

Exhibit 1

Message

From: Jeremy Farrar
[REDACTED]
Sent: 2/1/2020 10:12:51 AM
To: Fauci, Anthony (NIH/NIAID) [E]
[REDACTED] Patrick
Vallance [REDACTED]
[REDACTED]
CC: Drosten, Christian
[REDACTED]
Marion Koopmans
[REDACTED];
R.A.M. Fouchier
[REDACTED]
Edward Holmes
[REDACTED]
spoehlmann [REDACTED]; Andrew
Rambaut [REDACTED]
Kristian G. Andersen
[REDACTED] Paul
Schreier
[REDACTED]
Garry, Robert F
[REDACTED] Ferguson,
Mike
[REDACTED];
Francis Collins
[REDACTED]
Subject: Re: Teleconference

External Sender. Be aware of links, attachments and requests.

Dial in details

[REDACTED]
Participant Code - [REDACTED]

From: Jeremy Farrar <[REDACTED]>
Date: Saturday, 1 February 2020 at 15:34
To: "Fauci, Anthony (NIH/NIAID) [E]" <[REDACTED]>, Patrick Vallance [REDACTED]
[REDACTED]
Cc: "Drosten, Christian" <[REDACTED]>, Marion Koopmans <[REDACTED]>
"r.fouchier [REDACTED]" <[REDACTED]>, Edward Holmes [REDACTED]
"spoehlmann [REDACTED]" <[REDACTED]> "a.rambaut [REDACTED]", "Kristian G.
Andersen" <[REDACTED]> Paul Schreier <[REDACTED]> "rfgarry [REDACTED]"
<[REDACTED]> Michael FMedSci <[REDACTED]>
Subject: Teleconference

1st February (2nd Feb for Eddie)

Information and discussion is shared in total confidence and not to be shared until agreement on next steps.

Dial in details attached.

Please mute phones.

I will be on email throughout – email Paul or I Paul if any problems

If you cannot make it, I will phone you afterwards to update.

One Hour

6am Sydney

8pm CET

7pm GMT

2pm EST

11am PST

(Hope I have the times right!)

Thank you for the series of calls and for agreeing to join this call.

Agenda

- Introduction, focus and desired outcomes - JF
- Summary – KA
- Comments – EH
- Q&A – All
- Summary and next steps - JF

Kristian Anderson

Bob Garry - I have not been able to contact Bob. Please forward if you can.

Christian Drosten

Tony Fauci

Mike Ferguson

Ron Fouchier

Eddie Holmes

Marion Koopmans

Stefan Pohlmann

Andrew Rambaut

Paul Schreier

Patrick Vallance

Exhibit 2

Message

From: Garry, Robert F [REDACTED]
Sent: 2/1/2020 5:13:25 PM
To: Jeremy Farrar [REDACTED]
CC: Fauci, Anthony (NIH/NIAID) [E] [REDACTED]; Patrick Vallance [REDACTED]; Drosten, Christian [REDACTED]; Marion Koopmans [REDACTED]; R.A.M. Fouchier [REDACTED]; Edward Holmes [REDACTED]; spoehlmann [REDACTED]; Andrew Rambaut [REDACTED]; Kristian G. Andersen [REDACTED]; Paul Schreier [REDACTED]; Ferguson, Mike [REDACTED]; Francis Collins [REDACTED]; Lawrence Tabak [REDACTED]; Josie Golding [REDACTED]
Subject: Re: Teleconference

I agree completely.

A very good outcome from an important first meeting.

Bob Garry

Sent from my iPhone

On Feb 1, 2020, at 2:59 PM, Jeremy Farrar <[REDACTED]> wrote:

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Thank you to everyone for joining.

There is clearly much to understand in this. This call was very helpful to hear some of our current understanding and the many gaps in our knowledge. I do not believe this is a question of a binary outcome, it is more a question of "What are the evolutionary origins of 2019-nCoV, important for future risk assessment and understanding of animal/human coronaviruses".

I do know there are papers being prepared, there will be media interest and there is already chat on Twitter/WeChat.

We on this call are not the only ones with scientific expertise in this area and this was an ad hoc group that came together to air some thoughts. It is clearly not the sole group to take this forward, that will need a broader range of input and a respected international body to ask an expert group to explore this, with a completely open mind. In order to stay ahead of the conspiracy theories and social media I do think there is an urgency for a body to convene such a group and commission some work to – (draft) "To understand the evolutionary origins of 2019-nCoV, important for this epidemic and for future risk assessment and understanding of animal/human coronaviruses".

In other words a completely open minded and neutral question bringing in the best minds, and under the umbrella of a respected international agency

I hope that is a reasonable approach, please send any thoughts or suggestions.

Once again, thank you for making time over a weekend and for such an informed discussion on a complex issue.

Thank you and best wishes Jeremy

Exhibit 3

On Feb 8, 2020, at 9:24 AM, Kristian G. Andersen <[REDACTED]> wrote:

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Sounds good. At this stage, seems a little more like a school project than a full-on scientific paper to me, but we can definitely get it into shape. Let's see what the feedback is from the group and what happens with the pango sequences.

I'll look more into the structures over the weekend.

K

On Sat, Feb 8, 2020 at 07:14 Andrew Rambaut <[REDACTED]> wrote:

Jeremy is pushing us to get a paper ready to go (prob. Nature). Check out the slack channel. Working up a few more detailed analyses. I have also created a copy of the report to start to work into the paper (I suggest we keep the report as a privately circulated document where we can be a bit more free).

Obviously things may develop with respect to the Pangolin sequence.

A.

On 8 Feb 2020, at 15:02, Kristian G. Andersen <[REDACTED]> wrote:

Yup, all good!

On Sat, Feb 8, 2020 at 01:51 Edward Holmes <[REDACTED]> wrote:

Had a chat with Jeremy and Andrew and we agreed that Jeremy should then the doc to the other group members. Decided that we need some feedback now.

So, let's see what happens.

PROFESSOR EDWARD C. HOLMES FAA FRS
ARC Australian Laureate Fellow

THE UNIVERSITY OF SYDNEY
Marie Bashir Institute for Infectious Diseases & Biosecurity,
School of Life & Environmental Sciences and School of Medical Sciences,
The University of Sydney | Sydney | NSW | 2006 | Australia

T [REDACTED]
E [REDACTED]

On 8 Feb 2020, at 9:02 am, Kristian G. Andersen <[REDACTED]> wrote:

The Ego guys will tell you that they had no involvement in the Bombali stuff... I pushed them on it.

A lot of hot air.

On Fri, Feb 7, 2020 at 13:42 Andrew Rambaut <[REDACTED]> wrote:

Exhibit 4

Message

From: Edward Holmes
[REDACTED]
Sent: 2/2/2020 3:16:08 PM
To: Garry, Robert F
[REDACTED]
CC: Kristian G. Andersen
[REDACTED] Andrew
Rambaut [REDACTED]
Subject: Re: Trying to create a summary...

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Good spot Bob.

Kristian - I think you are right that a careful report is the way to go. No need to super rush. Pass to Jeremy and let decide where to share it - perhaps to the WHO group? I don't want to get into a email argument with Ron et al.

I'll let Jeremy know what we are up to.

I'll also check the geographic locations of all bat coronaviruses.

Cheers,

Eddie

Professor Edward C. Holmes FAA FRS
The University of Sydney

On 3 Feb 2020, at 8:06 am, Garry, Robert F <[REDACTED]> wrote:

Please see attached.

It's a serological study of exposure to SARS-like viruses in China.

Sera from Wuhan – I kid you not - was used as the control group.

Bottom line 6 out of 201 people from a rural area near a batcave had some seropositivity.

0 out of 240 random blood donors from Wuhan had seroreactivity.

From: Kristian Andersen <[REDACTED]>
Date: Sunday, February 2, 2020 at 2:40 PM
To: Edward Holmes <[REDACTED]>
Cc: Andrew Rambaut <[REDACTED]>, Robert Garry <[REDACTED]>
Subject: Re: Trying to create a summary...

Exhibit 5

Message

From: Edward Holmes
[REDACTED]
Sent: 2/15/2020 10:45:33 PM
To: Garry, Robert F
[REDACTED]
CC: Ian Lipkin [REDACTED];
Andrew Rambaut
[REDACTED] Kristian
G. Andersen
[REDACTED]
Subject: Re: Paper
Attachments: Andersen.Nature
Perspective.docx;
Andersen.Figure 1.pdf

External Sender. Be aware of links, attachments and requests.

All, attached is what I propose is the final version of this paper. I've just given it a final wash-and-brush-up. Looks great I reckon.

Can you please check your names, affiliations and acknowledgements.

I'll pass to Jeremy to see if he has any final comments and wants to be acknowledged.

This needs to go to Nature on Monday in somebody's time zone. Kristian I'll let you deal with this. You may need to provide more contact details. Figure also attached separately.

Cheers,

Eddie

PROFESSOR EDWARD C. HOLMES FAA FRS
ARC Australian Laureate Fellow

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School of Life & Environmental Sciences and School of Medical Sciences,
The University of Sydney | Sydney | NSW | 2006 | Australia

T [REDACTED]
E [REDACTED]

On 16 Feb 2020, at 12:09 pm, Garry, Robert F <[REDACTED]> wrote:

I formally agree.

Any guy that helps discover Jingmen tick viruses and Wuhan cricket virus must be trusted. Very important.

Going to dinner with my wife so will put down the phone.

Exhibit 6

On 16 Feb 2020, at 7:24 pm, Garry, Robert F <[REDACTED]> wrote:

No problem either count

Jeremy has been amazing leader-should be author

Sent from my iPhone

On Feb 16, 2020, at 2:18 AM, Edward Holmes <[REDACTED]> wrote:

External Sender. Be aware of links, attachments and requests.

Ah. I so, I can submit on his behalf.

Jeremy wants to add something to the acknowledgments.

Just seen this: no GISAID acknowledgment as far as I can tell:

<https://www.tandfonline.com/doi/full/10.1080/20477724.2020.1725339>

PROFESSOR EDWARD C. HOLMES FAA FRS

ARC Australian Laureate Fellow

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Marie Bashir Institute for Infectious Diseases & Biosecurity,
School of Life & Environmental Sciences and School of Medical Sciences,
The University of Sydney | Sydney | NSW | 2006 | Australia

T [REDACTED]
E [REDACTED]

On 16 Feb 2020, at 7:14 pm, Garry, Robert F <[REDACTED]> wrote:

One thing - I'm not sure when Kristian is returning to the connected world. Monday is a federal holiday.

Sent from my iPhone

On Feb 16, 2020, at 12:44 AM, Edward Holmes <[REDACTED]> wrote:

External Sender. Be aware of links, attachments and requests.

Thanks Bob!

Sorry about the typo. I'll let Kristian fix that one.

Cheers,

Eddie

Exhibit 7

Message

From: Clare Thomas [REDACTED]
Sent: 2/13/2020 8:47:54 AM
To: Kristian G. Andersen [REDACTED]
Subject: RE: Interest in commentary/hypothesis on SARS-CoV-2 origins?

Dear Kristian,
Ok that sounds great. Thanks so much.
All the best,
Clare

From: Kristian G. Andersen [mailto:[REDACTED]]
Sent: 13 February 2020 16:33
To: Clare Thomas
Subject: Re: Interest in commentary/hypothesis on SARS-CoV-2 origins?

Sounds great Clare. We'll work out a few more of the details and share with you a draft so you can get a sense of whether this would be of interest and would also give you a chance to provide suggestions for things to incorporate.

I'll be gone for the rest the week, but I assume we'll have this ready early/mid next week.

Best,
Kristian

On Thu, Feb 13, 2020 at 2:34 AM Clare Thomas <[REDACTED]> wrote:

Dear Kristian,

Yes please! It sounds possibly like a Perspective. I would love to take a look and consider whether it might be suitable for Nature.

All the best,

Clare

From: Kristian G. Andersen [REDACTED]
Sent: 12 February 2020 23:09
To: Clare Thomas
Subject: Interest in commentary/hypothesis on SARS-CoV-2 origins?

Dear Clare,

I can only imagine you must be crazy busy at the moment! I wanted to reach out to you to see if there would be interest in receiving a commentary/hypothesis piece on the evolutionary origins of SARS-CoV-2? There has

been a lot of speculation, fear mongering, and conspiracies put forward in this space and we thought that bringing some clarity to this discussion might be of interest to Nature.

Prompted by Jeremy Farrah, Tony Fauci, and Francis Collins, Eddie Holmes, Andrew Rambaut, Bob Garry, Ian Lipkin, and myself have been working through much of the (primarily) genetic data to provide agnostic and scientifically informed hypotheses around the origins of the virus. We are not quite finished with the writeup and we still have some loose ends, but I wanted to reach out to you to see if this might potentially be of interest? We see this more as a commentary/hypothesis, as opposed to a more long-form Letter or Article.

Best,

Kristian

Kristian G. Andersen, PhD

Associate Professor, Scripps Research

Director of Infectious Disease Genomics, Scripps Research Translational Institute

Director, Center for Viral Systems Biology

The Scripps Research Institute

10550 North Torrey Pines Road, SGM-300A

Department of Immunology and Microbial Science

La Jolla, CA 92037

p: [REDACTED]

c: [REDACTED]

t: @K_G_Andersen

e: [REDACTED]

w: www.andersen-lab.com

Exhibit 8

Message

From: Fauci, Anthony (NIH/NIAID) [E] [REDACTED]
Sent: 1/31/2020 4:38:35 PM
To: Jeremy Farrar [REDACTED]
CC: Kristian G. Andersen [REDACTED]
Subject: RE: Phone call

Jeremy:

I just got off the phone with Kristian Anderson and he related to me his concern about the Furine site mutation in the spike protein of the currently circulating 2019-nCoV. I told him that as soon as possible he and Eddie Holmes should get a group of evolutionary biologists together to examine carefully the data to determine if his concerns are validated. He should do this very quickly and if everyone agrees with this concern, they should report it to the appropriate authorities. I would imagine that in the USA this would be the FBI and in the UK it would be MI5. It would be important to quickly get confirmation of the cause of his concern by experts in the field of coronaviruses and evolutionary biology. In the meantime, I will alert my US. Government official colleagues of my conversation with you and Kristian and determine what further investigation they recommend. Let us stay in touch.

Best regards,
Tony

Anthony S. Fauci, MD
Director
National Institute of Allergy and Infectious Diseases

[REDACTED]
[REDACTED]
National Institutes of Health
Bethesda, MD 20892-2520
Phone: [REDACTED]
FAX: [REDACTED]
E-mail: [REDACTED]

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From: Jeremy Farrar <[REDACTED]>
Sent: Friday, January 31, 2020 5:57 PM
To: Fauci, Anthony (NIH/NIAID) [E] <[REDACTED]>
Subject: Re: Phone call

Thanks Tony

Can you phone Kristian Anderson

[REDACTED]

He is expecting your call now.

Exhibit 9

On 8 Feb 2020, at 22:15, Kristian G. Andersen <[REDACTED]> wrote:

A lot of good discussion here, so I just wanted to add a couple of things for context that I think are important - and why what we're considering is far from "another conspiracy theory", but rather is taking a valid scientific approach to a question that is increasingly being asked by the public, media, scientists, and politicians (e.g., I have been contacted by Science, NYT, and many other news outlets over the last couple of days about this exact question).

To Ron's question, passage of SARS-like CoVs have been ongoing for several years, and more specifically in Wuhan under BSL-2 conditions - see references 12-15 in the document for a few examples. The fact that Wuhan became the epicenter of the ongoing epidemic caused by nCoV is likely an unfortunate coincidence, but it raises questions that would be wrong to dismiss out of hand. Our main work over the last couple of weeks has been focused on trying to *disprove* any type of lab theory, but we are at a crossroad where the scientific evidence isn't conclusive enough to say that we have high confidence in any of the three main theories considered. Like Eddie - and I believe Bob, Andrew, and everybody on this email as well - I am very hopeful that the viruses from pangolins will help provide the missing pieces. For now, giving the lab theory serious consideration has been highly effective at countering many of the circulating conspiracy theories, including HIV recombinants, bioengineering, etc. - here's just one example: <https://www.factcheck.org/2020/02/baseless-conspiracy-theories-claim-new-coronavirus-was-bioengineered/>.

As to publishing this document in a journal, I am currently not in favor of doing so. I believe that publishing something that is open-ended could backfire at this stage. I think it's important that we try to gather additional evidence - including waiting on the pangolin virus sequences and further scrutinize the furin cleavage site and O-linked glycans - before publishing. That way we can (hopefully) come out with some strong conclusive statements that are based on the best data we have access to. I don't think we are there yet.

Best,
Kristian

On Sat, Feb 8, 2020 at 12:38 PM Drosten, Christian <[REDACTED]> wrote:

OK, I see. We should then introduce references to these informal sources in the beginning of the text. Else it reads a bit funny.

Christian

--

Professor Christian Drosten

Director, Institute of Virology

Scientific Director, Charité Global Health

Charité - Universitätsmedizin Berlin

Campus Charité Mitte

[REDACTED]

[REDACTED] Berlin

Germany