



Global Health Security 2022

Suntec Convention & Exhibition Centre
Singapore 28 June - 1 July 2022

FINAL **CONFERENCE** **REPORT**

GHS2022

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Executive Summary

The COVID-19 pandemic demonstrated what many in the field of global public health had been warning for decades, namely that the world was unprepared for another pandemic. In this context, in late June 2022 the second Global Health Security conference (GHS2022) was convened in Singapore from the 28 June to 1 July 2022 to review the latest scientific evidence, discuss policy solutions, further consolidate a community of practice, and agree on practical next steps for enhancing global health security.

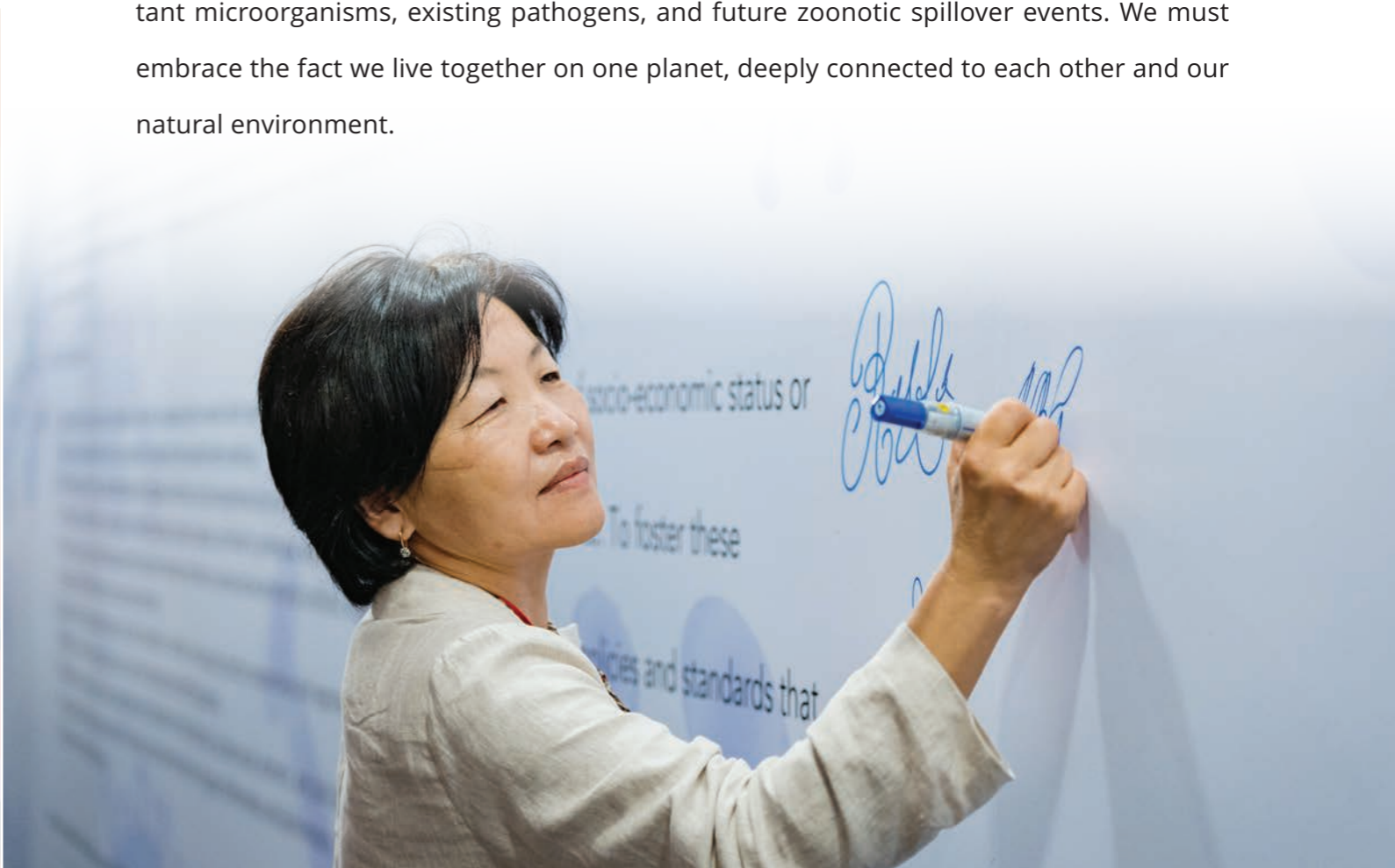
The Singapore Statement on Global Health Security

Global Health Security (GHS) is a state of freedom from the scourge of infectious diseases irrespective of their origin or source. As the COVID-19 pandemic has shown, however, it can only be achieved and maintained through concerted, cooperative action at all levels – from local communities to the international system – when acting in solidarity, informed by equity.

We reaffirm the Sydney Statement on Global Health Security's seven core principles.¹

These principles, agreed prior to the pandemic, are only more salient now. COVID-19 has highlighted the urgent need for strengthening and maintaining global, regional, national, and local preparedness and response capacities, even as we also must prepare for known and hitherto unforeseen challenges emerging from a changing climate, microbially-resistant microorganisms, existing pathogens, and future zoonotic spillover events. We must embrace the fact we live together on one planet, deeply connected to each other and our natural environment.

The main conference attracted some 850 in-person attendees and a further 56 virtual delegates from 81 countries. Notably, this included some 90 fully supported travel bursary recipients, although support was offered to over 100 individuals on account of the sponsorship raised and lower travel-related expenses due to the event's location in Singapore. In addition to the main conference, the second Military-Civilian Health Security Summit (MCHSS) was held from 27-28 June involving 145 delegates from 28 countries, and the World Health Organization (WHO) convened a special technical briefing on future pandemic preparedness on 2 July with 82 attendees from 20 countries. The conference also formally adopted the Singapore Statement on Global Health Security, which builds on the Sydney Statement in light of the COVID-19 pandemic and is intended to help inform future global health security policy and practice.



To that end, we declare:

1. Global health security is made sustainable only when embedded within universal health systems that ensure equitable access to services and treatment, irrespective of socio-economic status or means to pay, and delivered by an appropriately trained and remunerated health workforce.
2. Health emergency planning, preparedness and response workforces must be strengthened and proactively expanded to include multisectoral, interdisciplinary expertise. To foster these workforces, inclusive, lifelong training must be encouraged, readily accessible, and linked to professional advancement.
3. Preventing future unintended disease events requires enhanced surveillance of animal and environmental conditions, including in urban settings, and the adoption of policies and standards that proscribe activities that harm the natural environment.
4. Governments must sustainably finance, build, strengthen, maintain, and regularly practice preparedness and response capabilities that respect human rights, are inclusive, context-specific, and adhere to relevant international law such as the International Health Regulations.
5. Preparedness and response must strengthen and maintain not only technical, but also social, economic, and political measures for reducing harm arising from disease events. This includes taking practical steps to improve health literacy across communities to mitigate misinformation and disinformation, and the development of new social, economic, and political preparedness indicators to enhance resilience.

Achieving global health security, strengthening health systems, and improving population health around the world requires a sustained commitment at all levels of government and across all sectors of society.

¹The seven principles are: 1. That interventions must be inclusive, equitable and data driven; 2. Prevention, detection and response capabilities are critical and must be linked with universal health coverage and health system strengthening; 3. Governments must comply with the International Health Regulations and other associated agreements; 4. GHS requires action and engagement from all sectors; 5. GHS must embrace a One Health approach; 6. Countries with resources have a duty to partner with those with lower capacity to strengthen capabilities; and 7. Sustainable, comprehensive funding is critical.

GHS2022 Conference Proceedings

The week's events commenced with a two-day Military-Civilian Health Security Summit (MCHSS) held at the SunTec Convention & Exhibition Centre that was organised by the United States' Indo-Pacific Command, Defense Threat Reduction Agency and the Australian Defence Force, which was hosted by the Singapore Armed Forces. The two-day meeting was the second MCHSS (the first was held in Sydney in 2019) and involved some 145 delegates from 28 countries from across the Indo-Pacific region. The objectives of the meeting were to review the role of the military and security sector in global health security, and to examine regional and sub-regional civil-military partnerships designed to advance shared health security objectives.

The topics examined during the Summit included how military/security services supported civilian authorities respond to the COVID-19 pandemic, the roles and responsibilities military personnel performed during COVID-19, and the second-order impacts arising from the pandemic. In addition, a number of break-out sessions examined specific sub-regional challenges and initiatives.

The second day of the MCHSS coincided with the commencement of the first day of GHS2022, which was also held at the SunTec Convention & Exhibition Centre, Singapore. This first day of formal conference proceedings (28 June) began with some 11 workshops that offered delegates the opportunity to enhance their knowledge and skills across a range of topics such as legal preparedness, disease surveillance, biothreat detection and response, strengthening community preparedness, risk communication, and countering misinformation and disinformation, amongst others. A series of panel presentations were then held in the afternoon followed by a special keynote session that examined ending

neglected diseases and diseases of at-risk populations before the official welcome event and a special event on next generation leaders in health security organised by the Nuclear Threat Initiative.

The second day of GHS2022 commenced with the official opening by the Hon. Ong Ye Kung, Singapore's Minister for Health (see Appendix B). This was followed by a special ministerial keynote session involving Minister Ong (Singapore), South Africa's Health Minister Dr Joseph Phaahla, Uganda's Health Minister Dr Jane Ruth Aceng, and a special pre-recorded address by the US Secretary of State, Mr Antony Blinken. After a short break, a further special keynote session was held on the theme of Women in Global Health Security involving Her Excellency Tarja Halonen (former President of Finland), Precious Matsoso (South Africa's former Director-General of Health), Professor Michelle Williams (Harvard TH Chan School of Public Health), Associate Professor Clare Wenham (London School of Economics), and Mr Robin Davies (First Assistant Secretary, Australian Department of Foreign Affairs and Trade). The post-conference survey results confirmed what many delegates at the conference had stated during the event, namely that the session on Women in Global Health Security proved a key highlight of the conference. Later in the afternoon following a series of panel sessions and a special side event hosted by Stop TB, a fourth keynote session sought to address the challenge of sustainable financing for HIV/AIDS, TB and malaria involving Minister Phaahla (South Africa), Minister Aceng (Uganda), Mr Peter Sands (Global Fund) and Dr Lucia Ditiu (Stop TB). The official Gala Dinner closed the second day's proceedings.

The next two days of GHS2022 proceedings continued along a similar format, with an additional five keynote sessions interspersed amongst panel sessions and side events. Of particular note was a keynote session involving the Hon. Malcolm Turnbull (Australia's

29th Prime Minister), Mr José Manuel Barroso (Chair of Gavi, The Vaccine Alliance), and Professor Michelle Williams (Dean, Harvard TH Chan School of Public Health) – the three co-chairs of the Reform for Resilience (R4R) Commission – who discussed strengthening future pandemic and climate change resilience. Another event, which was sponsored by the Canadian Government's Biological Threat Reduction Program examined whether the COVID-19 pandemic had increased the risk of intentional biological events. This session commenced with a pre-recorded address by Ms Izumi Nakamitsu, the United Nations' Under-Secretary-General and High Representative for Disarmament Affairs, followed by discussions with Mr Trevor Smith (Canadian Government), Mr Tancredi Francese (Deputy Permanent Representative to the Conference on Disarmament, Government of Italy), Dr Ada Bacetty (Department Chief, US Defense Threat Reduction Agency), and Hayley Severance (Nuclear Threat Initiative).



Various sponsored breakfasts, lunches and dinners were also held across the four days. For example, one event sponsored by the Rockefeller Foundation involved Dr Rick Bright (CEO, Pandemic Prevention Institute), Dr Judith Wong (Director, Environmental Health Institute, Singapore National Environment Agency), Dr Jennifer Nuzzo (Brown University), Wilmot Godfrey James (Columbia University), and a pre-recorded address by Dr Nisia Verônica Trindade Lima (President, Fundacio Oswaldo Cruz) which examined connecting global genomic sequencing data in an age of misinformation and distrust. Likewise, another sponsored by Bavarian Nordic examined the growing threat of monkeypox and included Professor David L Heymann (formerly World Health Organization, Chatham House), Daniel Bausch (FIND), Ifedayo Adetifa (London School of Hygiene & Tropical Medicine), Lucia Mullen (John Hopkins University), and Sweet Kheng Khor (United Nations University). Many organisations and sponsors also utilised the conference to progress various initiatives and ongoing collaboration, with over 20 bilateral (closed) meetings on the sidelines.

Across the four-day event, over 300 speakers presented their research findings, policy innovations, and recommendations for enhancing global health security across 98 panels, nine keynote sessions, 11 workshops, nine sponsored events, and four side-events. In addition to the oral presentations, a further 134 poster sessions were held where researchers presented their work to assembled delegates in the exhibition hall. From the post-conference survey, 88% of respondents indicated they had learned about new research of policy innovations as a result of attending GHS2022, and 60% of respondents had been inspired to undertake new research or collaborations. A number of lessons learned have also been identified for future events, and the Global Health Security Network

Key Statistics on GHS2022
▶ 850 in-person delegates + 56 virtual delegates from 81 countries
▶ 56% female, 43.9% male, 0.1% non-binary
▶ 98 panels involving 291 speakers (54% female, 46% male)
▶ 9 keynote sessions involving 30 keynote speakers (49% female, 51% male)
▶ 132 poster presentations
▶ 11 workshops
▶ 2 sponsored breakfasts
▶ 5 sponsored lunches
▶ 2 sponsored dinners
▶ 4 side-events

Key Statistics on GHS2019
▶ 827 in-person delegates from 65 countries
▶ 46% female, 54% male
▶ 77 panels involving 263 speakers
▶ 8 keynote sessions
▶ 200 poster presentations
▶ 10 workshops
▶ 3 sponsored breakfasts
▶ 2 side-events

2022 Delegates (virtual)	Classification/Position	2019 Delegates
330 (19)	Government and Intergovernmental Organisation	327
258 (16)	University/Research	278
211 (13)	Civil Society/Non-Government Organisation	64
81 (5)	Private Sector	102
26 (3)	Other (i.e. media, non-affiliated, etc)	56
906	Total	827

Recommendations: Closing the Loop

Following the Global Health Security 2019 conference, some 23 recommendations were identified to enhance the next Global Health Security conference. This section of the report reviews the progress made in addressing the recommendations for the 2022 conference, and proposes several new recommendations.

GHS2019 Recommendation 1: *That another global health security conference be held in 2021, and 2023, to measure progress, and further consolidate the community of practice.*

On account the COVID-19 pandemic commenced in January 2020, the plans for a conference in 2021 were postponed by a full year until June 2022. This decision has follow-on implications for future GHS conferences given the commitment is to hold an event every two years (i.e. 2024, 2026, etc).

GHS2019 Recommendation 2: *The next two conferences – 2021 and 2023 – are held in Sydney, Australia, with a view to the 2025 conference being held outside Australia pending continued interest and availability of a suitable conference organiser and venue.*

Due to Australian Government policy announced by the Prime Minister in May 2021 that the country's international borders would be closed until at least half-way through 2022, a decision was taken to move the now GHS2022 event overseas. After a competitive assessment process, Singapore was selected as the location for the next conference.

GHS2019 Recommendation 3: *For future conferences, commence recruitment and appointment of Steering Group and Scientific Advisory Committee members earlier to ensure equitable gender and diversity representation.*

As envisaged, recruitment of the Steering Group and Scientific Advisory Committees commenced in July 2020 following the announcement of the next conference. Given the subsequent decision to then delay the event a full year, both committees were fully formed and in-place well in advance of the GHS2022 event.

GHS2019 Recommendation 4: *For future conferences, include a field on registration forms asking delegates to indicate their preferred gender pronouns to ensure gender diversity and facilitate the creation of gender equitable panels.*

Actioned.

GHS2019 Recommendation 5: *In planning future conferences, gender equity and diversity amongst all participants must remain a core focus and priority. Relatedly, information about childcare options must be shared with potential delegates well in advance of conferences to support work/life balance.*

In contrast to the 2019 conference where approximately 60% of delegates and speakers were male and 40% were female, during GHS2022 this trend was reversed. The policy of no 'male only' panels was strictly adhered to, culminating in several female-only panels on account of the high proportion of female speakers. In addition, childcare facilities were sourced but given COVID-19 restrictions on international travel and ongoing safety concerns, we received only one enquiry from a female speaker who subsequently elected to present remotely. Childcare facilities have already been incorporated in GHS2024 planning and venue hire considerations and will be actively promoted at the same time as the call for abstracts is issued.

GHS2019 Recommendation 6: *In future conferences, ensure that proceedings are restricted to only one venue, noting this also necessitates much earlier engagement from interested parties and increases the risk that late requests will not be able to be accommodated.*

Actioned. Late requests were still able to be accommodated by the organising committee, but the co-location of several side meetings and the main conference was identified by stakeholders as very beneficial.

GHS2019 Recommendation 7: *The three-person panel format with moderator should be retained for future conferences, but instructions to presenters must be made clearer and provided earlier.*

The three-speaker panel format was retained for GHS2022, was well-received, and will set the benchmark for all future events. Noting this, due to limitations associated with personnel (see below) several unsatisfactory delays were encountered in communicating instructions and conference arrangements to speakers and delegates, which was identified in feedback provided both in-person and the post-conference survey results. Of particular note was the communication around PowerPoint slide presentations being actively discouraged, which was misinterpreted by numerous speakers and moderates as a “ban” on slide presentations. The lack of timely communications is a clear lesson learned for future events that must be rectified.

GHS2019 Recommendation 8: Delegates accepted to present research or policy innovations at future conferences – or those who submit on another’s behalf – must provide multiple contact options to avoid risk of information not being received in sufficient time.

This was not actioned for GHS2022 on account the conference management software (Cvent) was unable to accommodate moderations of this nature. Additional problems were encountered with end-user software automatically unsubscribing delegates from receiving updates, necessitating additional staff time to individually resubscribe delegates that had been removed from the update system. Feedback has already been provided to Cvent and further follow-up discussions are planned to rectify these faults for future events.

GHS2019 Recommendation 9: Future conferences retain a dedicated day for skills-training and knowledge transfer workshops to contribute to capacity building.

Actioned. Feedback received from the post-conference survey suggests that problems were encountered by delegates registering for skills training workshops that were offered during GHS2022. In addition, feedback indicated the decision to hold all workshops concurrently on the morning of 28 June 2022 had a negative impact on delegate satisfaction, as they were unable to attend more than one workshop (NB: there is a limit of one workshop per delegate in the terms and conditions of conference registration). In addition, feedback suggests that more scrutiny is needed to avoid too many workshops on the same or similar topics being held; although this would require additional intervention in the peer-review process that is currently used to exclude duplicate or similarly themed workshops.

GHS2019 Recommendation 10: Increase the number of conference days from 3 to 4 (inclusive of a dedicated workshop day) to reduce the number of concurrent sessions.

Actioned.

GHS2019 Recommendation 11: An official conference dinner should be included in future global health security conferences to provide a networking opportunity for delegates. Dinners should retain a networking/social focus.

Actioned. Based on the feedback received from GHS2019 and in recognition that GHS2022 was the first opportunity for many delegates to reconnect in person, the decision was taken to retain a social networking element for the Gala Dinner. Noting this, feedback received from some delegates via the post-event survey suggested that some viewed this as a “missed opportunity” that no speakers were included.

GHS2019 Recommendation 12: The availability of travel bursaries for future global health security conferences is strongly recommended.

Actioned. Although fundraising for GHS2022 was lower than received for GHS2019, the conference location in Singapore reduced international airfare costs, permitting the organising committee to increase the number of travel bursary offers. As a result, while there were some 90 travel bursary recipients that attended GHS2022, over 100 offers were extended.

GHS2019 Recommendation 13: Conference Partners and Sponsors be encouraged to ensure rapid availability of travel bursary sponsorship funds, specifically, to ensure the maximum number of delegates from low and middle-income countries are able to attend future conferences.

Actioned.

GHS2019 Recommendation 14: Travel bursaries are titrated to recipients’ point of origin with an available range of between AUD\$4,000 to AUD\$6,000 per person.

Actioned.

GHS2019 Recommendation 15: *In future conferences, a larger proportion of sponsorship funds are allocated to travel bursary support.*

Actioned.

GHS2019 Recommendation 16: *In future conferences, delegates are required to secure visa approvals prior to the professional conference organiser confirming international flights to maximise travel bursary funds.*

This was not able to be actioned for GHS2022 given Singapore Government requirements that delegates submit a copy of their flight itineraries prior to visas being issued. This may be considered for GHS2024, but it is also likely that these arrangements are unable to be changed.

GHS2019 Recommendation 17: *Conference Partners and Sponsors consider approving the purchase of fully-flexible international economy flights for delegates to reduce the risk of economic losses in result of late cancellations in future conferences.*

The organising committee for GHS2022 worked closely with a travel agency to ensure best value for money and flexibility on international flights to limit financial risk associated with “no shows”. As a result, while some sponsorship funding was lost on flights when travel bursary recipients failed to board, the losses were able to be minimised.

GHS2019 Recommendation 18: *Additional sponsorship is secured to permit sufficient funds for travel bursary recipients to stay at hotels closer to the conference venue.*

Actioned. All travel bursary recipients for GHS2022 were located in a hotel in close proximity to the conference venue (approximately 10 minutes walking distance).

GHS2019 Recommendation 19: *In absence of per diems, travel bursary recipients are provided with pre-loaded debit cards upon registration for food and local transport and/or per diems are provided by a specific sponsor.*

Due to difficulties encountered with the card provider, pre-loaded debit cards were unable to be offered to travel bursary recipients for GHS2022. All travel bursary recipients were instead of-

ferred cash reimbursements and per diems on-site. Based on post-conference survey feedback, this decision was welcomed by travel bursary recipients.

GHS2019 Recommendation 20: *GHS2019 Conference Partners and Sponsors be approached to consider sponsoring future global health security conferences including, specifically, GHS2021.*

Actioned.

GHS2019 Recommendation 21: *Additional sponsors be approached to support future global health security conferences in 2021 and 2023, with a particular emphasis on supporting travel bursaries for delegates from low and middle-income countries.*

Actioned.

GHS2019 Recommendation 22: *Conference organizers commence outreach to potential exhibitors and sponsors as soon as the date and location for future conference(s) are determined.*

This was partially actioned for GHS2022. On account of the COVID-19 restrictions initially applied by the Singapore Government, exhibitors were only able to confirm their participation approximately one (1) month prior to the event. Sponsors were approached early; however, ongoing uncertainty about the event proceeding on account of the pandemic did contribute to less offerings by sponsors. Existing sponsors, most notably the Australian Government, actually increased its support and travel bursary sponsorship on account of the pandemic and need to relocate the event overseas.

GHS2019 Recommendation 23: *For future conferences, create and fund a secretariat to provide subject matter expertise in global health security, thematic decisions, content planning, and outreach to sponsors and exhibitors.*

Actioned. A new professional association (Global Health Security Network Ltd) was established in October 2019 as a limited-by-guarantee company and registered charity with the Australian Charity and Not-for-profit Commission, and an Executive Manager/CEO was appointed following a competitive international search. Noting this, the GHS2022 conference lacked sufficient institutional support, and there is a clear need to rectify this situation prior to the next scheduled event in 2024.

Appendix A: GHS2022 Keynote Speakers



DR. JANE RUTH ACENG
MINISTER OF HEALTH, UGANDA

Dr. Jane Ruth Aceng is the Minister of Health- Uganda. Dr. Aceng holds a Bachelor's Degree in Medicine (MBChB), MMED (Pediatrics), Masters in Public Health and a Diploma in Health System Strengthening. She is a Pediatrician expert and is currently at the level of Senior Consultant Pediatrics. She is also a Public Health expert.

She has vast experience both as a manager and practicing medical personnel, which she accumulated while serving in various capacities as Medical Officer, Senior Medical Officer, Medical Officer Special Grade, Medical Superintendent, Consultant Pediatrician, Senior Consultant Pediatrician and Hospital Director. She was then appointed as the Director General Health Services where she was responsible for coordinating technical functions for the delivery of Health services, a role she has fulfilled until her appointment as the Minister for Health.



JOSÉ MANUEL BARROSO
CHAIR OF THE BOARD, GAVI THE VACCINE ALLIANCE

Since January 2021, José Manuel Barroso is Gavi's Chair of the Board. Barroso served as Prime Minister of Portugal from 2002-2004 and as President of the European Commission from 2004-2014, accepting the Nobel Peace Prize on behalf of the European Union in 2012.

In 1985, Barroso was elected for the first of several times to the Portuguese Parliament (Assembleia da República) and served as Chairman of its Committee on Foreign Affairs and Cooperation. He was successively State Secretary in the Ministry of Internal Administration, State Secretary for Foreign Affairs and Development Cooperation and Minister for Foreign Affairs. While at Foreign Affairs, Barroso became mediator of the peace process for Angola (Bicesse Accords), and he was one of the initiators, under the auspices of the Secretary-General of the United Nations, of the negotiations at the level of Foreign Ministers between Portugal and Indonesia.



DR DANIEL BAUSCH
DIRECTOR, EMERGING THREATS AND GLOBAL HEALTH SECURITY, FIND

Dr Daniel Bausch, MD, MPH&TM, serves as Director of Emerging Threats & Global Health Security, leading FIND's efforts on pandemic preparedness and response. He is trained in internal medicine, infectious diseases, tropical medicine, and public health.

Daniel specializes in the research and control of emerging tropical viruses, with over 25 years' experience in sub-Saharan Africa, Latin America, and Asia combating viruses such as Ebola, Lassa, hantavirus, and SARS coronaviruses. He joins FIND after serving as Director of the United Kingdom's Public Health Rapid Support team (2017-21), a joint effort by Public Health England and the London School of Hygiene & Tropical Medicine to respond and conduct research to prevent and control outbreaks of dangerous infectious diseases around the world.



SCOTT BECKER
CHIEF EXECUTIVE OFFICER, APHL

Scott Becker is the chief executive officer of the Association of Public Health Laboratories (APHL). Over his 20+ year tenure, Scott has grown APHL from a modest nonprofit focused on public health laboratory training to a center for quality laboratory systems with a budget of \$155 million, a global reach and wide-ranging programs and services.

Scott manages an extensive portfolio, which includes APHL's strategic direction, policy development and fiscal management as well as liaising with APHL members, strategic partners and the Board of Directors. He oversees a staff of over 200 located in offices in the US, Ethiopia, Ghana, Kenya, Indonesia, Mozambique, Tanzania, Vietnam and Zambia. Scott is responsible for the Global Health Program as well as other programs ranging across eight scientific disciplines, training, communications and other member services.



ANTONY J. BLINKEN
71ST U.S. SECRETARY OF STATE, UNITED STATES GOVERNMENT

Antony J. Blinken is the 71st U.S. Secretary of State.

He was nominated by President Biden on November 23, 2020; confirmed by the U.S. Senate on January 26, 2021; and sworn in by Vice President Kamala Harris the following day. Over three decades and three presidential administrations, Mr. Blinken has helped shape U.S. foreign policy to ensure it protects U.S. interests and delivers results for the American people.

He served as deputy secretary of state for President Barack Obama from 2015 to 2017, and before that, as President Obama's principal deputy national security advisor. In that role, Mr. Blinken chaired the interagency deputies committee, the main forum for hammering out the administration's foreign policy.



DR RICK BRIGHT
SENIOR VICE PRESIDENT, THE ROCKEFELLER FOUNDATION

Rick Bright is currently the Chief Executive Officer of the Pandemic Prevention Institute (PPI) at The Rockefeller Foundation. Dr. Bright leads the development of the Foundation's pandemic data-to-action platform that integrates modern technology, data analytics and global partners to help the world detect, prevent, and mitigate pandemic threats to achieve containment as quickly as possible.

Prior to this role, he served as the Deputy Assistant Secretary for Preparedness and Response and the Director of the Biomedical Advanced Research and Development Authority (BARDA), in the U.S. Department of Health and Human Services. Dr. Bright has also gained extensive experience in the biotechnology industry where he served in senior leadership and executive management roles. He has held senior scientific leadership positions in non-governmental organizations where he championed innovative vaccine development and expanded vaccine manufacturing capacity to multiple developing countries.



DR SARTHAK DAS
CHIEF EXECUTIVE OFFICER, ASIA PACIFIC LEADERS MALARIA ALLIANCE

Dr. Sarthak Das has over 25 years of experience as a public health scientist, development practitioner, and global health policy advisor. Sarthak joined APLMA in May 2020 from the Harvard T.H. Chan School of Public Health and Harvard Global Health Institute where he held where he was appointed Research Scientist in the Dean's Office & Department of Health Policy and Management, and as Senior Advisor for Research Translation & Global Health Policy at the Harvard Global Health Institute.

Prior to Harvard, he served as Chief of Policy & Public Sector Partnerships for Partners in Health (PIH), where he led efforts to forge public sector alliances bilateral and multilateral institutions while supporting country partnerships with Ministries of Health. While at PIH, Dr. Das was also engaged in the West African Ebola outbreak response efforts in Sierra Leone and Liberia.



ROBIN DAVIES
FIRST ASSISTANT SECRETARY, GLOBAL HEALTH DIVISION, DFAT

Robin Davies is the First Assistant Secretary of DFAT's Global Health Division and concurrently the Head of DFAT's Indo-Pacific Centre for Health Security. He is leading the implementation of Australia's Health Security Initiative for the Indo-Pacific region and the Regional COVID-19 Vaccine Access and Health Security Initiative.

Robin was previously Associate Director of the Development Policy Centre at the Australian National University.

Robin worked at the former Australian Agency for International Development (AusAID) for almost twenty years, both in Australia and overseas, including ten years as a member of its senior executive service. He was Australia's delegate to the OECD Development Assistance Committee for 1999 to 2022 and managed Australia's development cooperation program in Indonesia from 2003 to 2006. Until late 2011, he headed AusAID's international programs and partnerships division.



DR LUCICA DITIU
EXECUTIVE DIRECTOR,
STOP TB PARTNERSHIP

Dr. Lucica Ditiu, Executive Director of the Stop TB Partnership is a Romanian physician, accomplished professional and leader in the global fight against tuberculosis (TB) and other communicable diseases.

Dr. Ditiu is driven by the firm belief that we should “leave no one behind” and is one of the strongest advocates within the international community in the fight against tuberculosis. A firm believer in innovation, flexibility, change, breaking the rules and thinking out of the box, Dr. Ditiu is dedicated to driving political commitment and engagement to accelerate the efforts to End TB.



TANCREDI FRANCESE
COUNSELLOR, DEPUTY PERMANENT REPRESENTATIVE, CONFERENCE ON DISARMAMENT

Career diplomat, he joined the Italian Ministry of Foreign Affairs and International Cooperation in 2010.

Since 2019, he has been posted at the Italian Mission to the UN in Geneva as Deputy Permanent Representative to the Conference on Disarmament, representing his country in all Geneva-based disarmament fora and at the UNGA First Committee (Disarmament and International Security). From December 2021 to April 2022, he has co-chaired the Preparatory Committee of the Ninth Review Conference of the Biological Weapons Convention and he is currently working in the team of the President-designate of the Review Conference.

Between 2015 and 2019, he served as Deputy Head of Mission at the Italian Embassy in Havana (Cuba), in charge of Political, Economic and Cultural affairs.



PATRICIA GELI
EXECUTIVE DIRECTOR, REFORM FOR RESILIENCE COMMISSION

Patricia Geli, PhD, is Executive Director of the Reform for Resilience Commission's North America Hub the Harvard T.H. Chan School of Public Health. She also guides Harvard's participation in the Partnership for Central America, a coalition formed in response to Vice President Kamala Harris' May 2021 call to address the root causes of migration from Central America.

Previously, Patricia worked at the World Bank for a decade, most recently as senior economist and task team leader for the Africa CDC program. She served on the World Bank's COVID-19 task force and on an extended mission in Sierra Leone at the height of the Ebola crisis. Prior to that, she worked in the Public Health Agency of Sweden and Resources for the Future. Patricia's academic background spans economics, epidemiology, public health, biostatistics, and mathematical modelling.



HER EXCELLENCY TARJA HALONEN
FORMER PRESIDENT, FINLAND

Tarja Halonen served two terms as President of Finland from 2000 to 2012. Prior to her election, she held the office of Minister of Social Affairs and Health, Minister of Justice, and Minister for Foreign Affairs. She continues to work closely with the UN, and is currently member of the Secretary-General's High-Level Advisory Board on Mediation. She is also UN Land Ambassador as well as a member of CTBTO Group of Eminent Persons.

She continues to promote issues related to sustainable development in her many other roles, including, as a member of Sustainable Development Solutions Network's Leadership Council, as a Chair of Lancet-SIGHT commission on Peaceful Societies through Health and Gender Equality and as a member of Harvard University's Arctic Initiative Board of Advisors.



DR CHIKWE IHEKWEAZU
ASSISTANT DIRECTOR GENERAL, WORLD HEALTH ORGANISATION

Dr Chikwe Ihekweazu is the Assistant Director General at the World Health Organization (WHO) for Surveillance and Health Emergency Intelligence and leads the WHO Hub for Pandemic and Epidemic Intelligence, based in Berlin, Germany.

Previously, Dr Ihekweazu was the first Director General of the Nigeria Centre for Disease Control (NCDC), which he led July 2016 - October 2021, building it from a small unit to a leading public health agency in Africa. He acted as Interim Director of the West Africa Regional Centre for Surveillance and Disease Control through 2017.

Dr Ihekweazu trained as an infectious disease epidemiologist and has over 25 years' experience working in senior public health and leadership positions in national public health institutes including NCDC, South African National Institute for Communicable Diseases, the UK's Health Protection Agency, and Germany's Robert Koch Institute.



MINISTER ONG YE KUNG
MINISTER FOR HEALTH, REPUBLIC OF SINGAPORE

Ong Ye Kung is the Minister for Health. He was elected Member of Parliament for Sembawang Group Representation Constituency (GRC) in September 2015, and was re-elected in July 2020 in Sembawang GRC.

He had held the positions of Minister for Transport, Minister for Education, Second Minister for Defence and board member of the Monetary Authority of Singapore. He is also the Chairman of the Chinese Development Assistance Council.

Prior to joining politics, he held various positions in Government, including Chief Executive Officer of the Singapore Workforce Development Agency, and Deputy Chief Negotiator for the US-Singapore Free Trade Agreement. He served several years in the Labour Movement, as the Deputy Secretary-General of the National Trades Union Congress, and spent some time in the private sector, as the Director of Group Strategy at Keppel Corporation.



PROF VERNON LEE
PROFESSOR, NATIONAL UNIVERSITY OF SINGAPORE

Prof Vernon Lee is a preventive medicine physician and adjunct Professor at the Saw Swee Hock School of Public Health, National University of Singapore. He is also Senior Director of Communicable Diseases at the Ministry of Health and sits on the Council of the Academy of Medicine, Singapore.

His areas of expertise include infectious diseases epidemiology, pandemic preparedness and response, and evidence-based health policy.

He has previously worked in the WHO Office in Indonesia and WHO headquarters in Geneva, and continues to contribute to international working groups and advisory panels on infectious diseases.

Prof Lee graduated from medical school at the National University of Singapore. He also holds a PhD in epidemiology from the Australian National University, and the Master in Public Health and Master of Business Administration degrees from the Johns Hopkins University, USA.



MALEBONA PRECIOUS MATSOSO
DIRECTOR, HEALTH REGULATORY SCIENCE PLATFORM

Malebona Precious Matsoso, has over 25 years' experience at executive management level. She held the post of Director-General of the South African National Department of Health for nine and a half years. She was the World Health Organisation Director of Public Health Innovation and Intellectual Property. Prior to that, she served as WHO Director, Department of Technical Cooperation for Essential Drugs and Traditional Medicines.

She was the Registrar of the Medicines Control Council for six years. She has served on various advisory bodies both nationally and internationally. Chair of the WHO Executive Board. A member of the UN High-Level Panel on Access to Health Technologies, Chairperson of the Independent Oversight and Advisory Committee for the WHO Health Emergencies Programme. She was the member of the Lancet Global Health Commission on High Quality Health Systems.



SEBASTIAN MAURER-STROH
EXECUTIVE DIRECTOR, BIOINFORMATICS
INSTITUTE

Dr Sebastian Maurer-Stroh studied theoretical biochemistry at the University of Vienna and wrote his master's and Doctor of Philosophy thesis at the Institute of Molecular Pathology. After Federation of European Biochemical Societies and Marie Curie fellowships at the Vlaams Instituut voor Biotechnologie-Switch laboratory in Brussels, he has been leading a group of experts in protein sequence analysis as a senior principal investigator in the A*STAR Bioinformatics Institute (BII) since 2007.

He is the new Executive Director of BII since January 2021. His protein function analysis skills are supporting A*STAR's efforts at the public-private interface and through computational analysis and modelling his team is critically contributing to national and global viral pathogen surveillance, notably with the GISAID initiative.



DR JOSEPH PHAAHLA
MINISTER FOR HEALTH, SOUTH AFRICA

Dr Phaahla was appointed as Minister of Health on 5 August 2021. He served as Deputy Minister of Health of the Republic of South Africa from 30 May 2019 to 5 August 2021.

Dr Mathume Joseph "Joe" Phaahla was the Deputy Minister of Health of the Republic of South Africa with effect from 26 May 2014 to 25 May 2019.

Dr Phaahla holds a Bachelor of Medicine and a Bachelor of Surgery (MBChB) from the University of KwaZulu-Natal (previously University of Natal) in 1983. Dr Phaahla practiced as a medical practitioner in various hospitals in KZN, Gauteng, Mpumalanga and Limpopo until April 1994. Before unbanning of ANC in 1990 served in leadership positions in various mass democratic movement structures including in the NEC of the United Democratic Front.



BASIL RODRIQUES
SENIOR REGIONAL HEALTH ADVISOR,
UNICEF

Basil is a graduate of Columbia University, New York, with specialized discipline in Public Health, Epidemiology, Maternal and Child Health. He has served in several capacities with UNICEF across multiple continents and countries.

Over the past 30 years, he has served as Regional Immunization Adviser for the East Asia and Pacific Region (based in Bangkok), and later as Senior Adviser for Emerging Infectious Diseases in UNICEF, New York. He continued in his Regional Health Adviser roles in East Asia & Pacific as well as Europe and Central Asia, based in Geneva, Switzerland. He has recently returned to the East Asia and Pacific Region, where he currently serves as the Senior Regional Health Adviser for East Asia & Pacific.



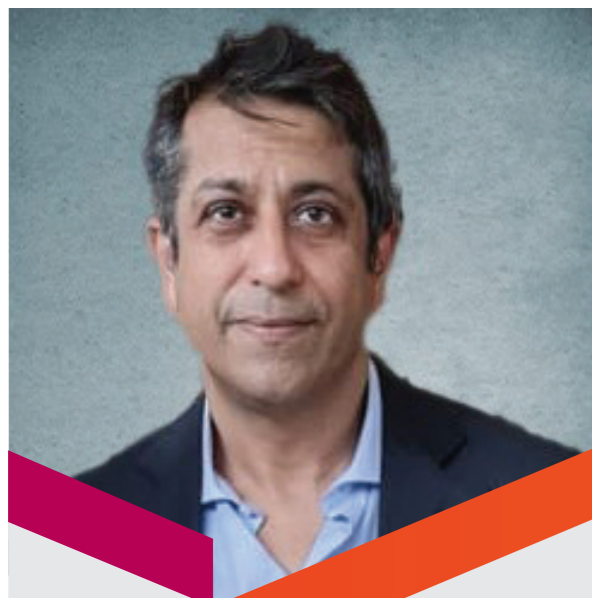
PETER SANDS
EXECUTIVE DIRECTOR, THE GLOBAL FUND

Peter Sands has been the Executive Director of The Global Fund to Fight AIDS, Tuberculosis and Malaria since March 2018.

Since June 2015 Peter has been a Research Fellow at Harvard University, dividing his time between the Mossavar-Rahmani Center for Business and Government at Harvard Kennedy School and the Harvard Global Health Institute.

Peter was Group CEO of Standard Chartered PLC from November 2006 to June 2015, having joined the Board of Standard Chartered as Group CFO in May 2002. Prior to joining Standard Chartered, Peter was a Senior Partner at McKinsey & Co.

Peter has served on various boards and commissions, including the UK's Department of Health, the World Economic Forum and the International Advisory Board of the Monetary Authority of Singapore.



HAMISH SHAHANI
MANAGING DIRECTOR & CEO, KLENZAIDS
CONTAMINATION CONTROLS

Hamish Shahani is the Managing Director and CEO of Klenzaid Contamination Controls with expertise in designing and building laboratories and facilities for pharmaceutical, biological and Life Sciences industries. These include various first of its kind facilities of national importance like India's Biosafety Level 4 laboratory.

Hamish has been involved with various professional associations and regulatory bodies in the implementation of guidelines and good laboratory/manufacturing practices across the world.

He has been associated with various publications and global workshops and is currently part of India's global healthcare task force, having played an essential role in the management of various epidemics like the Plague outbreak in India, SARS and Covid pandemic.

Hamish has been involved in numerous public/ institution/ private partnership projects in the field of Bio Sciences and Bio defence.



TREVOR SMITH
SNR PROGRAM MANAGER & DEPUTY DIRECTOR,
GLOBAL AFFAIRS CANADA

Since joining Global Affairs Canada in 1999, Trevor Smith has worked on a range of non-proliferation, arms control and disarmament issues pertaining to chemical, biological, radiological and nuclear (CBRN) weapons and missiles.

He has been a member of Canada's Weapons Threat Reduction Program since its establishment in 2002, and initially served as Senior Program Manager for chemical weapons destruction (CWD), overseeing Canada's substantial contributions to the Shchuch'ye and Kizner CWD facilities in Russia.

During Canada's G8 Presidency in 2010, he led the successful effort to establish biological security as a priority for the Global Partnership Against the Spread of Weapons and Materials of Mass Destruction (GP), which included conclusion of the GP's 5-pillared Strategy for Strengthening Biological Security and solidification of programmatic collaboration at the "health security interface" with, inter alia, the World Health Organisation (WHO), the World Organisation for Animal Health (OIE) and INTERPOL.

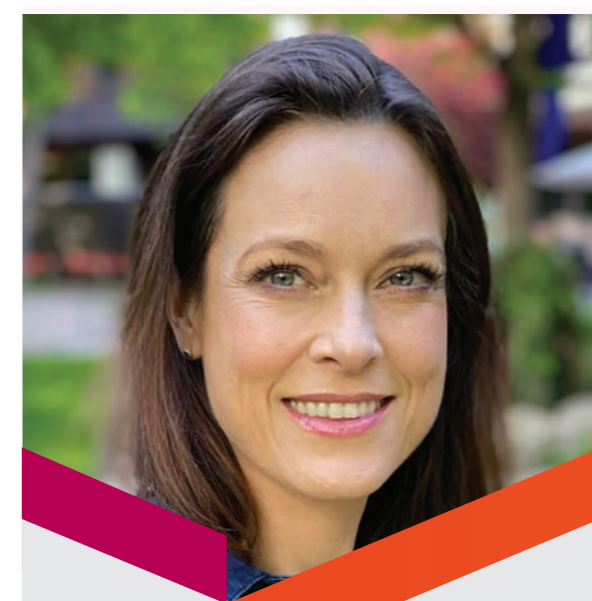


DR SARAH STEELE
DEPUTY DIRECTOR INTELLECTUAL FORUM,
UNIVERSITY OF CAMBRIDGE

Dr Sarah Steele FRSA FHEA is the Deputy Director of the Intellectual Forum and a member of Cambridge Public Health team, University of Cambridge. Dr Steele's work examining non-communicable diseases, maternal health, and public health policy has been utilised in several international campaigns.

More recently, Dr Steele's research has focused on the commercial determinants of health and violence against women and girls, which has resulted in invitations for her to address the United Kingdom's Home Office, the National Health Service, and various international partners.

She has previously held posts at Barts and the London School of Medicine and Dentistry, the University of Oxford, as well as teaching at several institutions across the United States, Australia, and the United Kingdom. Dr Steele's work remains highly regarded and has informed several national and international advocacy campaigns to improve health outcomes for women and girls around the world.



DR ANDREA THOMAS
EPIDEMIOLOGIST, BLUEDOT GLOBAL

Dr. Andrea Thomas is a veterinarian with an MSc and PhD in epidemiology from the University of Guelph in Canada. Her interests lie at the intersections of global health, infectious diseases, and surveillance.

She currently directs the epidemiology program at BlueDot, ensuring high-quality data and information are shared in a timely manner with diverse stakeholders. Dr. Thomas was involved in the development of BlueDot's global infectious diseases event based surveillance system, which was instrumental in the early detection and monitoring of the COVID-19 pandemic. She has led BlueDot's surveillance and epidemiology team of expert analysts through the development, maintenance, and dissemination of global COVID-19 data and information throughout the pandemic as they continued to track the spread of many other infectious diseases occurring globally.



THE HONOURABLE MALCOLM TURNBULL ACC
29TH PRIME MINISTER OF AUSTRALIA

Australia's 29th Prime Minister (2015-2018) had international careers in law, business and the media before entering politics at the age of 50.

As Prime Minister, he reformed Australia's personal income tax, education and childcare systems, oversaw the legalisation of same sex marriage and announced the construction of Snowy Hydro 2.0 the biggest pumped hydro scheme in the southern hemisphere. Mr Turnbull embarked on the largest peacetime investment in Australian defence capabilities and set out Australia's first national cybersecurity strategy.

Globally, Mr Turnbull played a leading role in reviving the Trans Pacific Partnership (TPP-11 or CPTPP) after the United States withdrew. He also struck deals with US Presidents Obama and Trump to accept refugees who tried to arrive in Australia illegally by boat.



DR RENEE WEGRZYN
VICE PRESIDENT OF BUSINESS DEVELOPMENT, GINKGO BIOWORKS

Dr. Renee Wegrzyn is Vice President of Business Development at Ginkgo Bioworks and Head of Innovation at Concentric by Ginkgo where she is currently focused on applying synthetic biology to outpace infectious disease - including COVID-19 - through biomanufacturing, vaccine, and diagnostic/biosurveillance innovation.

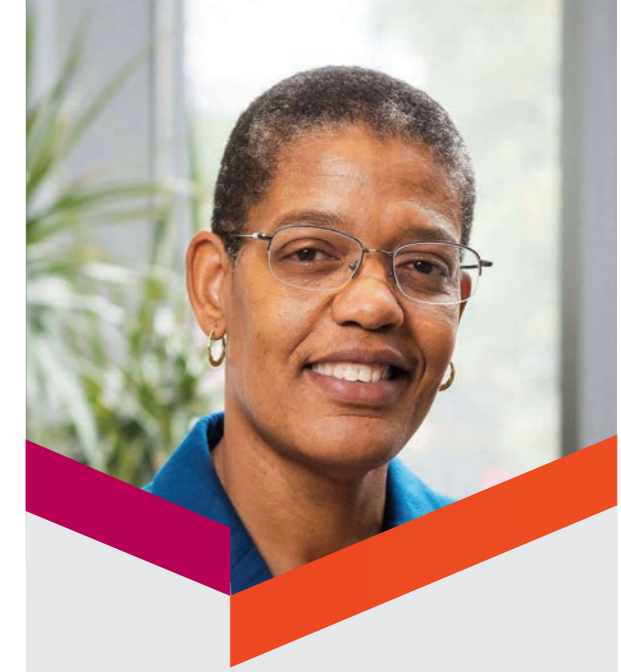
Prior to Ginkgo, she was Program Manager in the Biological Technologies Office (BTO) of the Defense Advanced Research Projects Agency (DARPA), where she leveraged the tools of synthetic biology and gene editing to enhance biosecurity, support the domestic bioeconomy, and thwart biotreats. Her DARPA portfolio included the Living Foundries: 1000 Molecules, Safe Genes, Preemptive Expression of Protective Alleles and Response Elements (PREPARE), and Detect it with Gene Editing Technologies (DIGET) programs.



DR CLARE WENHAM
ASSOCIATE PROFESSOR OF GLOBAL HEALTH POLICY, LONDON SCHOOL OF ECONOMICS

Dr Clare Wenham is Associate Professor of Global Health Policy. She is the Director of the MSc in Global Health Policy and sits on the steering committee of the LSE Global Health Initiative. Clare is an interdisciplinary health policy/international relations academic, with research that also contributes to public policy and public health through an empirical focus on global health security. Her research explores the preparation for and response to epidemics by state and non-state actors, the political challenges of this multi-stakeholder landscape and the effects of epidemic mitigation policies.

Clare's work focuses on the politics of infectious disease preparedness and response. Her research also includes critical analysis of financing mechanisms, increasing convergence of global health security with universal health coverage, novel infectious disease surveillance methods and the role of the WHO.



PROF MICHELLE WILLIAMS
DEAN, HARVARD T.H. CHAN, SCHOOL OF PUBLIC HEALTH

Michelle A. Williams, SM '88, ScD '91, is Dean of the Faculty, Harvard T.H. Chan School of Public Health, and Angelopoulos Professor in Public Health and International Development, a joint faculty appointment at the Harvard Chan School and Harvard Kennedy School. She is an internationally renowned epidemiologist and public health scientist, an award-winning educator, and a widely recognized academic leader.

Prior to becoming Dean, she was Professor and Chair of the Department of Epidemiology at the Harvard Chan School and Program Leader of the Population Health and Health Disparities Research Programs at Harvard's Clinical and Translational Sciences Center. Dean Williams previously had a distinguished career at the University of Washington School of Public Health. Her scientific work places special emphasis in the areas of reproductive, perinatal, pediatric, and molecular epidemiology.



DR STEPHANIE WILLIAMS
AMBASSADOR FOR REGIONAL HEALTH SECURITY, DEPARTMENT OF FOREIGN AFFAIRS AND TRADE

Dr Stephanie Williams was appointed as Australia's Ambassador for Regional Health Security in March 2020. As Ambassador, Dr Williams supports the advancement of Australia's interests in the Indo-Pacific by fostering linkages between Australia's world-class public health and medical research experts and partners in the region. In addition, she guides the implementation of the Health Security Initiative for the Indo-Pacific region (\$675 million 2017-2027) and the \$523 million regional Vaccine Access Initiative – two major health initiatives for the Indo-Pacific region.

Dr Williams is a Public Health Physician and Epidemiologist, who has been DFAT's Principal Specialist Health since 2017. As Principal Specialist Health, she leads technical advice for health investments across the Australian development program.



DR JUDITH WONG
DIRECTOR, MICROBIOLOGY AND MOLECULAR EPIDEMIOLOGY DEPARTMENT, NATIONAL ENVIRONMENT AGENCY SINGAPORE

Dr Judith Wong is a Director at the Environmental Health Institute, National Environment Agency, Singapore, where she oversees the Microbiology and Molecular Epidemiology Division. She leads a multidisciplinary scientific team working on various One Health initiatives including risk assessment and surveillance of vector-borne diseases, bio surveillance, and environmental monitoring of antimicrobial resistance. Judith was integral in leading and setting-up Singapore's Wastewater-Based Epidemiology Programme, which expanded from a research initiative to a national surveillance system spanning across more than 500 locations countrywide.

Judith is also involved in other environmental surveillance initiatives and has developed various environmental mitigation and technical advisories to support COVID-19-related responses.

Judith received her PhD in Biological Sciences from the National University of Singapore and is an ASEAN-Australian One Health Fellow with Murdoch University, Australia.

Appendix B: Speech by Mr Ong Ye Kung, Minister for Health, At the Global Health Security Conference, 29 June 2022, 8:45am At Suntec Singapore Convention & Exhibition Centre

His Excellency Jose Manuel Barroso, former President of the European Commission
The Hon. Malcolm Turnbull, former Prime Minister of Australia
Her Excellency Tarja Halonen, former President of Finland
Dr Joseph Phaahla, Minister of Health, South Africa
Dr Jane Ruth Aceng, Minister of Health, Uganda
Distinguished guests

Ladies and gentlemen

1. Thank you for choosing Singapore as the venue of the Global Health Security Conference and inviting me to deliver the opening address.
2. The world is closely monitoring the clusters of cases of monkeypox infection that have been detected in many countries around the world.
3. As far as COVID-19 is concerned, Singapore is now in a relatively stable position. We have managed to step down most of our social restrictions and reopened our borders to allow free travel for vaccinated persons. Many people now go about their lives normally, with COVID-19 almost out of sight and out of mind, until yesterday when we announced higher cases.
4. However, those of us who have been deeply involved in the fight know that the pandemic is not over. We cannot let our guard down as we are likely to see new waves arising from new variants of concern. Indeed, we are beginning to see an increase in COVID-19 cases in our community, largely driven by newer Omicron subvariants BA.4 and BA.5. These variants are also causing a surge in cases worldwide.
5. We must be prepared to deal with future challenges, and we must learn from the lessons of the past as we deal with new pandemics. So today, let me focus on the immediate issue of global health security against pandemics.

An Unprecedented Global Response

6. A pandemic is a serious security threat. Because it threatens the functioning of global supply chains, prevents the delivery of food and essential items, forces border closures and suspends the exchange of peoples, causes a global scramble for vaccines and medical supplies, and over six million deaths (and that is probably an underestimation), it is a serious security issue.

7. Like all security issues that threaten our lives and the world, we need the collective will and action of the international community. If we look back at how we have responded to COVID-19 as an international community, I think it is a picture that is far from gloom and doom, because there are many unprecedented positive responses. Let me give a brief run down.

8. Due to the advancements in genomics science, days after its initial outbreak in Wuhan, the genome of the virus was sequenced, uploaded on a very established platform and made available to the world. This facilitated the development of tests enabling detection in infected persons. This, in turn, formed the foundation of infection control.

9. This contrasted with SARS in 2003, during which a test kit was not available until a month into the outbreak here, and we had to rely on clinical features, such as temperature-taking, to detect potentially infected persons.

10. Because of advancements in digital technology, our smart phones have become contact tracing devices. In Southeast Asia, there is the My Sejahtera in Malaysia, TraceTogether in Singapore and PeduliLindungi in Indonesia, and in Europe there is Germany's Corona-Warn-App, Ireland's COVID Tracker and Italy's Immuni. These help us map the trajectories of virus transmission and alert us to potential exposure to infections.

11. International institutions were already in place when the outbreak happened to try to pull together a collective response for the world. This includes the relentless work of the World Health Organization (WHO), as well as the significant contributions of organisations such as GISAID, CEPI, FIND, Gavi and the Global Fund in helping the world understand the development of the virus, driving and catalysing the development of vaccines, diagnostic tools and therapeutics, and making them as accessible as possible throughout the world.

12. For example, GAVI, the Vaccine Alliance and the Coalition for Epidemic Preparedness Innovations (CEPI) have brought governments and businesses together through the Access to COVID-19 Tools (ACT) accelerator to rapidly develop, produce and improve equitable access to diagnostic tests, treatments, and vaccines. Under this effort, 1.3 billion doses of vaccines have been shipped to 87 low and lower-middle income countries around the world in 15 months. It also accounts for 82% of the vaccines delivered to low-income countries.

13. I think the most significant was the unprecedented speed at which vaccines were developed. It took only ten months, or about 300 days, from the initial outbreak of COVID-19, for mRNA vaccines to be available. This, of course, was built on years of experience, research and testing that had gone on beforehand to understand coronaviruses, mRNA technology, refinements of the evaluation process and innovations in performing clinical trials.

14. Today, pharmaceutical companies are working on multivalent, or pan-coronavirus vaccines, to better protect humankind against a fast-mutating virus. Scientists, under the coordination of CEPI, are working on the ambitious 100-day vaccine development project for the next pandemic threat. This amazing compression of vaccine development timeline was unthinkable during the previous pandemics.

The Case for Global Coordination

15. The global health response against the pandemic, while I think overall positive, has not gone smoothly. Vaccines and diagnostic tools may have been made available, but the lack of consumables had impeded large scale production at certain points in time. There were disruptions in supply of raw materials due to export controls imposed by certain countries. There were complaints about patent protection that prevented more widespread production and supply of vaccines.

16. These are all part of the unhappiness and discontent against the global system of innovation and production. However, if this system did not exist in the first place, there would not be any international scientific collaboration, no global sourcing for rapid production and delivery, nor any incentive for commercial pharmaceutical companies to invest in innovation and technological breakthroughs. Without the pre-conditions made possible by globalisation, we would not likely have had COVID-19 vaccines in record time in the first place.

17. The risks and benefits of globalisation, free trade and international collaboration are most stark to small countries like Singapore. For us, globalisation made available COVID-19 vaccines which we would not have been able to develop on our own. International trade strengthened our security due to diversification of supply. Often, it lowered costs as we were able to identify more cost-efficient sources from which to purchase products and services.

18. On the other hand, export controls and protectionism in the name of self-sufficiency will ultimately harm all of us. We cannot afford for multilateralism to be dead nor for globalisation to reverse its course.

19. We live in a globalised world, with global problems needing global solutions. We must embrace the good and bad of an inter-connected and mutually dependent world and make the best of it. Corruption, greed, poor policies and weak institutions are often at the heart of societal problems, but the realities of politics mean that globalisation often takes disproportionate blame.

20. Globalisation and multilateralism must be part of the solution of future pandemics. The impact of COVID-19 has been catastrophic, but I believe history will judge humankind's response to be on the whole, swift and effective.

Capabilities Disparity and Vaccines Inequity

21. Now let me talk about a significant shortcoming of our pandemic response. There is a major one, which we need to collectively address, and that has to do with disparity and inequity between countries – in terms of capabilities in managing the pandemic and access to vaccines.

22. Delays in the detection of new variants of concerns or new pathogens will mean losing precious days and weeks to contain the spread of new threats. Today 92% of genomic surveillance

data comes from high income countries and only 8% from low- and middle-income countries.

23. More importantly, so long as there are regions in the world which have limited access to vaccines and their population under-vaccinated, we risk the virus undergoing evolutionary pressure and mutating into something we cannot deal with that knocks us back to square one in this game of snakes and ladders.

24. We are collectively building a global commons here. Until all regions and countries in the world have the local capabilities to mount an adequate response to detect deadly viruses and build up their population immunity, our collective response is incomplete and we are only as strong as the weakest link.

25. The underlying conditions that will give rise to future pandemics – urbanisation, climate change and globalisation – continue to be the realities of the world we live in. We will therefore face another pandemic in time to come, and the problems of capability disparity and vaccines inequity will need to be narrowed and fixed, so that in the next pandemic, the virus cannot outrun us.

26. What should be our starting point? It should be to marshal global resources and determine how they should be used to best effect.

Strengthening Global Commons

27. To that end, in January 2021, the G20 established the High Level Independent Panel (HLIP), which recommended actionable solutions to achieve what I just mentioned. The HLIP's proposals were considered at last year's G20 meeting in Rome, and this year, under the chairmanship of Indonesia, further progress was made with the establishment of the Financial Intermediary Fund (FIF) under the World Bank.

28. This fund will serve as a dedicated source of resources for pandemic prevention, preparedness and response. What is different and encouraging is FIF has attracted over US\$1 billion of funds, with contributions from the United States, European Union, Germany, Indonesia and the Wellcome Trust. Singapore has pledged a contribution of US\$10 million, and we hope that more country and philanthropic contributions will follow.

29. I believe the establishment of the FIF is one of the most significant developments in international pandemic response over the past year. In the coming months, G20 Health Ministers and officials will have to work out the intended usage of the funds, and its governance structure and interface with the WHO.

30. Indonesian Health Minister Budi Sadikin, who chairs the G20 Health Ministers' meeting, set out the parameters very well in our meeting last week in Yogyakarta. The source of funding has to be "new" money, and cannot be a diversion of "old" money that is currently used by other international institutions now; the fund has to be allocated between normal time and crisis time, including strengthening local healthcare capabilities in responding to a pandemic; deployment of funds needs to leverage the capabilities and work of existing infrastructure and institutions, so that we do not have to reinvent current practices.

31. Crucially, Minister Budi said that we need to work with the producers of the emergency medical countermeasures from the private sector, like pharmaceutical companies, because they will continue to be a critical part of the solution. This will include working with them to ensure adequate production capacity and a better distribution of vaccines between countries of all income levels.

32. Much work remains to make the FIF a significant addition to institutionalised global response against pandemics.

Forging Effective Partnerships and Regional Cooperation

33. Forging sustainable solutions also requires effective partnerships with all existing key institutions and agencies. The WHO will need to contribute its technical expertise to guide the allotment of FIF funding.

34. Existing global institutions, agencies and commercial companies continue to be vital in providing the infrastructure to develop, manufacture and deliver vaccines to all countries and regions in need.

35. Regional groupings, whether in Southeast Asia, Latin America, South Asia – various parts of the world – can play an important role, to serve as a bridge between countries and the global community. As a region, countries can more quickly work out solutions, such as to ease the movement of goods to those in need within the region, and facilitate clinical trials or expedite regulatory approvals, so that vaccines can reach the market faster.

36. The recently concluded WTO Ministerial Conference achieved several agreements, including changes to the Trade-Related Aspects of Intellectual Property Rights (TRIPS) regarding the use of patents during a pandemic crisis. It is a very encouraging development. While the agreements were not as substantive as the conclusion of a new round, it reinforces the relevance and importance of multilateralism and international cooperation, at a crucial time in human history.

Closing

37. Ladies and gentlemen, in the wake of COVID-19, it is Singapore's sincere hope that the international community can strengthen the mechanism and support to bolster our global commons of preparedness and response against future pandemics.

38. I hope that this conference can be a platform for a good, constructive, honest exchange of ideas and a launch pad for partnerships. I wish everyone a thought-provoking and fruitful conference and I thank you for your commitment to global health security.

39. Thank you and have a great conference ahead.

FINAL CONFERENCE REPORT

GHS2022



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