

# **The US National Academy of Medicine (NAM) International Health Policy Fellowship Seminar**

## **Global coordination on vaccines to counter pandemic threats: Key messages and implications for the Hong Kong SAR**

**Prof. Roger Chung**  
JC School of Public Health & Primary Care  
CUHK Centre for Bioethics  
CUHK Institute of Health Equity  
The Chinese University of Hong Kong

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**Disclaimer:** I am speaking on my own as an individual and not as an official representative of the National Academy of Medicine; the National Academies of Sciences, Engineering, and Medicine; or the study committee. The views expressed are those of my own and not necessarily of the NAM, the National Academies or the study committee.

# NAM 4 Reports on Preparing for Seasonal and Pandemic Influenza Through Lessons Learned from COVID-19



1. *Countering the Pandemic Threat through Global Coordination on Vaccines: The Influenza Imperative*
2. *Globally Resilient Supply Chains for Seasonal and Pandemic Influenza Vaccines*
3. *Vaccine Research and Development to Advance Pandemic and Seasonal Influenza Preparedness and Response: Lessons from COVID-19*
4. *Public Health Lessons for Non-Vaccine Influenza Interventions: Looking Past COVID-19*

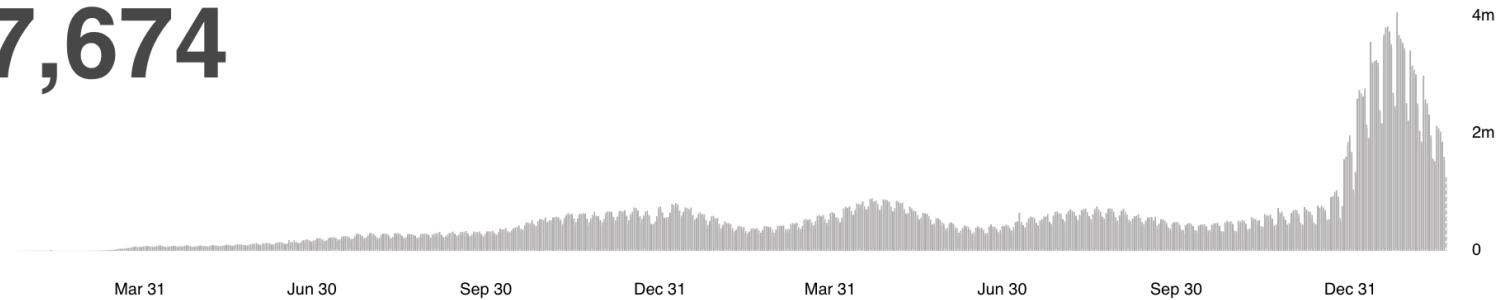
# As of Feb 22, 2022

## Global Situation



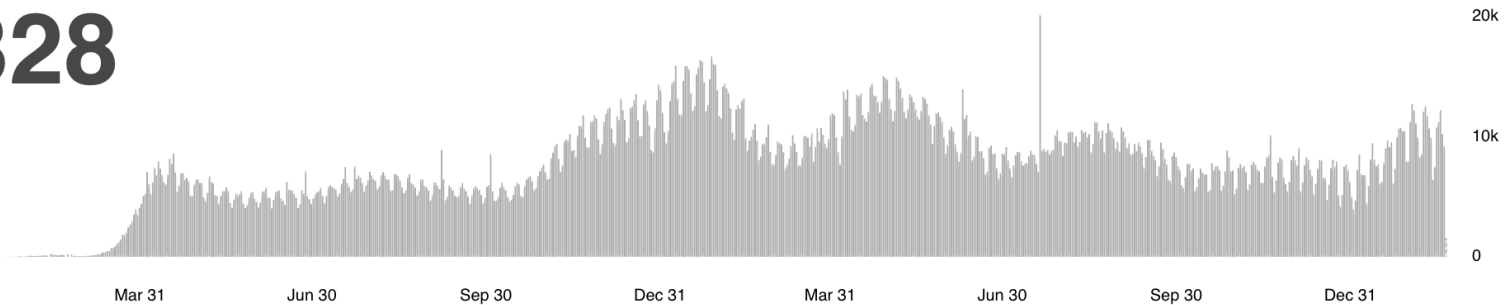
# 423,437,674

confirmed cases




# 5,878,328

deaths



Source: World Health Organization

 Data may be incomplete for the current day or week.



## Background: COVID-19

As of mid-Feb 2022:

- Cases: > 400 mil
- Deaths: ~ 5.8 mil

6.65% loss of global  
gross domestic product  
(GDP) in 2020

54.68% loss of total GDP  
globally, 2020 – 2030  
(Yeyati and Filippini,  
2021)

# Background: Why influenza?

- Influenza deaths: 50 mil, 1918 – 1919
- ~ 1 billion people affected by seasonal flu annually (WHO, 2019a)
- 1/8 of the world's population every year (Palache et al., 2020)
- Novel influenza A viruses: potential pandemic strains
  - Mode of transmission: airborne
  - Short incubation period
- General dismissal of influenza as *“just the flu”*

# Committee of the Report

## Committee members

- **PETER SANDS** (*Chair*), Executive Director, Global Fund to Fight AIDS, Tuberculosis, and Malaria
- **DEVI SRIDHAR** (*Vice Chair*), Professor and Chair of Global Public Health, Usher Institute, University of Edinburgh
- **SALAH T. AL AWAIDY**, Communicable Disease Advisor, Ministry of Health, Oman
- **WILLIAM AMPOFO**, Associate Professor, Virology Department, Noguchi Memorial Institute for Medical Research, University of Ghana
- **PHYLLIS ARTHUR**, Vice President, Infectious Diseases and Emerging Science Policy, Biotechnology Innovation Organization (BIO)
- **CHRISTOPHER T. BAUCH**, Professor of Applied Mathematics, University of Waterloo
- **GIAN LUCA BURCI**, Professor of International Law, Graduate Institute of International and Development Studies
- **KEIJI FUKUDA**, Director and Clinical Professor, School of Public Health, LKS Faculty of Medicine, The University of Hong Kong
- **BRUCE G. GELLIN**, Chief, Global Public Health Strategy, Rockefeller Foundation
- **AMANDA L. GLASSMAN**, Executive Vice President and Senior Fellow, Center for Global Development
- **RICHARD J. HATCHETT**, Chief Executive Officer, Coalition for Epidemic Preparedness Innovations (CEPI)
- **JOHN NKENGASONG**, Director, Africa Centres for Disease Control and Prevention
- **CHARLES “OK” PANNENBORG**, Chief Health Scientist and Director, World Bank (Retired)
- **ALEXANDRA L. PHELAN**, Assistant Professor, Center for Global Health Science and Security, Georgetown University Medical Center, Adjunct Professor, Georgetown University Law Center
- **CHRISTOPHER SNYDER**, Joel and Susan Hyatt Professor of Economics, Department of Economics, Dartmouth College
- **CHARLOTTE WELLER**, Head of Prevention, Wellcome Trust

## Study Staff

- **JANELLE WINTERS**, Study Director
- **CLAIRE MOERDER**, Research Associate (*until June 2021*)
- **ERIKA JAUREGUI**, Research Associate (*from June to August 2021*)
- **INEZ ADAMS**, Research Associate (*from June to August 2021*)
- **TOCHI OGBU-MBADIUGHA**, Senior Program Assistant (*from April 2021*)
- **EMILIE RYAN-CASTILLO**, Senior Program Assistant
- **PATRICIA CUFF**, Senior Program Officer, Board on Global Health
- **JULIE PAVLIN**, Senior Director, Board on Global Health

## Consultants

- **FRAN SHARPLES**, Science Writer
- **ROGER YAT-NORK CHUNG**, The Chinese University of Hong Kong, National Academy of Medicine International Health Policy Fellow
- **ANNA NICHOLSON**, Science Writer



## The Premise of the Report

How can the **global health community** move as quickly as possible to develop and produce safe and effective vaccines and equitably immunize as many people as possible worldwide?

# Governance and financing structures required

Surveillance

Pathogen sharing

Partnerships for technology (R&D and vaccine optimization) and manufacturing (vaccine scale-up and facilities)

Access and financing (mechanisms to “push” and “pull,” procure, and nationally deploy vaccines)



# Foundational prerequisite

A geopolitical context in which one can speak meaningfully of a **global community** that can take at least some degree of coordinated collective action (i.e., base level of coordination among leading states)

- NOT global consensus on everything
- NOT involvement of every country in every effort

Foundational prerequisite:  
Cohesion and commitment to  
a global common purpose across G7 and G20

G7



G20

The Group of Twenty

## UN's international organizations



**World Health Organization**



**Food and Agriculture Organization of the United Nations**

**The Independent Panel**  
FOR PANDEMIC PREPAREDNESS & RESPONSE



## International organizations



## Global partnerships and coalitions



## Development banks



ASIAN DEVELOPMENT BANK



## Intergovernmental forums



## Regional intergovernmental alliances



## Other international/national organizations



## International treaty



**Convention on Biological Diversity**

## Key findings & Recommendations

1. Governance and coordination
2. Surveillance
3. Pathogen sharing
4. Public-private partnerships to accelerate vaccine development
5. An influenza vaccine moonshot
6. Manufacturing scale-up and supporting geographically distributed hubs
7. Last mile to the goal of vaccination

# Findings 1

## Governance and coordination

### Pre-existing arrangements for influenza

- More coordinated and global than other pathogens
- Constitute a functional (if limited) “ecosystem” (i.e., technical and policy systems)
  - The vaccine strain selection process for surveillance
  - Relations between the public and private sectors
  - Access and benefit system (ABS)

# Findings 1

## Governance and coordination

### Pressing needs to integrate actions

- To strengthen preparedness for pandemic influenza with interventions to improve it for other pathogens (esp. respiratory viruses)
- Integrated **governance, financing, technical, and operational architecture** that can address all respiratory virus pandemic threats
  - Should not undermine what is already in place
  - But should move away from disease-specific, siloed systems
    - E.g. Global Influenza Surveillance and Response System+ (GISRS+), WHO



- *Since 1952 under WHO*
- *Comprises national influenza centers in 124 WHO member states*

# Recommendation 1

## Governance and coordination

**WHO** to develop an **integrated agenda** to take on this task, which should include

- Surveillance and information sharing
- Development, manufacturing, and deployment of vaccines and other essential components of the vaccine manufacturing supply chain

This should comprise a key component of the overarching agenda **for pandemic preparedness and response (PPR)**, encompass pandemic influenza, and build on existing mechanisms for coordination in the influenza arena



**World Health  
Organization**



# Recommendation 1

## Governance and coordination

**Member states** need to task the **WHO** to:

- Assume **leadership**, and with collaboration from relevant multilateral partners, propose a **framework for strengthened surveillance systems and information sharing** at country, regional, and global levels
- Work jointly with existing international and stakeholder organizations with expertise in vaccine R&D, manufacturing coordination and supply chain management, and deployment, in consultation with vaccine manufacturers, to develop a **framework for improved global coordination of vaccine development, manufacturing, and deployment** for respiratory pathogens with pandemic potential



- *Animal disease control*
- *Since 1924*
- *Recognized by WTO with 182 member states*



**Food and Agriculture  
Organization of the  
United Nations**

- *Food security*
- *Since 1945*
- *197 member states*



**World Health  
Organization**



**C E P I**

- *Coalition for Epidemic Preparedness Innovations*
- *Finance independent R&D of vaccines against EID (non-profit)*
- *Since 2017*



- *PPP to increase equitable access to vaccines*
- *Since 2000*



## Findings 2 Surveillance

Lack of modern, globally **integrated** surveillance system in place → threat to national, regional and global health security

- Insufficient financing and political will
- Not only a LMIC problem

## Findings 2 Surveillance

Shared platform that work across silos (including human and animal health and agriculture) is needed

- **Commonalities** (e.g. standardized data and systems) despite differences (e.g. scientific expertise and specimen collection requirements) across different pathogens

## Findings 2 Surveillance

National surveillance system has **positive externalities** for other countries

- External financing justified when domestic resources are inadequate

## Findings 2 Surveillance

The **Independent Panel for Pandemic Preparedness and Response (IPPPR)** is working on recommendations for institutional mechanisms for surveillance (including a global viral surveillance network)

- Needs to support **country ownership**
- Needs to cover **critical influenza data needs** as an integrated system (including genomic sequences, specimens for testing, and viruses from human and animal sources)



- *Established by WHO Director-General*
- *Since September 2020*

## Recommendation 2

### Surveillance

With urgency (over the next 3-5 years), the **G7** and **G20** should ensure that increased **investments** are made in surveillance systems for pathogens with pandemic potential, which support and encompass **every country and region**, by doing the following...



## Recommendation 2

### Surveillance

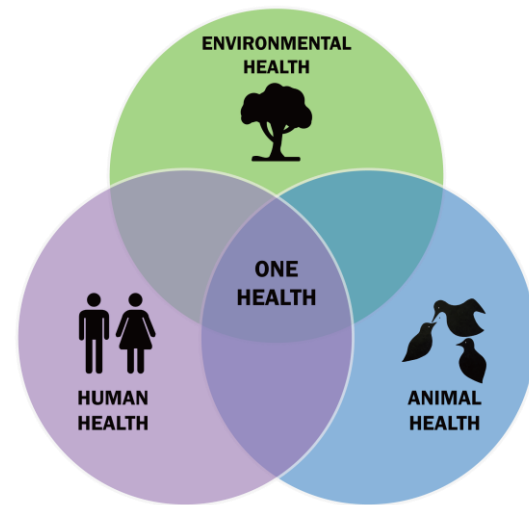
1. To create **incentives, structures, and pathways** for key stakeholders for developing and implementing integrated surveillance
  - Including firmer support for zoonotic surveillance in the framework of **One Health** programs, e.g. through WHO/OIE/FAO stakeholders



Food and Agriculture  
Organization of the  
United Nations



World Health  
Organization



## Recommendation 2 Surveillance

2. To strengthen and finance **regional** surveillance structures and networks through partnerships between regional development banks and organizations



- Association of Southeast Asian Nations (ASEAN)
- Intergovernmental
- Since 1967
- 10 member states in SE Asia



- Asian Development Bank (ADB)
- Since 1966
- 68 member regions (Japan-led)



- Asian Infrastructure Investment Bank (AIIB)
- Since 2016
- 105 member regions (China-led)



- Organization of Islamic Cooperation (OIC)
- Intergovernmental
- Since 1969
- 57 member states as collective voice of Muslim world



- Gulf Cooperation Council
- Intergovernmental
- Since 1981
- 6 member monarch states



- Islamic Development Bank (ISDB)
- Since 1975
- 57 member states (Saudi-led)

## Recommendation 2

### Surveillance

3. To ensure that the **financing mechanism** selected by the **G7/G20** for PPR more broadly includes sustainable funding for surveillance for **respiratory pathogens** (esp. those with pandemic potential), at the national and regional levels
- The governance should include relevant international agencies in addition to the development banks and WHO



- International Fund for Agricultural Development (IFAD)
- UN specialized agency to address root causes of hunger in developing countries
- Since 1977
- 177 member states



- World Food Program (WFP)
- UN specialized agency on food assistance
- Since 1961
- Offices in 80 countries



Food and Agriculture  
Organization of the  
United Nations



World Health  
Organization



## Findings 3

### Pathogen sharing



## The Pandemic Influenza Preparedness (PIP) Framework (2011)

- Supports a critical WHO global surveillance system needed for influenza
- Establishes a multilateral agreement that places **access and benefit sharing (ABS)** and **sharing of viruses** of pandemic potential on an equal footing
- Avoids bilateral transactional approach
- Reflects the importance of transparency, equity, efficiency and accountability shared by countries, industry and WHO



- *Developed by WHO member states*
- *Since 2011*
- *To strengthen sharing of influenza viruses; and to increase access of developing countries to vaccines and other supplies*

**Incorporation of principles into the foundations of any future pandemic instrument/treaty**

## Findings 3

### Pathogen sharing

# The Nagoya Protocol on Access and Benefit-sharing (2014)

- Seasonal pathogen sharing has increasingly become a problem due to added bureaucracy and regulations → alternative virus strains for vaccines being used
- Sharing of genetic sequence data may be delayed due to uncertainty of whether it falls under Nagoya Protocol or PIP



Convention on  
Biological Diversity

Urgency of ensuring rapid access and sharing of genetic sequence data during pandemic for genomic surveillance of variants and for vaccine development

- *Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization to the Convention on Biological Diversity*
- *International agreement since 2014 as a supplementary to the multilateral treaty of Convention on Biological Diversity (1993)*
- *Established the rights of national governments to determine access to their genetic resources, restricting access to biological resources based on mutually agreed upon terms, prior informed consent, and fair and equitable benefit sharing practices → conflict with the objective of public health response*

Type of Pathogen	Falls under the PIP Framework	Falls under the Nagoya Protocol	Coordinated by an existing multilateral mechanism
Influenza Viruses with Human Pandemic Potential	Yes	Yes	Yes
Seasonal Influenza	No	Yes	No
Genetic sequence data (Influenza)	No	Not clear	No
Other pathogens	No	Yes	No
Genetic sequence data (Other pathogens)	No	Not clear	No

Adapted from Huvos et al., 2020

# Recommendation 3

## Pathogen sharing

The **World Health Assembly (WHA)** should:

- Explicitly clarify that the **PIP Framework** covers **genetic sequence data**
- Use established **PIP Framework principles** as a foundation for future WHO member state agreements (or advocate for their use in agreements negotiated by other international organizations) to cover a **broader range of pathogens** (and their genetic sequence data) for ABS



**World Health  
Organization**



# Recommendation 3

## Pathogen sharing

Specifically, the WHA (with the support of the UN) need to:

1. Establish **accountability and compliance monitoring** for member states and other parties in the **PIP Framework** (and future agreements) on ABS
2. Incorporate the principles of **equity, shared accountability, and multilateralism** in any future pandemic treaty or instrument
  - Ensure that the surveillance systems are publicly recognized to be a **global public good**



**World Health  
Organization**



# Recommendation 3

## Pathogen sharing

Specifically, the WHA (with the support of the UN) need to:

3. Develop a mechanism for countries to share viruses openly and rapidly, including their **genetic sequences** and other essential supporting laboratory and epidemiological data for both risk assessment and risk management
  - **Incentives** for industry and member states to share benefits and products (vaccines, therapeutics, and diagnostics), and to facilitate transferring technology



**World Health  
Organization**



# Recommendation 3

## Pathogen sharing

Specifically, the WHA (with the support of the UN) need to:

4. Request that the WHO secretariat approach the **Convention on Biological Diversity (CBD)** secretariat to initiate a process for allowing the agreement to bypass some **Nagoya Protocol** requirements while remaining consistent with its objectives
  - Reinforce that any ABS portion of the agreement will not deter innovation or act as a disincentive for industry participation



## Findings 4

### PPP to accelerate vaccine development

PPPs with industry have allowed development of efficacious **platform technology-based vaccines** before and during COVID-19 with the potential to

- Revolutionize effectiveness, speed, and ability to scale-up production of influenza vaccines
- Overcome some intrinsic constraints of egg-dominated ecosystem

Difficulties:

- High mutation rate of influenza → significant investment in early R&D
- Intellectual issues in PPP



# Findings 4 PPP to accelerate vaccine development

CEPI

- *Coalition for Epidemic Preparedness Innovations*
- *Finance independent R&D of vaccines against EID (non-profit)*
- *Donations from public, private, philanthropic and civil society organizations*
- *Since 2017*

Several existing organizations may be able to lead large-scale R&D and clinical trials for influenza platform technologies, including large-scale global action in LMICs, if they are given **expanded mandates** matched with appropriate funding and can identify **stable markets** for their products



- *Biomedical Advanced Research and Development Authority, U.S. Department of Health and Human Services (US BARDA)*
- *Medical countermeasures (e.g. bioterrorism and pandemic)*
- *Since 2006*



- *EU HERA*
- *Assess health threats, research, ensure availability*
- *Since Sept 2021*

## Recommendation 4

PPP to accelerate vaccine development

The **Global Health Threats Board** (proposed in June 2021) (or similar governance structure) created by the **G7/G20** PPR agenda, should negotiate to expand the mandates of **CEPI**, **US BARDA**, the **EU HERA**, and **equivalents** elsewhere as appropriate, to **support government-industry partnerships for R&D** for influenza and other respiratory viruses with pandemic potential



## Recommendation 4

### PPP to accelerate vaccine development

Partnerships should focus on optimizing each industry partner's **platform**, using the following structure:

- The G7 and G20 member nations (e.g., through the **Global Health Threats Board**) should name **a global coordination body** to specifically coordinate global and regional government-industry partnerships for influenza vaccines
  - E.g. **CEPI**, with access principles built in, is a possible choice



## Recommendation 4

### PPP to accelerate vaccine development

Partnerships should focus on optimizing each industry partner's **platform**, using the following structure:

- Countries that fund vaccine R&D should ensure that R&D for pandemic influenza is part of their funding portfolio and strive to identify investment synergies to maximize returns on investments
  - Regional organizations should support the mobilization of government-industry partnerships



## Recommendation 4

### PPP to accelerate vaccine development

Partnerships should focus on optimizing each industry partner's **platform**, using the following structure:

- Have **affiliated teams** to
  - Identify promising technologies and optimize them for the field
  - Consider investments required to reach efficiency yields
- Support Phase I–III **clinical trials** and early **dosing trials**
- Build-in **workforce development training** for areas of expertise required to be '*at the table*' for technology transfer of these products



Horizon 2020  
European Union funding  
for Research & Innovation

## Recommendation 4

### PPP to accelerate vaccine development

Partnerships should focus on optimizing each industry partner's **platform**, using the following structure:

- Share workforce development requirements with **CEPI**, the **WHO**, and other relevant **multilateral partners**
- To help countries identify and fill gaps in ministries of health, labor, and economics expertise before a pandemic



**World Health  
Organization**

## Findings 5

### An influenza vaccine “moonshot”

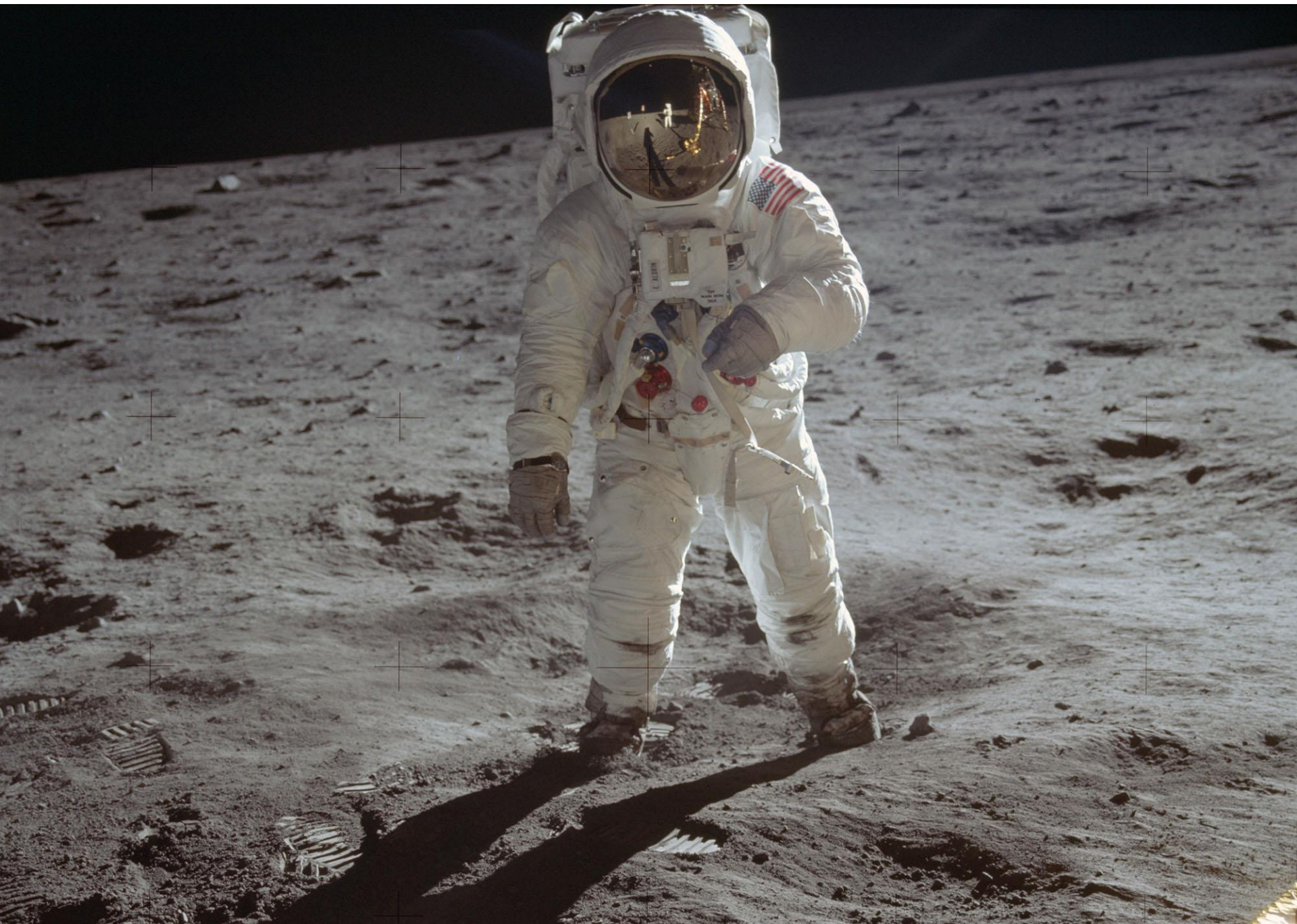
#### Currently:

- Seasonal influenza vaccines are reformulated annually to target the viral antigens anticipated to circulate that year
- Influenza can develop genetic mutations → virus with no existing population immunity

#### Moonshot:

- A *universal* influenza vaccine that can induce immunity against all/most influenza A strains







# Findings 5

## An influenza vaccine “moonshot”

### Requirements

- Major intensification of **research**
  - E.g., computational and systems biology, bioinformatics, AI, deep learning, machine learning, and HIV/AIDS and cancer immunotherapy research communities
- Increased **funding**
  - **Push** (incentivizing leadership) and **pull** (advance market commitments , AMC)
  - **Potential leader:** CEPI (with funding from governments and private, philanthropic, civil society organizations)

CEPI

# Recommendation 5

## An influenza vaccine “moonshot”

The **Global Health Threats Board** (or similar governance structure) created by the **G7/G20** PPR agenda, working with other relevant organizations, should initiate a dedicated “moonshot” program to incentivize development, licensure, and eventual procurement of a universal influenza vaccine candidate, with the following components:

1. A **“push”** element for universal influenza vaccine R&D, which could be led by **CEPI** with input from **BARDA**, the **US CDC**, the **HERA**, the **WHO**, or other agencies that operate beyond the vaccine exploratory science phase and have a stake in **market** shaping (e.g. **multilateral actors, development banks, philanthropies** including trade and global financing institutions of the US, China, and the EU, such as the **EIB** and **AIIB**)



## Recommendation 5

### An influenza vaccine “moonshot”

The **Global Health Threats Board** (or similar governance structure) created by the **G7/G20** PPR agenda, working with other relevant organizations, should initiate a dedicated “moonshot” program to incentivize development, licensure, and eventual procurement of a universal influenza vaccine candidate, with the following components:

2. A **“pull”** element (an AMC) to ensure procurement of resultant universal influenza vaccines, with technical leadership from Gavi and UNICEF



## Recommendation 5

An influenza vaccine  
“moonshot”

Couple with a parallel effort  
for **coronaviruses** or other  
**respiratory viruses with  
pandemic potential** that  
produce variants of concern

## Findings 6

Manufacturing  
scale-up and  
supporting  
geographically  
distributed  
hubs

Current demands for seasonal influenza vaccine vary widely among countries and are not sufficient to support the expansion required to meet pandemic demands

## Findings 6

Manufacturing  
scale-up and  
supporting  
geographically  
distributed  
hubs

**Regional / Geographically distributed manufacturing hubs**  
(diversification of number, locations and types of platforms of these facilities)

- To **counter vaccine nationalism** and promote equitable access through **self-sufficiency**

*(Balanced with)* Increasing overall scale of **global vaccine production capacity**

- To reduce probability and extent of **rationing** in pandemic

## Findings 6

### Manufacturing scale-up and supporting geographically distributed hubs

Requirements for successful and sustainable distributed manufacturing

- Strong **government commitment** and **industry involvement**
- Compliance with **Good Manufacturing Practices** in a robust policy and regulatory environment
- Strong **business model**
- A **business case** that provides for national plans
- **Workforce training** for technology transfer and regulatory capacity

## Recommendation 6

Manufacturing scale-up and supporting geographically distributed hubs

The **Global Health Threats Board** or similar governance structure created by the G7/G20 PPR agenda should initiate a *long-term* (10-20+ years) multilateral partnership to:

- **Track emerging technologies** that may be targets for technology transfer for vaccines for influenza
- Promote **industry partnerships** with geographically distributed hubs
- Provide **technical training**





## Recommendation 6

Manufacturing scale-up and  
supporting geographically  
distributed hubs

What're needed?

1. An **international entity** to  
assume responsibility for  
**catalyzing voluntary  
technology transfer  
initiatives** for platform  
technologies



## Recommendation 6

Manufacturing scale-up and supporting geographically distributed hubs

What're needed?

2. The structure's **governance** should build on and expand upon:
  - a) **WHO** and **COVAX's** work on the COVID-19 mRNA hub to include a diverse portfolio of technologies capable of providing protection against diverse threats with pandemic potential
  - b) **COVAX Vaccine Manufacturing Taskforce** to work with vaccine manufacturing bodies to identify supply chain inputs and needs across a variety of vaccine candidates



**COVAX**



## UN's international organizations



**World Health Organization**



**Food and Agriculture Organization of the United Nations**

**The Independent Panel**  
FOR PANDEMIC PREPAREDNESS & RESPONSE



## International organizations



## Global partnerships and coalitions



## Development banks



ASIAN DEVELOPMENT BANK



## Intergovernmental forums



## Regional intergovernmental alliances



## Other international/national organizations



## International treaty



**Convention on Biological Diversity**

## UN's international organizations



**World Health Organization**



The Independent Panel



Food and Agriculture Organization of the United Nations



THE WORLD BANK  
IFC

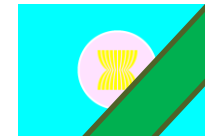


unicef

## Intergovernmental forums



## Regional intergovernmental organisations



## International organizations



WORLD ORGANISATION FOR ANIMAL HEALTH

## Global partnerships and coalitions



CEPI



unicef



World Health Organization

# COVAX

- COVID-19 Vaccines Global Access (COVAX)
- One of the four pillars of the Access to COVID-19 Tools Accelerator (G20 initiative)
- Equitable access to COVID-19 vaccines for LMICs
- Joined by 184 countries

## Recommendation 6

Manufacturing scale-up and supporting geographically distributed hubs

What're needed?

3. Development of **platforms** suited to the production of vaccines (or therapeutics) for other pathogens of national or regional importance in addition to seasonal influenza



COVAX



## Recommendation 6

Manufacturing scale-up and  
supporting geographically  
distributed hubs

What're needed?

4. Plans for **geographically distributed hub training** requirements, e.g.  
vaccine regulatory needs  
and vaccine product  
sourcing



COVAX





## Recommendation 6

Manufacturing scale-up and supporting geographically distributed hubs

What're needed?

5. Encourage countries to consider whether they should build **new production capacity** of key manufacturing inputs for vaccine manufacturing



COVAX





## Recommendation 6

Manufacturing scale-up and supporting geographically distributed hubs

What're needed?

6. Dedicated **funding** to support these activities from the **World Bank** and **regional development banks**, in conjunction with the **International Finance Corporation (IFC)**



COVAX



- IFC = the private sector arm of the World Bank Since 1956
- 185 member countries

## Findings 7

### Last mile to the goal of vaccination

Vaccine availability  $\neq$  Vaccination rates

- Many countries, esp. LMICs, lack adult vaccine **deployment** plans, systems and experience
- “Chilling” vs **“Warming”** market support for vaccines
- Vaccine financing programs often focus on procurement rather than supporting **infrastructure that ensures effective use** (i.e., technical guidance on vaccine planning, operational plans and capacity, assessment of country’s readiness, designated financial resources)

## Recommendation 7

Last mile to the goal of  
vaccination

**UNICEF, Gavi and relevant  
national and regional  
organizations** (including  
governments) should be given  
**designated funding** to introduce  
and deploy next-generation  
seasonal influenza vaccines to  
support scaled-up manufacturing  
capacity



## **Recommendation 7**

### Last mile to the goal of vaccination

**WHO regional offices** should work with countries to do more extensive assessments of their readiness to reach appropriate populations, to enable work plans by 2023:

- An analysis of what infrastructure (e.g., data and digitization of immunization records) built for **COVID** can be adapted, strengthened, and sustained
- Advising member states on **best practices** used in countries that had high immunization rates during COVID-19
- Assisting member states to look at their data and logistics systems for monitoring coverage and for tracking **vaccine safety** and on the options for adopting **no-fault compensation**



## Key findings & Recommendations

1. **Governance and coordination**
  - Aligned pandemic preparedness and response for **respiratory pathogens** with pandemic potential
2. **Surveillance**
  - Stable financing for integrated, modern, and timely **respiratory virus surveillance for pathogens** with pandemic potential
3. **Pathogen sharing**
  - Limitations and potential of the **PIP Framework** and **Nagoya Protocol**
4. **Public-private partnerships to accelerate vaccine development**
  - Structuring global partnerships to support R&D for **influenza platform technologies**
5. **An influenza vaccine moonshot**
  - Financing and organizing for transformational **universal vaccine** R&D, licensure, and procurement
6. **Manufacturing scale-up and supporting geographically distributed hubs**
  - For influenza vaccine **manufacturing** and **supply chain** capacity
7. **Last mile to the goal of vaccination**
  - Generating influenza vaccine demand through **globally coordinated deployment activities**

# COUNTRIES AND AREAS OF THE WHO WESTERN PACIFIC REGION

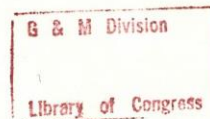




# Hong Kong and Vicinity

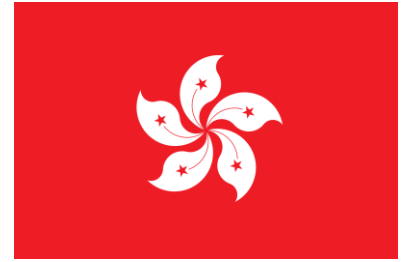


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# Hong Kong SAR (China)



## Demographics & Geography

- 7.482 million (2020)
- Ethnically homogeneous (~92% Chinese)
- Area: 1,106 km<sup>2</sup> (428.64 sq mi)

## Socioeconomically developed metropolitan area

- GDP (USD) per capita: \$46,611 (2020)
  - #25 in the world
  - #4 in Asia
- Not a place for manufacturing but financing

## 1997 change of sovereignty

- A special administrative region of China

# Hong Kong SAR's memberships

## UN's international organizations



One of 37 member areas in Western Pacific region; assigned in the 6<sup>th</sup> WHA in 1953; Secretary for Food and Health Bureau attended WHA as part of the Chinese delegation



One of the two National Influenza Centers in China; and one of the 13 H5 Reference labs in the world



Not a standalone member (China)



Food and Agriculture Organization of the United Nations

Not a standalone member (China)



Not a standalone member (China)



UNICEF HK committee is an NGO for fundraising and advocacy for children's rights

## International organizations



Not a standalone member (China)



Convention on Biological Diversity

Extended towards HK in 2011

## International forums



Not a member but part of China which is a member country

## Development banks



ASIAN DEVELOPMENT BANK

Member since 1969



Prospective member since 2017

## Treaty

# AIIB Welcomes HK Contribution of USD10 Million to Help Low-Income Countries in Asia

July 26, 2018



# Other partnerships

## COVAX

CEPI   

### The Government of the Hong Kong Special Administrative Region **Press Releases** October 12, 2021

HKSAR Government donates 7.5 million doses of AstraZeneca COVID-19 vaccine to COVAX Facility

\*\*\*\*\*

The Government announced today (October 12) that the Hong Kong Special Administrative Region Government has reached a tripartite agreement with Gavi, the Vaccine Alliance and the drug manufacturer AstraZeneca on the donation of 7.5 million doses of the AstraZeneca COVID-19 vaccine to the COVAX Facility (COVAX).

Currently, Hong Kong has procured and authorised a total of 15 million doses of the Sinovac vaccine and the Comirnaty vaccine for emergency use. Under a two-dose regime, the procured quantity is sufficient for vaccination by the entire Hong Kong population. It is also expected that Sinovac and the German drug manufacturer BioNTech/Fosun Pharma can continue to provide stable supplies of vaccines to Hong Kong according to the purchase agreement having regard to Hong Kong's needs. In view of this, there is no need for the 7.5 million doses of AstraZeneca vaccine procured to be delivered to Hong Kong.

The World Health Organization (WHO) has indicated repeatedly that no less than a global effort is required to end a global pandemic and "no one is safe until everyone is safe". According to a statement made by the WHO, the global picture of access to COVID-19 vaccines is still unacceptable. Only 20 per cent of people in low- and lower-middle-income countries have received a first dose of vaccine compared to 80 per cent in high- and upper-middle-income countries. The vaccines donated by the HKSAR Government to COVAX will be donated to COVAX Advance Market Commitment (AMC) Eligible Economies (Note). The 7.5 million doses will be delivered before the second quarter of 2022 by shipments in batches.

The Government spokesman said, "While donating the AstraZeneca vaccine to COVAX, the HKSAR Government will maintain our participation in COVAX for access to other types of vaccines which cannot be otherwise procured through bilateral purchase agreements. However, we will only exercise our right to make the purchase after carefully considering the needs of Hong Kong, the scientific evidence on the vaccines, etc.

"As at October 11, over 67 per cent of the public have received the first dose vaccine. We will continue to press ahead with the vaccination of target groups, particularly the elderly who are over 70 years of age to protect them from serious illness if they were infected and at the same time to build a protective shield in Hong Kong. Furthermore, we will consider experts' advice and make reference to international experiences and overseas practices, and continue our discussion with drug manufacturers on the purchase of vaccine booster doses or next generation vaccines which can better address variants of concern."

## CEPI

### CEPI and University of Hong Kong expand partnership to develop intranasal COVID-19 vaccine candidate

18 Mar 2021

By CEPI

COVAX



Credit: Hong Kong University

# What can HK do?

Recommendation	To participate in the discussions and explorations for:
1. Governance and coordination	Supporting in the <b>platform of WHA</b> the integrated agenda of governance, financing, technical, and operational architecture with partnership of the other organizations (e.g. CEPI, Gavi)
2. Surveillance	Supporting <b>financing</b> for regional surveillance structures through partnerships with <b>regional development banks</b> (e.g. AIIB and ADB) and organizations for pathogens with pandemic potential
3. Pathogen sharing	Follow national level policy
4. PPP for vaccine development	Supporting <b>funding</b> platform technology-based vaccine R&D for pandemic influenza through PPP
5. An influenza vaccine moonshot	Supporting <b>funding</b> universal influenza vaccine R&D through <b>regional development banks</b> (e.g. AIIB)
6. Manufacturing	Supporting geographically distributed hubs through <b>funding</b> from <b>regional development banks</b> for other countries (e.g. AIIB and ADB)
7. Last mile	Working with the <b>WHO regional offices</b> in assessing the readiness to deploy next-generation influenza vaccines

# Some final thoughts

Vaccines do not save lives, vaccinations do

- Deployment plan is equally important
- Mechanisms to tackle the misinformation phenomenon need to be in place

“Countering the pandemic threat of *influenza*” should be reframed as “countering the pandemic threat of *influenza within a wider respiratory pathogen*” PPR framework

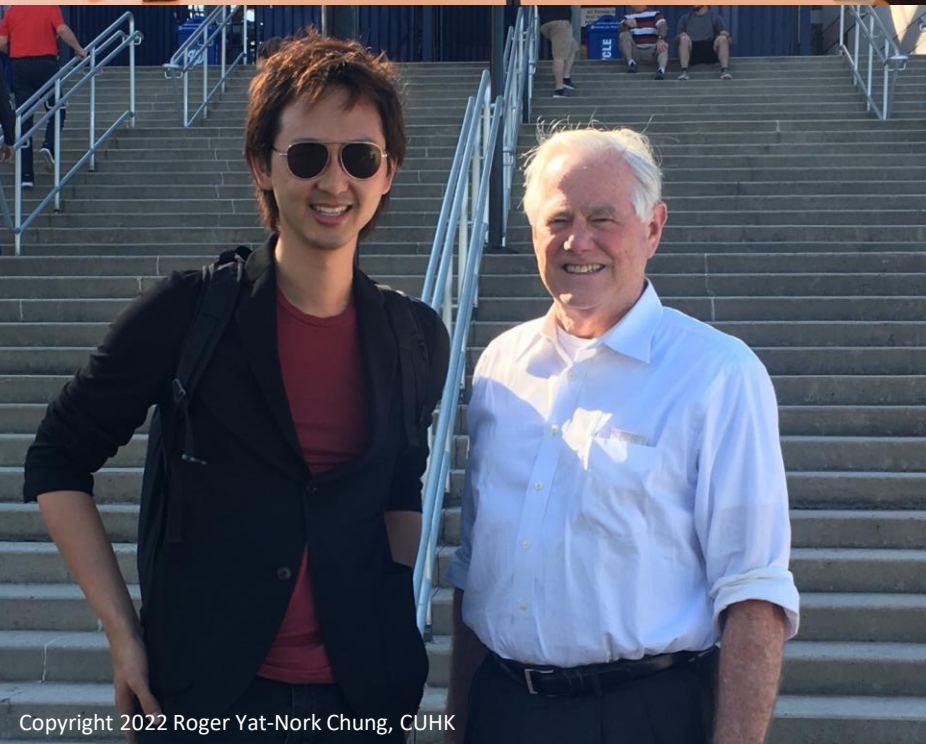
It is a global imperative, although regional support is important – a cosmopolitan (rather than statist) approach is necessary and appropriate because pandemic is a global not only a national/regional matter



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## **Roger Chung, PhD, MHS**

- JC School of Public Health & Primary Care
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- The Chinese University of Hong Kong

[rychung@cuhk.edu.hk](mailto:rychung@cuhk.edu.hk)

<https://www.linkedin.com/in/roger-chung-4aa835140/>