now that Trump is doing so well in the GOP primaries. He got most of the states on "Super Tuesday".

Did TV interviews for CNN International and PBS – WNET – New York

March 3, 2016 – Tom Frieden and I briefed (together with Ariel Pablos-Mendez) and Holly Wong (HSS) the Diplomatic Corps in the Burns Auditorium of the State Department on Zika. Also present were Heather Higginbottom (Deputy Sec of State for Management and Resources), Deputy Assist. Sec Roberta Jacobson and Deputy Assist Sec. Judith Garber.

Also, had our internal scientific review for the Vedolizumab protocol that we hope to start soon.

Did long TV interview for BBC The World

March 4, 2016 – The LEAP – ON study came out in NEJM (Peanut consumption with 12 month lag showing tolerance is not broken) as did the Cohort Study of Zika from Brazil indicating that Zika is truly the causative factor for congenital abnormalities (even though it was a preliminary study). It is the first really cohort study.

As a result, much press – NPR; BBC radio; Washington Post; USA Today; The Guardian; New York Times;

March 5, 2016 – Did NBC Today Show on Zika

March 6, 2016 – Gave keynote address to the American Academy of Dermatology at the DC Convention Center. 18,000 people at the meeting. About 10,000 at the talk. Spoke on Ending the HIV/AIDS Pandemic. Many people were lined up waiting to have their picture taken with me. I still cannot fully grasp how people look upon me as a true icon. I believe that it is not only my consistent accomplishments, but importantly because I have been doing it for so long.

March 7, 2016 – Had breakfast with Greg Simon (formerly of VP Gore's staff) who has been asked by VP Biden to coordinate from the White House the President's "Moonshot" for Cancer. He wanted to get my advice on issues as well as a feel for the response of the community to this. I explained to him that there was concern about earmarks encroaching on the R01 pool. He understand. I told him that the NIH needs to grow about 6-7% per year to double every 10 years.

Spoke with Amy Pope about a crazy situation where USAMRIID did an aerosolized challenge of Zika in NHPs and showed that the VSV vaccine did not protect (no surprise). However, they showed that although the 2 control animals died and 16 of 20 vaccinated animals died, there was more inflammation in the lungs of the vaccinated animals – implying that vaccination is bad. The US Embassy and the Liberian and Guinea and Sierra Leone officials are going batshit because we are planning to do

vaccine studies there and use the VSV as ring vaccine if other outbreaks occur. What idiots those guys at USAMRIID are. This should have been a classified experiment that never should have been done in the first place. Now I have to speak with the NSC from the SKIF tomorrow to pick up the doo-doo and explain why this is an irrelevant experiment.

March 8, 2016 - More media on Zika – BBC World News Radio and BBC Domestic (UK) Radio

Newt Gingrich wants to write an OpEd to support the pasing of the Zika supplement and has asked me to help him write it. My response from today is given below:

Newt:

What do we need to be doing?

The U.S. Government response to the Zika problem is focused at HHS with CDC taking the public health lead and NIH taking the biomedical research lead. This is a very serious public health problem that centers on pregnant women. Every week, the data are becoming more and more convincing that there is a truly causal relationship between Zika infection in a pregnant woman and congenital abnormalities and other adverse outcomes of pregnancy. A recent paper that came out online from the *New England Journal of Medicine* on March 5 (last Friday) showed the most powerful proof of causal link with 29% of Zika infected pregnant women showing fetal abnormalities on Doppler Ultrasound compared to 0% in the pregnant women not infected with Zika. This a disturbingly high attack rate. Now that we know that the virus can be transmitted by sexual contact from man to women, the threat broadens. Also, transmission can occur through the blood supply. Although it is unlikely that we will have a generalized outbreak in the USA, the threat of local outbreaks is real. We have seen this with dengue in Florida and Texas and Chikungunya in Florida. Clearly, we need a robust response to the outbreak. We need to understand the disease better with natural history studies and studies on pathogenesis. We need better diagnostics and importantly, we need a vaccine. I will start a phase 1 vaccine trial with one of several candidates at the end of the summer-early fall of 2016. I will start that by moving money from other important non-Zika projects. I will not be able to plan for the larger Phase 2 trial in 2017 without the supplement money. I need the money very soon if I am going to properly plan for that larger study.

What should the Congress do?

The POTUS has asked for a FY2016 supplement of $1.8 billion. Most of that would go to CDC. However, the NIH would be getting $130 million, which we definitely need to implement the essential research agenda. The GOP in both the Senate and House are saying that HHS should use unexpended balances from the Ebola supplement to pay for the Zika activities. We received $238 million for Ebola and now we only have less than $10 million, with more follow-up studies to be performed. Bottom line is that we do not have any Ebola money left. The CDC and USAID do have some unspent money; however, they

definitely need it to continue their Ebola surveillance, response, and infrastructure building in West Africa.

The Congress needs to pass the Zika supplement or we cannot adequately respond to this serious public health challenge.

I hope that this is helpful. It goes without saying, but I will say it anyway. I cannot be quoted. I hope that you understand. Thanks for your willingness to help. We really appreciate it.

Best regards,
Tony

March 9, 2016 – Zika frenzy continues. Had teleconference in the SCIF with WH, CIA, NIA, DoD HHS regarding an experiment that the USAMRIID did that challenged NHPs with aerosolized Ebola to see if the VSV vaccine protected. Obviously, it did not. Stupid experiment. However, they also found in the 2 control animals (they had 2 controls and 22 vaccinated), even though they died, that they did NOT have inflammation in the lung. However, the vaccinated animals had necrosis, inflammation and fibrin in the lungs.

This should have been a classified experiment. The foolish DOD people send the data to the FDA and then circulated as FYI to various embassies including those in West Africa where we are about to engage on a much larger DSD vaccine trial for Ebola. The embassies in West Africa (Guinea, Liberia, Sierra Leone) as you might expect went bonkers since it looks like we're going to vaccinated people with the dangers vaccine. I believe that the inflammation is something that is obviously expected. As it turns out, the NIAID people in our bio defense program rely on the Department of Defense to conduct bioterror related experiments using a variety of Ebola vaccines to determine their efficacy against aerosolized challenge with people. The DOD has never considered such experiments to be classified. That is a big mistake. Nonetheless, NIAID people in DMID relied on the DOD experience and went along with them. The DOD has the facility at USAMRIID to conduct the aerosolized experiments. In fact, they have previously published these experiments, again, which I think was a mistake, since I believe that they should have been classified since they could indicate a vulnerability. During the course of those experiments, the DOD noticed that the animals that were vaccinated had more inflammation in the long then those who were unvaccinated even though almost all of the aerosole-challenged animals died. The current experiments were done to find out if this was a real phenomenon and if it was relevant. Again, I believe all of this is important for bio defense, but has little to do with naturally emerging Ebola outbreaks. Nonetheless, the idea that the vaccine can do harm is now causing people a great deal of concern.

March 10, 2016 - did WTOP radio on Zika. Also went for my second acupuncture treatment by Dr.Gang Peng at the clinical Center for my low back pain. I participated with Tom Frieden on a Zika telebriefing that involved more than 260 reporters. The tele-briefing went very well, and I was all over the newspapers including my picture with Tom in the Washington Post tomorrow, March 11.

From: "Fauci, Anthony (NIH/NIAID) [E]" </O=NIH/OU=NIHEXCHANGE/CN=NIAID/CN=AFAUCI>
To: "Lane, Cliff (NIH/NIAID) [E]" [redacted]@niaid.nih.gov>
Subject: RE: Hello from France
Date: Thu, 10 Mar 2016 06:13:36 -0500
Importance: Normal

Yes. We need to talk. When the DoD people presented the data and the NSC White House people asked them who funded the study, they said that they did together with NIAID!!!! No one followed up on that, but I almost fell off my chair

From: Lane, Cliff (NIH/NIAID) [E]
Sent: Wednesday, March 09, 2016 11:41 PM
To: Fauci, Anthony (NIH/NIAID) [E]
Subject: Re: Hello from France
I am guessing the NSC meeting on Ebola vaccine.

On Mar 10, 2016, at 1:29 AM, Fauci, Anthony (NIH/NIAID) [E] <AFAUCI@niaid.nih.gov> wrote:

What call is he talking about?

From: Michael, Nelson
Sent: Wednesday, March 09, 2016 7:11 PM
To: Fauci, Anthony (NIH/NIAID) [E]
Subject: Hello from France
Had to miss the VTC as I am at a dengue vaccine correlates meeting along with Peter Gilbert to impart our HIV vaccine wisdom to this crowd. Julie Ake, my #2 and a brilliant ID doc, just gave me the download from the call. You, Cliff, Julie and I are of very like mind on this. NLM

From: "Lane, Cliff (NIH/NIAID) [E]" [redacted]@niaid.nih.gov>
To: "Fauci, Anthony (NIH/NIAID) [E]" <AFAUCI@niaid.nih.gov>
Subject: Re: Hello from France
Date: Thu, 10 Mar 2016 17:30:55 -0500
Importance: Normal

Just landed in San Francisco. Should be able to call in about 30 minutes.

On Mar 10, 2016, at 3:19 AM, Fauci, Anthony (NIH/NIAID) [E] <AFAUCI@niaid.nih.gov> wrote:

> Is there any point on your lengthy trip that we can talk by phone? I will fill you in on the entire meeting. The DoD folks said that they wanted to publish the data. I said that I thought that it should be classified and the NSC people blew them out of the water and said that they agreed with me.

From: "Ford, Andrew (NIH/NIAID) [E]" [redacted]@nih.gov>
To: "Glowinski, Irene (NIH/NIAID) [E]" [redacted]@niaid.nih.gov>, NIAID BUGS [redacted]@niaid.nih.gov>
Subject: RE: [Non-DoD Source] RE: reaching out to FANG co-chairs for guidance (UNCLASSIFIED)
Date: Thu, 10 Mar 2016 11:13:02 -0500
Importance: Normal

We will.

Andrew Q. Ford, Ph.D.
Office of Scientific Coordination and Program Operations
Division of Microbiology and Infectious Diseases
NIAID/NIH/DHHS
[redacted]
Rockville, MD 20892
[redacted]@nih.gov

-----Original Message-----
From: Glowinski, Irene (NIH/NIAID) [E]
Sent: Thursday, March 10, 2016 11:09 AM
To: NIAID BUGS [redacted]@niaid.nih.gov>
Subject: FW: [Non-DoD Source] RE: reaching out to FANG co-chairs for guidance (UNCLASSIFIED)
Importance: High

Can someone find out what Mike means by damage control...and who he expects will do it? All I see out of this whole chain is "Tony Fauci was on the line and not happy. " Cliff will likely be blameless.

Thanks.

-----Original Message-----
From: Kurilla, Michael (NIH/NIAID) [E]
Sent: Thursday, March 10, 2016 9:07 AM
To: Glowinski, Irene (NIH/NIAID) [E] [redacted]@niaid.nih.gov>; NIAID BUGS [redacted]@niaid.nih.gov>
Subject: FW: [Non-DoD Source] RE: reaching out to FANG co-chairs for guidance (UNCLASSIFIED)
Importance: High

We may need to a bit of damage control here.

I had a conversation last weekend with Libby Higgs (who's currently in Liberia) about this very issue to give her and Cliff a heads up, offer then a briefing on what we had, and agree to allow some DCR participation with the upcoming FDA meeting at the end of the month.

Briefly, DOD has finally acknowledged a close held unreported finding that we very recently confirmed that vaccinated

NHPs suffer severe lung pathology when challenged by aerosol exposure. There are some (in DOD, such as Sina) who fear this may derail filovirus vaccines permanently.

Michael G Kurilla, MD-PhD
Director, Office of BioDefense, Research Resources, and Translational Research Associate Director for BioDefense Product Development DMID, NIAID, NIH, DHHS
[redacted]
Rockville, MD 20852
[redacted]
My philosophy is: it's none of my business what people say of me and think of me.
I am what I am and I do what I do. I expect nothing and accept everything.
And it makes life so much easier.
- Anthony Hopkins

-----Original Message-----
From: Nuzum, Ed (NIH/NIAID) [E]
Sent: Thursday, March 10, 2016 8:56 AM
To: Kurilla, Michael (NIH/NIAID) [E] [redacted]@niaid.nih.gov>; Schmitt, Clare (NIH/NIAID) [E] [redacted]@niaid.nih.gov>; Bryant, Paula (NIH/NIAID) [E] [redacted]@nih.gov>
Subject: FW: [Non-DoD Source] RE: reaching out to FANG co-chairs for guidance (UNCLASSIFIED)
Importance: High

Ed Nuzum DVM, PhD
Chief, Biodefense Vaccines and other Biological Products Development Section Office of Biodefense, Research Resources, and Translational Research (OBRRTR) DMID/NIAID/NIH [redacted]
Bethesda, MD 20892-9825
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[redacted]@niaid.nih.gov

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-----Original Message-----
From: Kilgore, Nicole R CIV USARMY DOD JPEOCBD (US) [redacted]@mail.mil]
Sent: Wednesday, March 09, 2016 10:41 PM
To: Nuzum, Ed (NIH/NIAID) [E] [redacted]@niaid.nih.gov>
Subject: RE: [Non-DoD Source] RE: reaching out to FANG co-chairs for guidance (UNCLASSIFIED)

Hi,

We will need to cancel the FANG meeting for tomorrow. We have a task to work.

FYI- Sina got out ahead of our FDA meeting and has stirred the pot the whole way to the white house. You may hear more about it from your chain of command. Tony Fauci was on the line and not happy.

From: Nuzum, Ed (NIH/NIAID) [E] [redacted]@niaid.nih.gov]
Sent: Wednesday, March 09, 2016 9:36 PM

To: Kilgore, Nicole R CIV USARMY DOD JPEOCBD (US)
Subject: RE: [Non-DoD Source] RE: reaching out to FANG co-chairs for guidance (UNCLASSIFIED)

Nicole, some of us here have discussed this and generally agree with the idea and approach. In general though I think it will need good co-chairs that can establish and maintain the focus. It will be a big project to identify the group, organize the meeting, compile findings, etc. And I think we need to really establish clear goals/questions the group is to address. For me, a major question is identifying a potential regulatory path based on the data we have. Of course identification and characterization of what is going on is important. But if we assume the pathology isn't going to go away absent a completely different vaccine, how can we go forward with what we have?

So, how do you find the booming metropolis of Leavenworth, KS? (that is a rhetorical question) I grew up about an hour north of there on Hwy 7 in a small town called White Cloud. It is in the very NE corner of the state located on the Missouri River like Leavenworth? I guess you have to be from there to like that part of the country.

Ed

Ed Nuzum DVM, PhD
Chief, Biodefense Vaccines and other Biological Products Development Section Office of Biodefense, Research Resources, and Translational Research (OBRRTR) DMID/NIAID/NIH [redacted]
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-----Original Message-----
From: Kilgore, Nicole R CIV USARMY DOD JPEOCBD (US) [redacted]@mail.mil]
Sent: Tuesday, March 08, 2016 11:11 PM
To: Nuzum, Ed (NIH/NIAID) [E] [redacted]@niaid.nih.gov>
Subject: RE: [Non-DoD Source] RE: reaching out to FANG co-chairs for guidance (UNCLASSIFIED)

Hi,

I would like to share my thoughts on this working group or specialized team.

- We need to think outside the box and get a different team to tackle the aerosol issue. I am concerned that our usual players are not considering all aspects and may not have the right expertise to tackle the aerosol issue and I say this in the most respectful way.
- At this time we need to tackle this from a human perceptive followed by the animal model
- I want to propose a working group that has a very limited scope. Basically, review the data sets for aerosol studies and

then to brain storm on the kinds of studies that can be conducted to further dissect the issue. Once we have a road map, then we can bring it back to the FANG for further discussion, prioritization, execution, and funding of studies.
- If we could pull a very specialized team together for a 2-3 day focused meeting- "Think Tank" that would be ideal.
-By specialized team I mean the following: Lung pathologist, Respiratory immunologist, Allergist, Aerosol biologist, Pathophysiologists, etc- currently the FANG membership is limited in these areas; small group of individuals <12
- It could be co-lead by a DOD and NIAID reps whose function would be to coordinate and facilitate the meeting; the FANG could help to identify team members
- I would propose that this "Think Tank" - Working group meet after our interaction with the FDA; perhaps end of April

We like the idea of having the working group fall under the FANG for multiple reasons:
1- Joint effort across government
2- Represents all the funding agencies
3- Help to eliminate any perceived agendas

What are your thoughts on this approach?

I am still in training and will not be available for Thursday's meeting. I would very much like to be part of this discussion, so we could consider moving this topic until I return. Or you can discuss it with the team on Thursday but I will say that I will be very resistant to just using one of the existing working groups to tackle this issue for the various reasons outlined above.

Thanks,
Nicole

Nicole Kilgore, MS, PMP
Deputy Joint Product Manager
Medical Countermeasure Systems-
Joint Vaccine Acquisition Program
[redacted]
Ph-[redacted]
Fax-[redacted]
email -[redacted]@mail.mil

-----Original Message-----
From: Nuzum, Ed (NIH/NIAID) [E] [[redacted]@niaid.nih.gov]
Sent: Monday, March 07, 2016 12:50 PM
To: Pitt, Margaret L CIV USARMY MEDCOM USAMRIID (US); Dorsey, Christopher B CIV (US); Kilgore, Nicole R CIV USARMY DOD JPEOCBD (US)
Cc: Bryant, Paula (NIH/NIAID) [E]; Taylor, Kimberly (NIH/NIAID) [E]; Wolfraim, Larry (NIH/NIAID) [E]; Dowling, William (NIH/NIAID) [E]
Subject: RE: [Non-DoD Source] RE: reaching out to FANG co-chairs for guidance (UNCLASSIFIED)

Thanks Louise. This is definitely relevant information to the topic at hand. I stand corrected. What I take from this is that we should pursue both large and small particle aerosol exposures and especially get more data from large particle for comparison of disease course and pathogenicity for both.

Ed Nuzum DVM, PhD

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-----Original Message-----
From: Pitt, Margaret L CIV USARMY MEDCOM USAMRIID (US) [redacted]@mail.mil]
Sent: Monday, March 07, 2016 12:14 PM
To: Nuzum, Ed (NIH/NIAID) [E] [redacted]@niaid.nih.gov>; Dorsey, Christopher B CIV (US) [redacted]@mail.mil>; Kilgore, Nicole R CIV USARMY DOD JPEOCBD (US) [redacted]@mail.mil>
Cc: Bryant, Paula (NIH/NIAID) [E] [redacted]@nih.gov>; Taylor, Kimberly (NIH/NIAID) [E] [redacted]@nih.gov>; Wolfraim, Larry (NIH/NIAID) [E] [redacted]@nih.gov>; Dowling, William (NIH/NIAID) [E] [redacted]@nih.gov>
Subject: RE: [Non-DoD Source] RE: reaching out to FANG co-chairs for guidance (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

ALL

Would like to give some clarification here and put things in perspective

There has been / is much been discussed re small particle vs large particle aerosol So - to clarify Small particle aerosol is the concern in the health care environment Cough - small 1 - 5um particles Aerosols generated from vomit, diarrhea etc. - same Sneeze in general a larger particle range but there are still some in the lower inhalable range Aerosols created when intubating patients - same concern

This is discussed in the Osterholm et al paper re Ebola (attached)

I can provide multiple papers on this subject if you wish - or you can just GOOGLE it!

Louise

-----Original Message-----
From: Nuzum, Ed (NIH/NIAID) [E] [redacted]@niaid.nih.gov]
Sent: Monday, March 07, 2016 10:43 AM
To: Dorsey, Christopher B CIV (US); Kilgore, Nicole R CIV USARMY DOD JPEOCBD (US)
Cc: Bryant, Paula (NIH/NIAID) [E]; Taylor, Kimberly (NIH/NIAID) [E]; Wolfraim, Larry (NIH/NIAID) [E]; Dowling, William (NIH/NIAID) [E]; Pitt, Margaret L CIV USARMY MEDCOM USAMRIID (US)
Subject: [Non-DoD Source] RE: reaching out to FANG co-chairs for guidance

---

Chris, my personal view is that I do see this as more of a DoD issue than a HHS issue, not because I think small particle aerosols is unimportant but because HHS has a more PH, natural disease mandate. And from standpoint of resource allocation, I think it makes sense that DoD pursue aerosol indication and HHS pursue more natural exposures such as large particle inhalation. All that said, we can't be completely separated from this issue because what happens with it can impact other challenge routes. Also, its not yet clear this problem wont exist with any inhalation exposure. Kim, please add this to discussion for our Wed meeting. And yes, this is an excellent topic for the Thursday FANG core meeting. My sense now is that DoD should lead this working group with representation from at least one of us, whoever is willing. If Lousie and Bill want to take this on as a FANG animal model subgroup project, that is fine with me also. And maybe, until we know for certain that this problem isn't associated with large particle inhalation exposure, it shouldn't be separated at all. That is, its just as big a problem for HHS if the problem exists with large particle inhalation exposure.

Ed

Ed Nuzum DVM, PhD
Chief, Biodefense Vaccines and other Biological Products Development Section Office of Biodefense, Research Resources, and Translational Research (OBRRTR) DMID/NIAID/NIH [redacted]
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-----Original Message-----
From: Dorsey, Christopher B CIV (US) [redacted]@mail.mil]
Sent: Monday, March 07, 2016 10:27 AM
To: Nuzum, Ed (NIH/NIAID) [E] [redacted]@niaid.nih.gov>; Kilgore, Nicole R CIV USARMY DOD JPEOCBD (US) [redacted]@mail.mil>
Subject: reaching out to FANG co-chairs for guidance

Good morning-

JVAP is looking to pull together a working group to discuss and hopefully design studies to work around our aerosol protection issue.

I'm stuck right now because I don't know if this should be handled internally within the DoD or if this aerosol protection issue affects the whole of government and should be discussed within subset FANGS meetings. The DoD definitely has to overcome this issue, as protection against aerosol challenge is our requirement.

I'm hearing some rumblings that the HHS mission could be evolving to back away from the requirement to protect against aerosol. If this is true, protecting against aerosol would only be a DoD issue.

I need to understand this divergence in requirements before setting up a working group and if this topic could be discussed within the FANG CORE meeting this Thursday. The purpose of the working group is to discuss work-arounds and program in studies to increase protection against aerosol challenge and lessen the acute respiratory disease we are seeing in vaccinated NHPs. It would be nice if financial stakeholders are considered in these working group meeting so nonclinical work can be delineated across groups.

If NIAID would like to have a rep attend these meetings, please let me know who you recommend. I'm looking for members to dedicate 2 hours a week.

Thanks-
Chris

Chris Dorsey

Program Manager, Joint Vaccine Acquisition Program (JVAP)

Joint Project Management Office-
Medical Countermeasure Systems (JPM-MCS)
[redacted]
ph: [redacted]
cell: [redacted]
fax: [redacted]
[redacted]@mail.mil

Classification: UNCLASSIFIED
Caveats: NONE

From: "Jahrling, Peter (NIH/NIAID) [E]" [redacted]@niaid.nih.gov>
To: "Lane, Cliff (NIH/NIAID) [E]" [redacted]@niaid.nih.gov>
Cc: "Hensley, Lisa (NIH/NIAID) [E]" [redacted]@nih.gov>
Subject: Re: Aerosolized Ebola
Date: Thu, 10 Mar 2016 23:15:37 -0500
Importance: Normal

Cliff,

Understood but if this is dual use research then the entire DTRA portfolio which calls for aerosol challenge against MCM for BioDefense pathogens is dual use. If the bioterrorist threat involves an aerosol attack I don't see how anyone could criticize us for asking the question. As an aside, I have serious concerns about the RIID experiment and its interpretation.

Peter

Sent from my iPhone

> On Mar 10, 2016, at 2:34 PM, Lane, Cliff (NIH/NIAID) [E] [redacted]@niaid.nih.gov> wrote:
>
> Peter/Lisa,
>
> I would not move forward on any experiments in this area until a bit of dust settles (if it does).
>
> One might consider this dual use research.
>
> Please do not get into discussions outside the two of you until we have a chance to talk.
>
> Cliff
>
>

From: "Fauci, Anthony (NIH/NIAID) [E]" </O=NIH/OU=NIHEXCHANGE/CN=NIAID/CN=AFAUCI>
To: "Kurilla, Michael (NIH/NIAID) [E]" [redacted]@niaid.nih.gov>
Cc: "Conrad, Patricia (NIH/NIAID) [E]" [redacted]@niaid.nih.gov>, "Vance, Meaghan (NIH/NIAID) [C]" [redacted]@nih.gov>, "Auchincloss, Hugh (NIH/NIAID) [E]" [redacted]@niaid.nih.gov>, "Glowinski, Irene (NIH/NIAID) [E]" [redacted]@niaid.nih.gov>
Bcc: "Lane, Cliff (NIH/NIAID) [E]" [redacted]@niaid.nih.gov>
Subject: Call this morning
Date: Fri, 11 Mar 2016 06:51:59 -0500
Importance: Normal

I need to speak with you this morning before 10:00 AM. I need all of the specific information about our involvement in the Ebola NHP challenge studies:

1) What is the nature of our collaboration with the DoD on these studies?
2) Did any NIAID money at all go into the performance of the aerosolized challenge studies?
3) If not aerosolized experiments, then what kind of experiments did we fund?
4) Who at NIAID is the responsible program person for those studies?
5) If we participated in those studies, did anyone not realize that they likely would be classified?

I have to meet with the NSC people later this AM. And so, please, please make sure that you or the people from whom you get this information tell me the truth, the whole truth and nothing but the truth. Do not tell me what you think I want to hear or hold back what you think will upset me. No one will get hurt if they made a mistake, but then they told me the truth. If someone does not tell me the truth and I find out they did not, then they are gone. Please find out the correct information before I report to the White House. Thanks.

Anthony S. Fauci, MD
Director
National Institute of Allergy and Infectious Diseases
Building 31, Room 7A-03
31 Center Drive, MSC 2520
National Institutes of Health
Bethesda, MD 20892-2520
Phone: [redacted]
FAX: [redacted]
E-mail: afauci@niaid.nih.gov

From: "Kurilla, Michael (NIH/NIAID) [E]" [redacted]@niaid.nih.gov>
To: "Fauci, Anthony (NIH/NIAID) [E]" <AFAUCI@niaid.nih.gov>
Cc: "Bryant, Paula (NIH/NIAID) [E]" [redacted]@nih.gov>, "Lane, Cliff (NIH/NIAID) [E]" [redacted]@niaid.nih.gov>
Subject: Re: Further thoughts on aerosol / vaccine vulnerability
Date: Sat, 12 Mar 2016 12:24:51 -0500
Importance: Normal

Understood, although my line of reasoning was focused on the issue of classification for the aerosol results and why it makes no sense to classify.

On the other hand, my reference to re-exposure in survivors was hypothetical in the sense of an aerosol challenge and not the more routine likelihood of natural infection. The situation of a natural filovirus outbreak is completely different and needs to be separated from the aerosol challenge, although I suspect some people will argue that large particle intranasal exposure is still an open question that should be addressed.

From: Fauci, Anthony (NIH/NIAID) [E]
Sent: Saturday, March 12, 2016 12:08 PM
To: Kurilla, Michael (NIH/NIAID) [E]
Cc: Bryant, Paula (NIH/NIAID) [E]; Lane, Cliff (NIH/NIAID) [E]
Subject: RE: Further thoughts on aerosol / vaccine vulnerability

See yellow highlight. You are still missing the point about the difference between bioterror exposure to aerosolized Ebola and an Ebola survivor getting re-exposed in the usual way in the natural exposure situation. The latter would almost certainly NOT be exposed to a 2.5 micron aerosolized virus that makes its way to the alveolar spaces without getting stopped in the nose or throat or even the trachea.

From: Kurilla, Michael (NIH/NIAID) [E]
Sent: Friday, March 11, 2016 1:21 PM
To: Fauci, Anthony (NIH/NIAID) [E]
Cc: Bryant, Paula (NIH/NIAID) [E]
Subject: Further thoughts on aerosol / vaccine vulnerability

Tony,

The more I ponder this issue, the more I have come to the conclusion this has nothing to do with “revealing” a vulnerability.

In the 1st case, we are not deploying a vaccine because there is no licensed vaccine, so what exactly is vulnerable? If we kept this finding a secret would DOD seriously consider deploying a vaccine that doesn’t perform as intended?

2nd, what appears to be going on here is a common misperception I find with non-technical people who make the assumption that there is only “one” way to achieve immunity and therefore if a vaccine causes an adverse event (like lung pathology), then all vaccines will have this problem and vaccines are forever off the table. I don’t believe this is credible. The immune system is too diverse and redundant to have only “one” way. To do anything.

What is really going on here is the specific immunological mechanism of immunity we are targeting with these vaccines has an associated adverse immunological response that will need to be characterized and factored out of the next generation of filovirus vaccine. Again, no vulnerability, just emerging science with new technical challenges.

Finally, if vaccination can result in enhanced lung disease upon challenge, then it's possible that the same thing could happen to survivors if re-exposed.

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Associate Director for BioDefense Product Development
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[redacted]
D 20852
[redacted]

We spend the first year of a child's life teaching it to walk and talk and the rest of its life to shut up and sit down.
- Neil deGrasse Tyson

From: "Jahrling, Peter (NIH/NIAID) [E]" [redacted]@niaid.nih.gov>
To: "Hensley, Lisa (NIH/NIAID) [E]" [redacted]@nih.gov>, "Lane, Cliff (NIH/NIAID) [E]" [redacted]@niaid.nih.gov>
Subject: RE: Can we discuss Ebola vaccines and the IRF?
Date: Mon, 14 Mar 2016 17:22:04 -0400
Importance: Normal

Cliff,

I had Mike on the edge agreeing to concur with my decision to proceed with the confirmation of virulence study we had planned for aerosol exposures using Ebola Makona. Clearly someone needs to attempt to repeat the USAMRIID study using all the appropriate controls which are sorely lacking from the piecemeal composite picture which is being drawn. Preliminary to all such studies using vaccines, or any MCM for that matter, reliable aerosol model needs to be established. Mike said he wanted to think about it a little more, citing the extreme anxiety all this seems to be creating. He suggested we wait until the FDA meeting on March 31 to initiate any new studies and that is not too far away. In the interim, however, we will continue to make plans to initiate the CoV study as soon as the lights turn green. I will keep the rest off Email, but if aerosol challenge studies are considered DURC then the entire MCM development paradigm is gutted.

Peter

From: Hensley, Lisa (NIH/NIAID) [E]
Sent: Monday, March 14, 2016 3:58 PM
To: Lane, Cliff (NIH/NIAID) [E] [redacted]@niaid.nih.gov>; Jahrling, Peter (NIH/NIAID) [E] [redacted]@niaid.nih.gov>
Subject: RE: Can we discuss Ebola vaccines and the IRF?

A lot of discussion but nothing definitive in my mind.

Lisa E. Hensley
Associate Director, Science
NIH/NIAID/IRF
Ft Detrick MD

ph: [redacted]
b berry: [redacted]

From: Lane, Cliff (NIH/NIAID) [E]
Sent: Monday, March 14, 2016 3:58 PM
To: Hensley, Lisa (NIH/NIAID) [E] [redacted]@nih.gov>; Jahrling, Peter (NIH/NIAID) [E] [redacted]@niaid.nih.gov>
Subject: FW: Can we discuss Ebola vaccines and the IRF?

How did the call go?

From: Kurilla, Michael (NIH/NIAID) [E]
Sent: Monday, March 14, 2016 3:57 PM
To: Lane, Cliff (NIH/NIAID) [E]
Subject: Can we discuss Ebola vaccines and the IRF?

Michael G Kurilla, MD-PhD
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We spend the first year of a child's life teaching it to walk and talk and the rest of its life to shut up and sit down.
- Neil deGrasse Tyson

From: "Fauci, Anthony (NIH/NIAID) [E]" </O=NIH/OU=NIHEXCHANGE/CN=NIAID/CN=AFAUCI>
To: "Kurilla, Michael (NIH/NIAID) [E]" [redacted]@niaid.nih.gov>
Subject: RE: Ebola report you requested
Date: Sat, 19 Mar 2016 16:58:53 -0400
Importance: Normal

Thanks, Mike. I appreciate your putting this together.
Best,
Tony

From: Kurilla, Michael (NIH/NIAID) [E]
Sent: Friday, March 18, 2016 6:20 PM
To: Fauci, Anthony (NIH/NIAID) [E]
Subject: Ebola report you requested

Tony,

Attached is a brief overview of NIAID's engagement with DOD encompassing filovirus challenge studies along with a timeline of when we knew what.

I did not organize this into a formal document for sharing outside of NIAID; rather, I wanted to provide you with the details for you to digest and decide how you would like to proceed.

This originated with concerns that NIAID undertook studies that should have been classified (or perhaps even never conducted). My intent was to provide sufficient detail to conclude that classification was never a consideration at any time. While there are potential crossover issues for public health outbreaks of Ebola, the dynamics of disease transmission are fundamentally different. I'm hopeful that FDA will arrive at the same conclusion. Messaging these results may require some attention.

You should also be aware that DOD has already expressed (as has Cliff Lane) to me a desire to work collaboratively to address the scientific issues raised with these limited studies.

Let me know what else you need.

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Associate Director for BioDefense Product Development
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- Neil deGrasse Tyson

Overview of the NIAID Filovirus Vaccine Program and Non-Human Primate Aerosol Challenge

This report has been prepared in response to specific queries regarding NIAID's involvement with non-human primate (NHP) filovirus aerosol challenge.

Specific information requested about NIAID involvement in the Ebola NHP challenge studies:

1) What is the nature of NIAID's collaboration with the DoD on these studies?
2) Did any NIAID money at all go into the performance of the aerosolized challenge studies?
3) If not aerosolized experiments, then what kind of experiments did we fund?
4) Who at NIAID is the responsible program person for those studies?
5) If NIAID participated in those studies, did anyone not realize that they likely would be classified?

Background

In 2006, the Department of Homeland Security (DHS) issued a Material Threat Determination (MTD) for both Ebola and Marburg viruses. Due to the lack of suitable candidate countermeasures and in the absence of specific product specific requirement guidance from the Public Health and Emergency Medical Countermeasures Enterprise (PHEMCE), NIAID expanded the basic science and translational portfolio to emphasize both vaccines and therapeutics. In 2013, the PHEMCE Filovirus Integrated Product Team (IPT) issued the "PHEMCE Product-Specific Requirements for Medical Countermeasures for Post-exposure Prophylaxis (PEP) and Treatment (TRT) for Marburg and Ebola Virus Diseases" which outlined the conceptualization of approaching a possible bioterrorist attack scenario which assumed an aerosol release and identified key threshold and objective requirements for consideration in evaluating potential countermeasures to address the threat. Specifically, post-exposure prophylaxis (for those with a known exposure, but without obvious symptoms of diseases) and treatment for those exhibiting signs and symptoms of disease were considered.

N.B.: the 2014 West African Ebola outbreak will likely influence further evolution, refinement, and revision in the public health response to a potential bioterrorist related release along with the possibility of a widespread public health outbreak of a more traditional epidemiological pattern of transmission, but those discussions are still ongoing.

NIAID's emphasis (from a bioterrorist perspective) has been confined to treatment options with vaccine development focused on evaluating promising vaccine candidates that could be further developed for PEP (limited, preliminary data supporting this option became available around 2006-2008 timeframe). As such NIAID had obtained little direct experience in Ebola aerosol challenge with only isolated components of the overall program due to back and forth movement of DOD and NIAID personnel with incomplete knowledge of individual studies where aerosol challenge had been employed. Due to a combination of a less well developed animal model for aerosol challenge, suggestions of filovirus strain specific pathogenesis, confusion with the significance with 7U viral variants versus 8U viral variants differences between *in vitro* cell culture growth versus *in vivo* pathogenic effects, and uncertainty regarding dose effects by the aerosol route, the assorted collection individual, isolated studies were largely uninterpretable.

Prior to 2013, NIAID's knowledge of filovirus aerosol challenge data was derived exclusively from published literature and individual, anecdotal events related to specific studies and related by personnel who transitioned from the Department of Defense. The aerosol literature dates back to as early as 1992

with identification of Ebola Reston. Early attempts to characterize aerosol challenge are concentrated in the Russian literature with US researchers first reporting a challenge model in 1995. The first published vaccination reports of aerosol challenge date to 2008 with recombinant VSV-vectored vaccines to Ebola Zaire and Marburg that conferred protection, but without reported necropsy results. A single-dose of a recombinant adenovirus bivalent vaccine vector expressing Ebola Zaire and Sudan GPs was reported in 2010 to protect against aerosolized Ebola Zaire, but only partially protect against aerosolized Ebola Sudan. Vaccine failure in the latter was reported (in published literature) to exhibit specific lung pathology. Finally, similar results were obtained with Ebola Zaire and Ebola Sudan specific, Venezuelan equine encephalitis virus replicon particle-based vaccines, in that protection against aerosolized Ebola Sudan required two doses, and a distinctive lung pathology was observed.

Up to this point, NIAID had not specifically engaged with USAMRIID (or any other BSL4 facility to conduct aerosol challenge.

What follows is an approximate timeline of NHP filovirus aerosol challenge with NIAID involvement.

The earliest example of NIAID involvement with vaccine related aerosol challenge occurred in 2013 with the Vaccine Research Center (VRC) at USAMRIID. While NIAID generated vaccine constructs were protective to aerosol challenge, the specific challenge virus employed along with lack of necropsy data did not address the issue of lung pathology.

In June of 2015, a former NIAID employee who had worked in the extramural filovirus program and now was employed by DOD's Medical Countermeasures Systems – Joint Vaccine Acquisition Program (MCS-JVAP) contacted NIAID program staff regarding results of the VSV (Profectus) aerosol study and what appeared to be vaccine induced lung pathology, discussing the study findings verbally. At the next "filo tech team" (a weekly government only review of ongoing filovirus vaccine programs) meeting, two members of MCS-JVAP reviewed in some detail the Profectus data and expressed a desire to meet with NIAID and share all of the historical aerosol data that had been generated at United States Army Medical Research Institute of Infectious Diseases (USAMRIID) over the years. NIAID expressed an interest for involvement of the Defense Threat Reduction Agency (DTRA) along with any relevant aerosol results with the Merck rVSV vaccine the DoD had conducted. MCS-JVAP moved forward on arranging the larger meeting.

While this meeting was being arranged, MCS-JVAP inquired about the feasibility of partnering on NIAID's next available animal queue slot (scheduled for late November 2015) under our Task Order #8 (TO8) filovirus challenge to specifically address the question of vaccine platform impact on lung pathology during aerosol challenge. While Profectus declined to participate, other vaccine platforms were selected for evaluation. The study design was crafted with input from NIAID and MCS-JVAP, and was conducted at USAMRIID. In particular, the study employed the 7U version of Ebola Zaire, used only 100 pfu, and compared four vaccines in groups of four NHPs.

NIAID finally met with a large DoD contingent on December 4th at USAMRIID with participation by MCS-JVAP, DTRA, and USAMRIID. All historical data with Ebola Zaire only were presented in chronological order. TO8 data which was incomplete and limited to feet-up / feet-down results with some gross pathology on non-survivors was presented. All government agencies in the room agreed that the FDA needed to be informed of these findings, with MCS-JVAP taking the lead. JVAP-MCS requested inclusion of the TO8 aerosol study to the FDA (along with DoD data). It was also discussed and agreed upon that

all of the vaccine providers in these studies be notified that their data was going to be shared with the FDA. All vaccine providers were informed that the DoD and NIAID were going to the FDA, but that the data would be presented in a blinded fashion, with no single platform identified.

A follow-up meeting was held on January 8th (same location and participants as well as BARDA this time) to review available Marburg and Ebola Sudan aerosol data. MCS-JVAP was anxious to present data to the FDA, but requested a joint review with Profectus and Crucell to solicit their scientific input. Both companies agreed. A review was held on January 20th with both companies and the data on their own vaccines as well as historical data.

Following this last meeting, a March 31th data was set for a technical meeting with the FDA with slide sets available as of March 10th. On March 4th, the results of the aerosol study conducted in 2015 were shared verbally with DCR staff, including the intention to review the final slide deck to be submitted to the FDA as well as the opportunity to participate in the upcoming FDA meeting.

Finally, it should be noted that study results reference here represent outcomes from aerosol challenge which differ significantly from other challenge routes most notably IM challenge, where these same vaccine candidates have displayed clear, unambiguous protection without evidence of lung pathology. Other delivery routes, such as intranasal challenge are likely to be significantly different without deep lung penetration, but available data is too limited to draw definitive conclusions. Clinical experience with Ebola survivors would not suggest subsequent risk for lung pathology from large particle exposure.

In terms of the original queries:

1) **What is the nature of our collaboration with the DoD on these studies?**

NIAID has a longstanding collaboration with DOD on filovirus studies form both a basic science perspective as well as product development efforts including both vaccines and therapeutics. Of particular importance is the extremely limited availability of qualified containment facilities (especially BS4 containment) that can conduct GLP studies to support FDA Animal Rule licensure. Both DOD and HHS currently have requirements for vaccine efficacy with aerosol delivery.

2) **Did any NIAID money at all go into the performance of the aerosolized challenge studies?**

NIAID OD should confirm, but the DOD Medical Research and Materiel Command Interagency Agreement (MRMC IAA) workplan from 2013 suggests that NIAID funded the aerosol studies. For the 2015 aerosol study, NIAID provided funds.

3) **If not aerosolized experiments, then what kind of experiments did we fund?**

In addition to the cited aerosol studies, NIAID has supported both multiple vaccine and therapeutic studies in support the of PHEMCE biodefense program which lists Ebola (and Marburg) as biothreats with medical countermeasure requirements.

4) **Who at NIAID is the responsible program person for those studies?**

For the VRC sponsored study, Nancy Sullivan; for DMID, Paula Bryant.

5) If we participated in those studies, did anyone not realize that they likely would be classified?

At no time during any of these discussions detailed above was the issue of classification of sensitive material raised. All discussions were conducted outside of secure facilities and no required security clearance were ever requested by DOD or passed to security personnel. All current and historical aerosol data had been previously shared with vaccine manufacturers and in some cases had been published. In addition, during the design of the NIAID sponsored aerosol study in conjunction with DOD personnel, no mention was ever made of the need for classification status of the study results.

From: "Kurilla, Michael (NIH/NIAID) [E]" [redacted]@niaid.nih.gov>
To: "Lane, Cliff (NIH/NIAID) [E]" [redacted]@niaid.nih.gov>, "Fauci, Anthony (NIH/NIAID) [E]" <AFAUCI@niaid.nih.gov>
Subject: RE: rVSV studies
Date: Tue, 22 Mar 2016 09:18:31 -0400
Importance: Normal

Cliff,

The short answer is that I don't have a problem with aerosol exposure data being shared publically.

The classification issue appears to be a red herring at least from multiple, albeit second-hand sources within DOD. In addition, some aerosol data has already been published. Also, we know that several companies are also aware of some data regarding their own vaccines.

That said, my question to DOD would be exactly what are they planning to share and how will it be described? Also, the issue of how this impacts ongoing and future vaccine trials needs to be discussed. We need to clearly articulate the difference between natural infections and an artificial, highly engineered aerosol delivery.

I've spoken with DOD about jointly proceeding on a set of studies to figure this out, but it might be best to wait for FDA to weigh in with their views on the subject to ensure that we address all concerns.

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Associate Director for BioDefense Product Development
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[redacted]
Rockville, MD 20852
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My philosophy is: it's none of my business what people say of me and think of me.
I am what I am and I do what I do. I expect nothing and accept everything.
And it makes life so much easier.
- Anthony Hopkins

From: Lane, Cliff (NIH/NIAID) [E]
Sent: Tuesday, March 22, 2016 8:26 AM
To: Fauci, Anthony (NIH/NIAID) [E] <AFAUCI@niaid.nih.gov>; Kurilla, Michael (NIH/NIAID) [E] [redacted]@niaid.nih.gov>
Subject: rVSV studies

Tony/Mike,

I am currently on an interagency call where the question came up of whether or not we are comfortable with the results of the aerosol exposures being shared publicly (with caveats, etc.). I indicated that as long as the classification issue was resolved that from our perspective there were no concerns with data generated from our studies getting into the public domain. I also indicated a need to coordinate with pharmaceutical companies.

DoD indicated that they need to protect proprietary data.

Please let me know if we should take a different position.

Thanks,

Cliff