Twitter Thread by Billy Bostickson ■■&■ ■

Billy Bostickson ■■&■ ■
@BillyBostickson

1. Finally!

I found the original H1N1-H5N1 "novel" viruses emails! Yes!

https://t.co/MoPgxYJlEv

Kawaoka Busted!

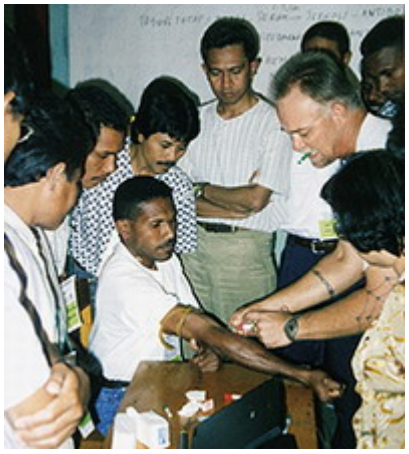
2. Kawaoka Busted!
More email evidence here:
More Smoking Gun Emails From Kobe University Virologist Teridah Ernala Ginting
Acts Of Espionage Against Indonesia by Akiko Makino and Others From Kobe University's "Secret" Lab
https://t.co/6eLE46pA1A

3. NAMRU 2 Indonesia
(where Kawaoka organised theft of viruses)
(Now moved to Phnom Penh)
https://t.co/snRmicOIGN
History:
https://t.co/vEjltSDTOj
Perspectives on the DOD Global Emerging Infections Surveillance System:
GEIS at NAMRU 2, Indonesia (PDF)
https://t.co/SKm22oqBD4

4. NAMRU 2 Indonesia Controversy (2008)
Indonesia Suspends US NAMRU Lab Operations
https://t.co/kLW3zhiDVz
Supari On NAMRU-2
https://t.co/0wPbF4TpTJ
Indonesian Lawmakers Call For NAMRU-2 Probe
https://t.co/S4zZ4TaksW
NAMRU-2 Debate Turns Ugly
https://t.co/O1NbYZAvez

5. NAMRU Indonesia Controversy Part 2
U.S. insists on immunity for all Namru-2 laboratory staff
https://t.co/KelkEqJQTn
A "fact sheet" on NAMRU-2
https://t.co/Z08aLEDIJ4
US Embassy Half Truths:
https://t.co/b0nP0aVIwV
Indonesia: More attacks on NAMRU-2
https://t.co/owYVRjxf7f

6. NAMRU-2 Indonesia Controversy Part 3
US Scientists curses Indonesians:
"A pandemic on both your houses!"
https://t.co/3tDN9sG5RM
US Says Indonesia Stalling On NAMRU-2
https://t.co/6Hrejf2ocP
US-Indonesian debates over bird flu samples involve NAMRU-2
https://t.co/GefodzfHN7



7. NAMRU 2 Indonesia Controversy (Part 4)
Virus, Namru 2 and the New Minister of Health
(Anti Namru Diatribe)
https://t.co/CgLOULSwS7
13 Tedious Pages of Discussion on NAMRU 2 Controversy:
https://t.co/DUBt4D0TrC
Clarification on NAMRU-2's Status
https://t.co/cmuWM4web9

8. INDONESIA RACES TO BUILD BSL-3 LABS (2006)
Wikileaks Classified Cable
https://t.co/YMavlgmzt1
Interesting as it reveals US strategy and motives for involvement in the BSL 3 Program (also applies to China in broad outlines)

7. (C) We see three compelling reasons to offer USG assistance to the BSL-3 sector in Indonesia:

--Biosecurity issues: Early USG involvement through technical and financial assistance would shape the process of building such high-security and potential dangerous labs, increase U.S. influence over the development of the sector, and increase our access to information on the operation of such facilities. U.S. assistance could help ensure that the facility and its staff maintain competence in pathogen security. By working with the facility during initial design, construction, and equipping, communication will become established between the lab and the USG that would prove valuable in the future. Providing assistance would also give us a more sophisticated understanding of which labs would work on disease agents of interest.

9. Research Paper
Towards effective emerging infectious disease surveillance: Cambodia, Indonesia, & NAMRU-2
Sophal Ear (Naval Postgraduate School) 2011
https://t.co/WNac9XB555
collaboration between the DRTA's Office of Strategic Research & Dialogues &]Naval Postgraduate School

This product is the result of collaboration between the Defense Threat Reduction Agency's Office of Strategic Research and Dialogues and Naval Postgraduate School

The views expressed herein are those of the authors and do not necessarily reflect the official policy or position of the Defense Threat Reduction Agency, the Department of Defense, or the United States Government.

Approved for public; distribution is unlimited (unclassified papers only)

Defense Threat Reduction Agency
Office of Strategic Research and Dialogues
David W. Hamon, Director
david.hamon@dtra.mil
Report Number OSRD 2011 025

10. Explainer
I am just padding the background about NAMRU 2 before getting back to the main Kawaoka story involving theft and smuggling of viruses to his laboratory in Japan and his GOF work in Japan and the USA.
It's important to paint the whole picture I think.

11. H5N1 Indonesia - NAMRU 2
interview with Indonesia's health minister, Siti Fadilah Supari
(scroll down for some interesting comments)
https://t.co/LadScWvAkK
Preparing Indonesia:
H5N1, Foucault and Viral Sovereignty through the Lens of Global Health
https://t.co/bd13dtsjOM

12. Biopiracy, Vaccines & Viral Sovereignty
Indonesia & WHO's new Pandemic Influenza Plan
https://t.co/Opg7hkZNFB
Highly Pathogenic Avian Influenza H5N1 Virus:
a 20-year journey of insecure landscapes
https://t.co/DKvUes3OPA
Pages 117-141: Kawaoka & Fouchier's GOF work on H5N1

13. Doctor Hualan Chen from Harbin mentioned in the above dissertation.

The second missed sign was the inconsistent application of policies governing H5N1 research that failed to recognize the global nature of H5N1 research and its non-securitized importance to other countries. In the middle of the H5N1 debates in the United States, Chinese researchers published two studies that used almost identical GOF techniques as Drs. Fouchier and Kawaoka to create aerosolized variations of the H5N1 and H7N1 viruses that were transmissible in mammals (Y. Zhang 2013, Q. Zhang 2013).[14] Hualan Chen of China's National Avian Influenza Reference Laboratory in Harbin, China led both studies, published in the journal *Science*. In a remarkable contrast to the negative treatment Drs. Fouchier and Kawaoka received in the media just one year earlier, the journal *Nature* named Chen one of the top 10 scientists in the world for her work with H5N1 viruses (Butler 2013).

14. Background to Kawaoka's H5N1 GOF work
H5N1 & "Spanish" Flu Reconstruction of 1918-like avian influenza virus stirs concern over GOF experiments
https://t.co/IUD3CzAUaQ
Scientists condemn 'crazy, dangerous' creation of deadly airborne flu virus
https://t.co/4zJuzvPA8W

15. Let's review Kawaoka's research "interests" https://t.co/k6iowyyvK7
E.G:
Ito, Goto, Yamamoto, Tanaka, Takeuchi, Kuwayama, Kawaoka, Otsuki (a Tongue Twister ;)
Generation of a Highly Pathogenic Avian Influenza A Virus From an a virulent Field Isolate by Passaging in Chickens.

YOSHIHIRO KAWAOKA

yoshihiro.kawaoka@wisc.edu
Department of Pathobiological Sciences
Office: 230

TITLES AND EDUCATION

1. Professor of Virology
2. BS, 1978, Hokkaido University, Japan (Veterinary Medicine)

16. Many, many papers!
I am certainly not going to trawl through all 700 or so papers here under the name Kawaoka:
https://t.co/LSpUKMksHr
But you can, if you like?

17. Review of Kawaoka's GOF Research (not only H5N1)
A useful discussion here:
Virologists plan influenza H7N9 GOF experiments (2013)
https://t.co/JBS1UjluYb
The Letter (GOF experiments on H7N9
Fouchier, Kawaoka & 20 co-authors
https://t.co/u6ifRnXmhq

18. The 20 co-authors of the Nature Letter (he Letter (GOF experiments on H7N9 by Fouchier & Kawaoka) are listed separately here with corresponding email addresses:
https://t.co/vNlqAVIjK3
Make of the names what you will, perhaps you recognise some of them?

LETTERS

edited by Jennifer Sills

Gain-of-Function Experiments on H7N9

SINCE THE END OF MARCH 2013, AVIAN A INFLUENZA VIRUSES OF THE H7N9 SUBTYPE HAVE caused more than 130 human cases of infection in China, many of which were severe, resulting in 43 fatalities. Although this A(H7N9) virus outbreak is now under control, the virus (or one with similar properties) could reemerge as winter approaches. To better assess the pandemic threat posed by A(H7N9) viruses, NIAID/NIH Centers of Excellence in Influenza Research and Surveillance (CEIRS) investigators and other expert laboratories in China and elsewhere have characterized the wild-type avian A(H7N9) viruses in terms of host range, virulence, and transmission, and are evaluating the effectiveness of antiviral drugs and vaccine candidates. However, to fully assess the potential risk associated with these novel viruses, there is a need for additional research including experiments that may be classified as "gain-of-function" (GOF). Here, we outline the aspects of the current situation that most urgently require additional research, our proposed studies, and risk-mitigation strategies.

The A(H7N9) virus hemagglutinin protein has several motifs that are characteristic of mammalian-adapted and human influenza viruses, including mutations that confer human-type receptor-binding and enhanced virus replication in mammals. The pandemic risk rises exponentially should these viruses acquire the ability to transmit readily among humans.

Reports indicate that several A(H7N9) viruses from patients who were undergoing antiviral treatment acquired resistance to the primary medical countermeasure—neuraminidase inhibitors (such as oseltamivir, peramivir, and zanamivir). Acquisition of resistance to these inhibitors by A(H7N9) viruses could increase the risk of serious outcomes of A(H7N9) virus infections.

The hemagglutinin proteins of A(H7N9) viruses have a cleavage site consistent with a low-pathogenic phenotype in birds; in the past, highly pathogenic H7 variants (with basic amino acid insertions at the cleavage site that enable the spread of the virus to internal organs) have emerged from populations of low pathogenic strains circulating in domestic gallinaceous poultry.

Normally, epidemiological studies and characterization of viruses from field isolates are used to inform policy decisions regarding public health responses to a potential pandemic. However, classical epidemiological tracking does not give public health authorities the time they need to mount an effective response to mitigate the effects of a pandemic virus. To provide information that can assist surveillance activities—thus enabling appropriate public health preparations to be initiated before a pandemic—experiments that may result in GOF are critical.

Therefore, after review and approval, we propose to perform the following experiments that may result in GOF:

(i) **Immunogenicity**. To develop more effective vaccines and determine whether genetic changes that confer altered virulence, host range, or transmissibility also change antigenicity.

(ii) **Adaptation**. To assist with risk assessment of the pandemic potential of field strains and evaluate the potential of A(H7N9) viruses to become better adapted to mammals, including determining the ability of these viruses to reassort with other circulating influenza strains.

(iii) **Drug resistance**. To assess the potential for drug resistance to emerge in circulating viruses, evaluate the genetic stability of the mutations conferring drug resistance, evaluate the efficacy of combination therapy with antiviral therapeutics, determine whether the A(H7N9) viruses could become resistant to available antiviral drugs, and identify potential resistance mutations that should be monitored during antiviral treatment.

(iv) **Transmission**. To assess the pandemic potential of circulating strains and perform transmission studies to identify mutations and gene combinations that confer enhanced transmissibility in mammalian model systems (such as ferrets and/or guinea pigs).

(v) **Pathogenicity**. To aid risk assessment and identify mechanisms, including reassortment and changes to the hemagglutinin cleavage site, that would enable circulating A(H7N9) viruses to become more pathogenic.

All experiments proposed by influenza investigators are subject to review by institutional biosafety committees. The committees include experts in the fields of infectious disease, immunology, biosafety, molecular biology, and public health; also, members of the lay public represent views from outside the research community. Risk-mitigation plans for working with potentially dangerous influenza viruses, including 1918 virus and highly pathogenic avian H5N1 viruses, will be applied to conduct GOF experiments with A(H7N9) viruses (see supplementary text). Additional reviews may be required by the funding agencies for proposed studies of A(H7N9) viruses (see scim.ag/13BK5Hs).

The recent H5N1 virus transmission con-

CREDIT: YOSHIHIRO KAWAOKA/UNIVERSITY OF WISCONSIN-MADISON

19. The GOF Influenza Debate

Vincent Racaniello, the Propaganda Chief of the GOF virologists cabal discusses the Influenza H7N9 gain of function experiments on Dispatch Radio (2013)

https://t.co/0IXqpBa4qP

Transcript here:

https://t.co/hRhdO29Tkp

YT Link:

https://t.co/GOnYQtdkJe

20. The Voices raising concern

Should We Allow Scientists To Create Dangerous Super-Viruses?

https://t.co/QUUQtgd9As

Bird Flu Paper Is Published After Debate

https://t.co/T9Rfcq8Cjd

Special Science Issue with several papers

https://t.co/0TD8lqtjkp

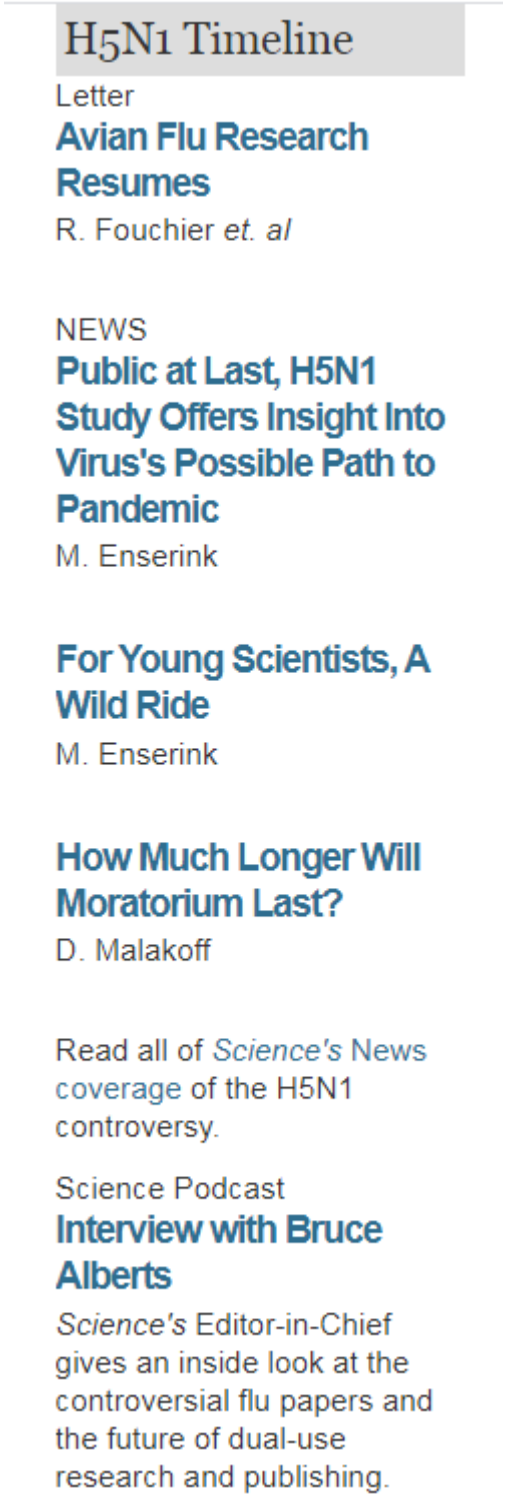
21. More Voices raising concerns (2)

Can Limited Scientific Value of Potential Pandemic Pathogen Experiments Justify the Risks? (@mlipsitch of CWG)

https://t.co/dBB3Bjgp5l

Reply to the Epistemological Perspective on Value of Gain-of-Function Experiments

https://t.co/oSESIYHS0d



22. Debate Continues

Reply to “Can Limited Scientific Value of PPP Experiments Justify the Risks?”

https://t.co/gSDmc81rGN

Cambridge Working Group Statement on PPPs:

https://t.co/y4i0aYR73e

PDF: https://t.co/UqfhPSGVMI

Signatories include Inglesby, Farzan, Lipkin, Mackay, Rambaut

Cambridge Working Group Consensus Statement on the Creation of Potential Pandemic Pathogens (PPPs)

Recent incidents involving smallpox, anthrax and bird flu in some of the top US laboratories remind us of the fallibility of even the most secure laboratories, reinforcing the urgent need for a thorough reassessment of biosafety. Such incidents have been accelerating and have been occurring on average over twice a week with regulated pathogens in academic and government labs across the country. An accidental infection with any pathogen is concerning. But accident risks with newly created "potential pandemic pathogens" raise grave new concerns. Laboratory creation of highly transmissible, novel strains of dangerous viruses, especially but not limited to influenza, poses substantially increased risks. An accidental infection in such a setting could trigger outbreaks that would be difficult or impossible to control. Historically, new strains of influenza, once they establish transmission in the human population, have infected a quarter or more of the world's population within two years.

23. Gryphon Scientific Report (Treasure Trove)
https://t.co/SGOAHH9Cpl
CWG comments:
Marc Lipsitch
https://t.co/3AKCF7JNTF
Stanley Plotkin
https://t.co/jNg2G05MM3
Lynn Klotz
https://t.co/67qBizegw9
Carlos Moreno
https://t.co/blJZYtegrq
Steven Salzberg
https://t.co/GZSypUNHsq

Resources

FINAL SELECTED REPORTS

+ FINAL SELECTED PRESENTATIONS

+ RISK ASSESSMENT PARAMETERS

+ EVENT TREES

+ HUMAN EPIDEMIOLOGICAL AND SOCIOLOGICAL DATA

+ LABORATORY PPE, EXPERIMENT, AND ANIMAL-RELATED SUPPORTING INFORMATION

+ AVIAN INFLUENZA-RELATED SUPPORTING INFORMATION

+ OTHER RISK-RELATED SUPPLEMENTAL MATERIAL

+ BENEFIT ASSESSMENT SUPPLEMENTAL MATERIAL

+ OTHER SUPPLEMENTAL INFORMATION

24. The Gryphon Scientific Report on GOF
Full Report (1009 Pages)
https://t.co/Fkji8LSoMD
Update Summary Risk and Benefit Analysis (RBA) of Gain of Function Research Progress (36 Pages)
https://t.co/KGxkgcsvmB

25. H5NI viral-engineering dangers will not go away!
Governments & funders must urgently address the risks posed by gain-of-function research
https://t.co/5ksiBHdAIz
Scientists are creating a dangerous flu strain, just to prove they can
https://t.co/ItxnAnJgQy

26. Read These Two Letters!
A submission to the
CDC/HHS re Opposition to Lab-engineering of Potentially Lethal Pathogens
https://t.co/3dWUQRePOF
An open letter to the NSABB re the political and
ethical implications of lethal virus development
https://t.co/y9YQMVE4mW

I take this opportunity to register my opposition to lab-engineering of potentially lethal pathogens.

This research pushes the limits of legitimate scientific enquiry and risks global public safety. For example, it is pertinent to note that there were 395 biosafety breaches in the United States between 2003 and 2009 – including seven laboratory-acquired infections – that risked accidental release of dangerous pathogens from high-containment labs.[1]

In regards to this matter, please refer to my open letter dated 31 January 2012 re the political and ethical implications of lethal virus development, addressed to Paul Keim of the National Science Advisory Board for Biosecurity (NSABB). The letter is accessible on the internet via this link: http://bit.ly/AfyAtQ

On the subject of H5N1, the US National Institutes of Health should be brought to account for funding research into making H5N1 more transmissible. As I ask in my letter to the NSABB, noted above, is the US breaching the Biological Weapons Convention[2] by sponsoring the development of a potentially lethal flu virus?

Likewise I question the behaviour of the scientist, Ron Fouchier, who "mutated the hell out of H5N1" and admitted he did something "really, really stupid" when the mutated H5N1 was put into the nose of one ferret, and then transferred to others.[3]

27. Do Ethical Alternatives Exist? Yes!
(Can Someone tell Kawaoka, Fouchier et al and WIV)
Ethical Alternatives to Experiments with Novel Potential Pandemic Pathogens
https://t.co/BOsCuQrj91

Mutation	Predicted Phenotype (Background)	Other Phenotype (Background)
PB2 E627K	Elevated virulence, transmissibility (H5N1, H1N1, H7N7, etc.) [63–66]	Unaffected virulence or transmissibility (H1N1pdm) [67]; decreased fitness (older H5N1) [66]
NA H275Y	Oseltamivir resistance, fitness crippled (H1N1) [68,69]	Oseltamivir resistance, fitness increased in absence of drug (H1N1) [68,70]
HA LS, 158,224,226	Mammalian transmission (H5N1 from Indonesia and Viet Nam) [1,2]	No switch to mammalian sialic acid binding (H5N1 from Egypt) [50]
Polybasic HA cleavage site	High avian pathogenicity (many H5 and H7 viruses) [71,72]	Low avian pathogenicity (four H5 isolates) [73]

HA, hemagglutinin; NA, neuraminidase.
doi:10.1371/journal.pmed.1001646.t001

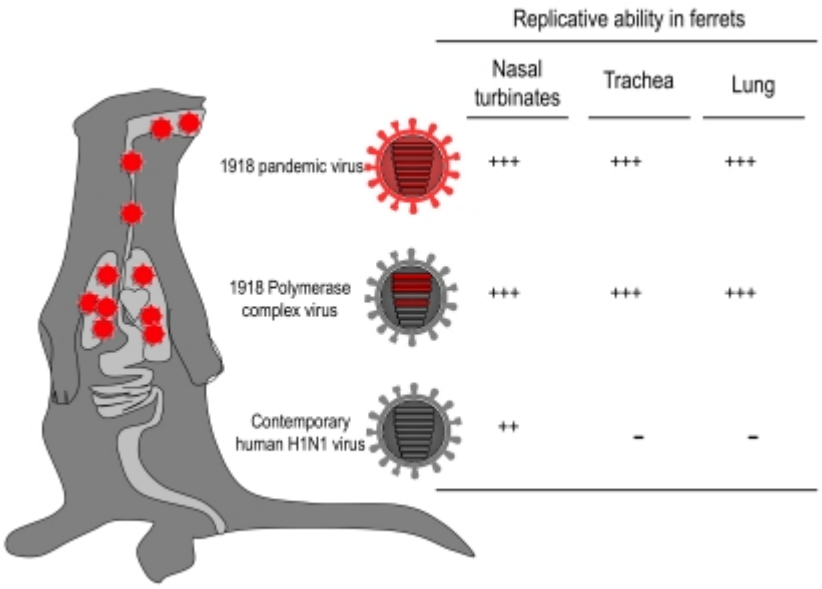
28. Back to Kawaoka's Research (1)
2006 Host Range Restriction & Pathogenicity in Influenza Pandemics
https://t.co/uEWa3GLmQx
and
2008 Receptor specificity of influenza viruses (Japanese)
https://t.co/TwEkuQazH4

Conclusions

Go to:

One might speculate that the next pandemic may be caused by highly pathogenic H5N1 viruses that acquire the ability to be efficiently transmitted among humans, or by H9N2 viruses, which are as prevalent as H5N1 viruses in Asia and in some cases already recognize human receptors. Further investigation of the molecular basis of host range restriction is therefore important. In addition, a better understanding of the mechanisms and consequences of chemokine/cytokine imbalance caused by highly pathogenic avian viruses is essential, as is a greater appreciation for the contributions of other viral properties, such as replicative ability, to pathogenesis.

29. Kawaoka and the 1918 Flu
2011 Pathogenesis 1918 pandemic influenza virus
Watanabe & Kawaoka
https://t.co/Ll190z96Lo
2013 Crosstalk between animal and human influenza viruses
https://t.co/H5w4ph3JKT



30. Break Time!
More to Come if anyone is interested in Kawaoka's work?
Temporary Unroll @threadreaderapp