

One World, One Pandemic and One Health

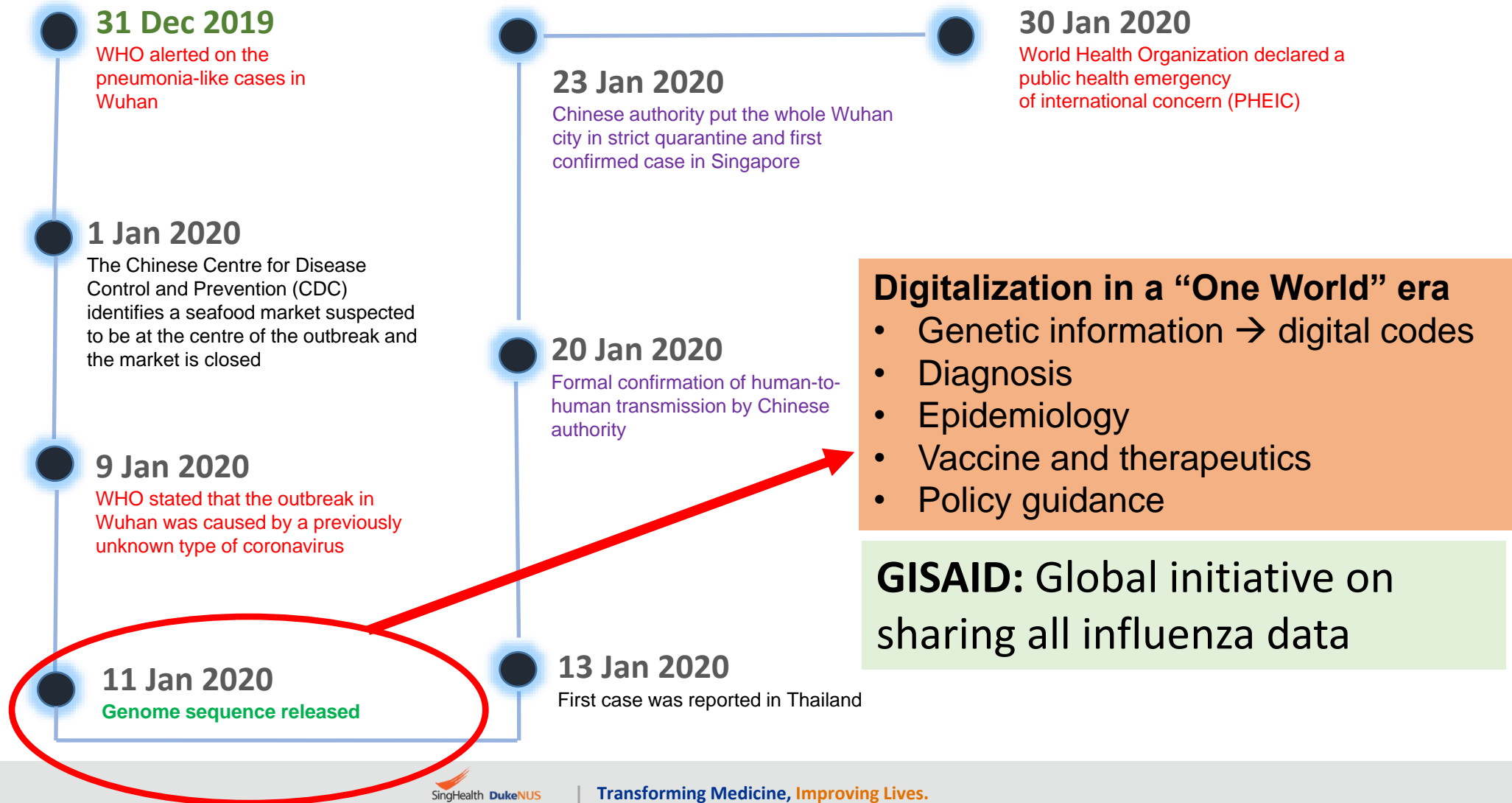
(Enabling Consortiums and Networks)

Linfa WANG

- The key role of virus sequence sharing in combating COVID-19
- WHO working committees/working groups
- The ASEAN network: from virus origin to vaccine follow-up studies
- The SG COVID-19 Research Working Group (RWG)
- cPass – a success story of collaboration and network
- PREPARE: can we do better next time?
- The One Health challenges ahead



Timeline of major early events



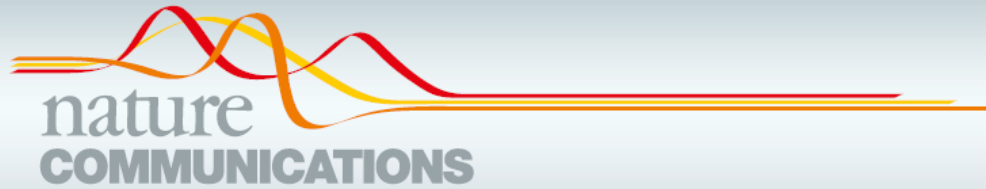
WHO Working Groups

- Emergency Committee
- Reagents and assays
- Animal models
- Vaccines



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ASEAN Collaboration



ARTICLE







<https://doi.org/10.1038/s41467-021-21240-1>

OPEN

Evidence for SARS-CoV-2 related coronaviruses circulating in bats and pangolins in Southeast Asia


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Under Singapore's chairmanship of the ASEAN Ministerial Meeting on Science, Technology and Innovation, and the ASEAN Committee on Science, Technology and Innovation, ASEAN had seen stronger Science, Technology and Innovation (STI) collaboration, notably in intra-ASEAN capabilities to combat COVID-19 and future pandemics.



ASEAN Cooperation Project Proposal for







ASEAN Anti-Covid-19 Sero-Surveillance Study



- Initially chaired by Prof Leo Yee Sin and her Deputy A/Prof David Lye, under guidance from CHS Prof Tan Chorh Chuan
- Composed of leading experts from MOH and key basic and clinical research institutions
- Met on weekly basis (changed to fortnightly) since 22 Jan 2020
- Sharing of information, reagents and resources
- Inter-disciplinary collaboration
- Translational outputs to inform policy and patient care
- World leading in several areas



A SARS-CoV-2 surrogate virus neutralization test based on antibody-mediated blockage of ACE2-spike protein-protein interaction

Chee Wah Tan^{1,13}, Wan Ni Chia^{1,13}, Xijian Qin², Pei Liu², Mark I.-C. Chen^{3,4}, Charles Tiu¹, Zhiliang Hu^{5,6}, Vivian Chih-Wei Chen^{¹}, Barnaby E. Young^{^{3,7,8}}, Wan Rong Sia^{¹}, Yee-Joo Tan^{9,10}, Randy Foo¹, Yongxiang Yi⁵, David C. Lye^{3,7,8,11}, Danielle E. Anderson^{^{1,12}}  and Lin-Fa Wang^{^{1,12}} 



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cPass launched on 15 May 2020



FDA NEWS RELEASE

Coronavirus (COVID-19) Update: FDA Authorizes First Test that Detects Neutralizing Antibodies from Recent or Prior SARS-CoV-2 Infection

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For Immediate Release: November 06, 2020

“The COVID-19 speed”

- 10 March: First discussed the “invention” with IP office
- 20 March: Obtained the “proof of concept” data
- 25 March: Patent application filed
- 26 March: Commercialization partner identified
- 21 April: Paper submitted for peer review
- 23 April: Licensing agreement signed
- 24 April: Kits shipped to WHO diagnostics network lab for assessment
- 30 April: DxDHub lodged dossier to HSA for certification
- 15 May: Commercial kit (cPass) launched from Singapore

Programme for Research in Epidemic Preparedness And Response (PREPARE)



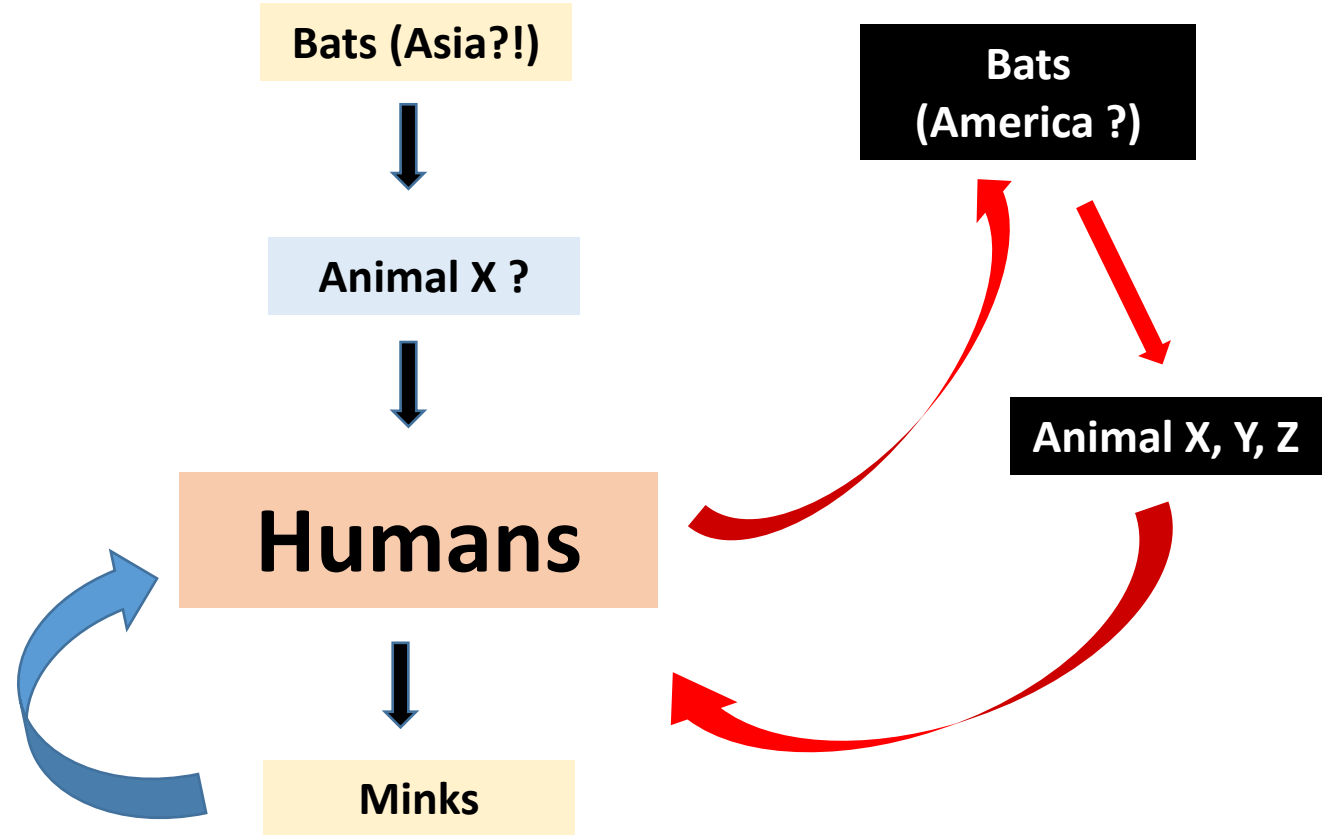
**LONG-TERM
CAPABILITIES**

ID CLINICAL & RESEARCH DATABASES

BIOREPOSITORY FOR CLINICAL SAMPLES, TISSUES & ASSOCIATED DATA

Roles of wildlife animals in EIDs

- Natural reservoir
- Intermediate host
- Amplifying host
- Spillback host
- New “unnatural” reservoir



SUBJECT MATTER AREAS CORONAVIRUS PANDEMIC/BIOHAZARD

White-Tailed Deer Found to Be Huge Reservoir of Coronavirus Infection

By Homeland Security Today November 12, 2021



New U.S. research has shown that white-tailed deer are being infected with SARS-CoV-2, the virus that causes COVID-19 in humans. Antibodies were found in **40% of deer** that were tested from January to March 2021 across Michigan, Pennsylvania, Illinois and New York state. **A second unpublished study** has detected the virus in 80% of deer sampled in Iowa between November 2020 and January 2021.

Such high levels of infection led the researchers to conclude that deer are actively transmitting the virus to one another. The scientists also identified different SARS-CoV-2 variants, suggesting there have been many human-to-deer infections.

- High infection rate as indicated by PCR and serology
- Multiple lineages indicating multiple spillback events
- Asymptomatic infection making them “reservoir-like”



7th world one health CONGRESS
7 – 11 November 2022

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ACADEMIC MEDICAL CENTRE

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& CONVENTION BUREAU

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***Integrating Science, Policy and Clinical Practice:
A One Health Imperative Post-COVID-19***