduction in CO_2 emissions	$4.31 B
TOTAL PREVENTION COSTS NET OF CARBON BENEFITS (*C*)	**$17.7–$26.9 B**
Damages from COVID-19	
Lost GDP in world from COVID-19	$5.6 T
Value of a statistical life (*V*) adjusted for COVID-19 mortality structure	$5.34 M or $10.0 M
Total COVID-19 world mortality (Q_D) forecast by 28 July 2020, 50th percentile with 95% error bounds	590,643 [473,209, 1,019,078]
Value of deaths in world from COVID-19 = $Q_D \times V$	
Lowest ($3.56 M × 2.5th percentile mortality forecast)	$2.5 T
Middle ($10 M × 50th percentile mortality forecast)	$5.9 T
Highest ($10 M × 97.5th percentile mortality forecast)	$10.2 T
TOTAL DISEASE DAMAGES (*D*):	
Lowest ($3.56 M × 2.5th percentile mortality forecast)	**$8.1 T**
Middle ($10 M × 50th percentile mortality forecast)	**$11.5 T**
Highest ($10 M × 97.5th percentile mortality forecast)	**$15.8 T**

The break-even change in annual probability of pandemic satisfies $C = \Delta P \times D$, where P_0 = benchmark probability of pandemic; P_1 = probability of pandemic with prevention efforts in place; $\Delta P = P_0 - P_1$; and $\%\Delta P = (\Delta P / P_0) \times 100$.

If $P_0 = 0.01$, C = $30.7 B, and D = $11.5 T (most likely scenario, ignoring ancillary benefits of CO_2 reductions), prevention results in net benefits if it decreases P by 26.7% to $P_1 = 0.00733$. Using other values of C, D, and P results in $\%\Delta P$ ranging from 11.8% to 75.7%; only one scenario has a $\%\Delta P$ exceeding 50%. See supplementary materials.

EARLY DETECTION AND CONTROL

There is substantial underreporting of exposure to zoonotic diseases. Correcting this would provide major opportunities for prevention. Nipah virus was discovered in 1998, originating in fruit bats, and caused a massive outbreak of respiratory illness in pigs and lethal encephalitis in people in Malaysia (*6*). Sentinel surveillance in Bangladesh hospitals revealed multiple annual case clusters and outbreaks with an average case fatality rate of 70%.

Similarly, SARS and COVID-19 emerged as outbreaks of respiratory disease in Guangdong and Wuhan, China, respectively. Serological surveys of people in rural Yunnan province showed that 3% had antibodies to similar virus species from their principal reservoir, horseshoe bats (*Rhinolophus* spp.) (*12*).

To quantify and reduce the risk of spillover of pathogens requires viral discovery in wildlife and testing of human and livestock populations in regions of high disease emergence risk. For example, the Wellcome Trust VIZIONS program tested wildlife, humans, and livestock for known pathogens in rural Vietnam. The U.S. Agency for International Development (USAID) PREDICT project analyzed the spillover of viruses in people with high wildlife contact in 31 countries. PREDICT included community education programs to raise awareness of zoonotic risk and reduce contact with wildlife. It worked to prevent spillover through the identification of high-risk behaviors and used serology surveys to examine seasonal patterns of risk. Interventions included the use of bamboo skirts to reduce Nipah virus contamination of palm sap, increased biosecurity at livestock farms to reduce wildlife-livestock-human contact, promotion of handwashing, and wearing of personal protective equipment when in close contact with wildlife. It reduced the capacity of wildlife to shed virus at interfaces by closing high-risk bat caves.

Costs of measures to prevent spillover vary. USAID PREDICT spent $200 million over 10 years. This cost compares favorably with the $1.2 billion for the Global Virome

Project, a 10-year project designed to identify 70% of the unknown potentially zoonotic viruses in wildlife globally. Although we have proof of concept for the discovery of disease with potential for emergence, for the identification of active spillover, and for programs that reduce risk, research is needed to quantify the return on investment for these programs. Pilot programs should prioritize indicators that allow better assessment of the costs and benefits of risk reduction (see SM).

After spillover, a second critical window of opportunity is the prevention of larger outbreaks (*2*). Early cases of HIV/AIDS, hantavirus pulmonary syndrome, Nipah virus, SARS, and COVID-19 went undetected for weeks, months, or years (HIV) before pathogen identification. Lags in identification have decreased, but this varies geographically. In lower-income countries, large outbreaks with substantial mortality often go undiagnosed, particularly when symptoms mimic those of other known diseases. Pilot projects are under way in clinics in many rural regions to identify the etiology of cases with similar symptoms (syndromic surveillance). For example, a pilot project costing $200,000 per year for syndromic surveillance for Nipah virus in Bangladesh hospitals resulted in a factor of 3 increase in the detection of spillover events (*13*). The U.S. National Institute of Allergy and Infectious Diseases is launching a series of Centers for Research in Emerging Infectious Diseases. Contracts for this work are expected at $1.5 million per year, focusing on specific high-risk viral zoonoses in emerging disease hotspots. Detection and control programs targeting outbreaks in their early stages would result in considerable savings by reducing morbidity and mortality. A priority is to identify indicators of risk reduction as pilot programs roll out and to calculate the costs, cost savings, and benefits of expanding them.

FARMED ANIMAL SPILLOVER

Livestock are critical reservoirs and links in emergent diseases. H5N1 influenza came across the human-wildlife interface (wild bird → poultry → human transmission chain), as did H1N1 influenza (bird → pig → human). Many livestock-linked outbreaks have reached the cusp of pandemic emergence, such as Nipah virus (fruit bat → pig → human) and swine acute diarrhea syndrome coronavirus (bat → pig) (*14*). These links are well recognized and are the focus of pandemic prevention packages proposed by the U.S. Congress (H.R. 3771). There are well-researched veterinary health plans such as the World Bank's One World One Health farm biosecurity intervention program, designed to reduce H5N1 influenza risk. With costs in the tens of billions of dollars, proposals dealing with livestock's roles in pandemics are among the most advanced and ambitious of those being seriously considered. We have known about these risks longer (e.g., influenza) and can control farm biosecurity more easily than wildlife contact in trade or at forest edges.

CONCLUSIONS

The actions we outline can help to prevent future zoonotic pandemics before they start. Monitoring alone would realize substantial cost savings, even in the context of pandemic outbreaks much less severe than COVID-19 (*14*). The gross estimated costs of the actions we propose total $22 to $31 billion per year (see the table). Reduced deforestation has the ancillary benefit of around $4 billion per year in social benefits from reduced greenhouse gas emissions, so net prevention costs range from $18 to $27 billion per year. In comparison, COVID-19 has shown us the immense potential cost of a pandemic. The world may lose at least $5 trillion in GDP in 2020, and the willingness to pay for the lives lost constitutes many additional trillions (see SM). These costs exclude the rising tally of morbidity, deaths from other causes due to disrupted medical systems, and the loss to society of foregone activities during protracted periods of social distancing.

To justify the costs of prevention, a year's worth of these preventive strategies would only need to reduce the likelihood of another pandemic like COVID-19 in the next year by about 27% below baseline probability in the most likely scenario, even ignoring the ancillary benefits of carbon sequestration. We explored eight alternative scenarios with varied assumptions drawn from the highest and lowest values of both prevention costs and pandemic damages, and assuming that extreme pandemics occur either once every 100 years or once every 200 years. In all scenarios but one, prevention need only reduce the probability of a pandemic by less than half, and in one case the break-even percent probability reduction is as low as 12% (see SM). We estimate the present value of prevention costs for 10 years to be only about 2% of the costs of the COVID-19 pandemic.

We recognize that we have provided no more than a sketch of the key components of an economically feasible set of ecological pandemic prevention strategies. Limits on the availability of information limit our ability to conduct a more exhaustive analysis. Instead, we tally readily available information to evaluate how likely it is that an investment of the costs of pandemic prevention would yield positive net benefits to the world. Our calculations are conservative in the direction of making it hard to find that prevention is likely to be worthwhile—and yet that is our finding. Future studies could narrow uncertainties in the costs and efficacy of those strategies and pinpoint the most cost-effective suite of actions. A full cost-benefit analysis of pandemic prevention could track the flows of prevention costs over time, allow for intertemporal dependences, and model the pandemics prevented as products of a distribution of disease events that are not all as severe as COVID-19. Our findings make clear that this research effort is warranted, because the net benefits of stopping pandemics before they start could be enormous.

We recognize that as the world emerges from the COVID-19 pandemic, economic priorities may shift to deal with soaring demands from unemployment, chronic diseases, bankruptcies, and severe financial hardship of public institutions. Nonetheless, there is substantial evidence that the rate of emergence of novel diseases is increasing (*2*, *3*) and that their economic impacts are also increasing. Postponing a global strategy to reduce pandemic risk would lead to continued soaring costs. Given the barrage of costly emerging diseases in the past 20 years, we urge that stimulus and other recovery funding include the strategies we have laid out to reduce pandemic risk. Society must strive to avoid some of the impacts of future pandemics. ■

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SUPPLEMENTARY MATERIALS

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