

Executive Summary

The 6th Global Health Security Agenda Ministerial Meeting “Bridging Cooperative Action for Global Health Security”

18- 20 November 2020

Virtual Meeting Hosted by the Royal Thai Government

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The 6th Global Health Security Agenda Ministerial Meeting was held virtually during 18- 20 November 2020 with the main objectives to exchange our experiences on disease prevention and control among various sectors and countries, update the progress of action packages implementations, enhance the engagement of multi – sectoral cooperation, identify gap of implementation and fill them with our wise and concrete action as well as jointly address means and ways forward to improve the GHSA mechanism and collaboration on the global health concern issue. The meeting was attended by distinguished delegates from GHSA participating countries (354 Delegates from 47 Countries), Private Sectors, Development Partners and other relevant sectors (1,109 observer from 97 countries). In the meantime, there were 16 important side meetings organized by the GHSA members and development partners.

During the three days of ministerial meeting, the participants have a great opportunity to discuss and share the information on the key crucial issues including the balancing between the Health & Economy, Multisectoral cooperation, Whole of Society Approach to respond to the disease outbreak, and the sustainable Financial Investment. The meeting highlighted on the following issues and recommendations:

1. ‘Mass Compliance’ on basis public health preventive measures to minimize COVID-19 transmission in the community before delivering of an innovative vaccine is VITAL.
2. Investment for capacity building - prevention, detection & response is so important.
3. Health security is a global issue, thus, we need to work together. A multi-government approach is needed. We need to reach out beyond health sector alone: engage financial sector, learn from existing good practices and improve networking and collaborations.
4. COVID-19 has shown that world is still ill prepared against pandemic threats. We need technical but also political readiness and good governance.
5. A strong vision is needed to prepare for the next pandemics. Achieving GHSA targets is a marathon, not a sprint.
6. There is a need to improve coordination between GHSA Members, action packages and various health and non-health stakeholders by using a multi-sectoral ONE HEALTH approach.
7. We need well-targeted policies tailored towards supporting health care systems but also to improve the socio-economic situation and aid the recovery of the economy

8. Covid-19 creates major supply shocks, increased food prices and largely impacted the labor market, the education system, tourism and human capital building. Thus, we need global solidarity to combat COVID-19. The vaccine and fast diagnosis are overarching to protect people from any forms of the public health threats.
9. It is a false choice to choose between health and economy, they are integrated and interdependent. We need to ensure the balance between the implementation of disease control and maintaining the economic system
10. Health is not cost but an investment. There is a need to rethink policies to build back stronger.
11. Governments need to prepare for the next pandemic by investing in social insurance and financing health systems
12. GHSA plays significant role to work across sectors to prevent detect and respond to health threats and needs to continue during peace time and not only during pandemics

At the last session of the Ministerial meeting, there was a “Handover of Chairmanship Ceremony” which transferred the Chairmanship of GHSA Steering Members from the Netherland to Thailand. Above all, the chair of the meeting also declared “the Chair’s Declaration” which expressed the strong commitment of GHSA Members to implement the Global Health Security. The commitment emphasized on the 4 main issues as follows:

1. The need to intensify our concerted efforts in achieving the GHSA 2024 Overarching Target
2. The need for global solidarity to nurture multi- sectoral cooperation and collaboration with relevant sectors at all levels taking a One Health approach to address root causes, and establish early warning systems and risk reduction initiatives of global health security threats and mitigate their impacts;
3. The continued support from international organization, development partners, and donors including the Tripartite (FAO/OIE/WHO collaboration)
4. The collaboration of GHSA Action Packages, Task Forces, and key stakeholders to initiate and further advocate on priority issues including development of diagnostic, vaccines and therapeutic treatments, management of PPE, strengthening of biosafety and biosecurity and laboratory systems, enhancing workforce development, investment in innovative techniques and research development, maximizing existing regional and global networks, as well as sharing best practices.

PRE-MINISTERIAL MEETING REPORT

The 6th Global Health Security Agenda Ministerial Meeting “Bridging Cooperative Action for Global Health Security” Virtual Meeting Hosted by the Royal Thai Government, 18 November 2020

Introduction

1. The Pre-Ministerial Meeting of the 6th Global Health Security Agenda Ministerial Meeting was held virtually on 18 November 2020 and aimed to take stock of progress of GHSA 2024 Framework implementation made by the GHSA Action Packages and key development partners. It was attended by distinguished delegates from GHSA contributing members, non-GHSA members, the private sector, development partners and other relevant sectors.
2. The meeting was held in plenary. It was chaired by Dr. Khanchit Limpakarnjanarat, Advisor, Department of Disease Control, Ministry of Public Health, Thailand and co-chaired by Dr. Supamit Chunsuthiwat Advisor, Department of Disease Control, Ministry of Public Health, Thailand.
3. The Chair extended his appreciation to all organizers of the Side Meetings for their excellent efforts in organizing the side meetings to highlight achievements, progress, challenges, commitments, and ways forward. The chair informed the participants of housekeeping matters such as posting questions via chat box as well as responding to Q&A.
4. Representatives of the side meeting organizers took turns presenting the key findings of the 16 side meetings conducted from 15 October – 5 November 2020 as follows:

Group 1: Foster Coordination and Financial Preparedness

1) COVID-19 Vaccine Financing: Pathways, Priorities and Pitfalls

Hosted by: Australia’s Indo-Pacific Centre for Health Security on behalf of the Sustainable Financing for Preparedness Action Package Working Group, on 3 November 2020, 16.00-17.30 (ICT)

Presenter: Dr. Lara Andrews, Department of Foreign Affairs and Trade, Australia

5. Noting the COVID-19 vaccine market development, this side event aimed to initiate the conversation on how we, as a global community can overcome the challenges posed by multiple external vaccine financing pathways to ensure that resources are used for a sustainable COVID-19 response and to strengthen immunization systems. Greater coordination and alignment of external financing for COVID-19 vaccines are expected.
6. It was noted that key development partners have made significant contributions on COVID-19 vaccine development such as Gavi, Johnson & Johnson, Asian Development Bank, World Bank, Australian Government, and the Government of the UK.
7. Key messages, among others, include:
 - Call for all to prioritize coordination and for a commitment to be transparent with financing and plans for COVID-19 vaccines;
 - Countries and communities must be at the center of vaccine need assessments;
 - Stakeholders across ministries and development partners to support country leadership in accessing the information required to assess needs and help plan for vaccine roll outs;
 - Countries need to finance vaccines for the 80% of their population not covered by the Gavi COVAX Advance Market Commitment;

- “No one is safe until we are all safe”;
- Research & development and getting products to market must be included in capability and capacity for preparedness;
- Development actors need to work in complement and to their comparative advantages as continued engagement between the major mechanisms for financing is necessary;
- Identified challenges such as complexity of supply and demand, and rolling out widespread vaccination programs
- GHSA can play a crucial role in facilitating dialogue and coordination on vaccine financing to contribute to equitable access to vaccines.

2) The Post-COVID World: How Should the Health and Finance Sectors Work Together to be Prepared for the Next Pandemic?

Hosted by: The Sustainable Financing for Preparedness Action Package Working Group, 5 November 2020, 19.00-21.00 (ICT)

Presenters: 1) Eric Meyer, Deputy Assistant Secretary, Treasury Department, USA

2) Colin McIlff, Deputy Director for Global Affairs, Department of Health and Human Services,

USA

8. This side event brought together governmental and non-governmental representatives from the health and finance sectors to identify areas for joint action in light of COVID-19. Key salient points are as follows:

- Recognized the importance of using whole of society and One Health approaches to achieve needed pandemic preparedness;
- Urged partners to look outside of the preparedness space for successful strategies (e.g., pension funds and shareholders to incentivize climate financing);
- Needed engagement of health, finance, other public sectors, and private sector partners to further strengthen integration between health and financing for Universal Health Coverage;
- Identified challenges that included competing demands during the pandemic, under-investment in health and further constraints under current economic conditions, and the past pattern of panic-and-neglect leading to loss of attention (e.g., Ebola in West Africa);
- Needed fostering of financial support and engagement of joint collaboration between governmental, non-governmental and partners to prevent, detect and respond to the COVID-19 pandemic and preparedness and response plan for future pandemic
- Suggested joint health and finance actions such as:
 - Collaboration in strategic planning and related efforts (e.g., health and economic modelling, risk assessments, monitoring investments, stress tests/simulation exercises, developing and implementing National Action Plans for Health Security);
 - Addressing challenges in public financial management to maximize budgetary space (e.g., improve/demonstrate efficient and effective use of funds); sustain attention and leadership for preparedness; and strengthening public private partnerships from the COVID-19 response for long-term preparedness.

3) Leveraging Private Sector Resources to Strengthen Global Health Security

Hosted by: Private Sector Round Table for Global Health Security (PSRT) on Monday 2 November 2020, 19.00-21.00 (ICT)

Presenter: Shelby Deaton, Private Sector Roundtable (PSRT)

9. This side event focused on the value of linking countries’ needs with PSRT members’ capabilities, along with creating efficient and effective multisectoral partnerships to improve health security and coordination at the community, national, and global levels. It was noted that the private sector has a lot to offer to the GHSA community, both in health and technical innovation, project management, implementation, and evaluation expertise such as investing in preparedness and

facilitating a robust pandemic response that necessitates private sector involvement to help develop the necessary tools and trainings, along with inter-coordination within governments, for example between Ministries of Health, Agriculture, and Finance.

10. The gaps lead to slow global health security progress including a lack of dedicated funding, technical capacity, and bandwidth (countries, multi-laterals, academia, and the private sector).

11. Key messages, among others, are:

- Require dedicated financial investment including investment in preparedness and surveillance, linking human and animal health databases and tracking expenditures in health security to better streamline investments and avoid duplication of efforts;
- Availability of tools & trainings to a wide range of global health security stakeholders of which can be useful for countries to use for global health security improvement developed by some of PSRT members; and
- Need an inclusion of the private sector and inter-coordination between government ministries, especially health and finance to help countries to effectively prepare for future global health threats.

4) Building Better for the Next Pandemic: Advancing Multisectoral and Whole-of-Society Approaches to Health Security Preparedness

Hosted by: The World Health Organization

Presenter: Dr. Stella Chungong, Director, Health Security Preparedness (HSP) Emergency Preparedness and IHR

12. Highlights of the Side Meeting included:

- National health authorities need to go beyond health systems to collaborate with sectors such as water sanitation hygiene, trade/transport, IT and local government for robust preparedness;
- Technical consultations on the “Health systems for health security” framework been carried out by WHO;
- Key gaps in preparedness shown through the IHR (2005) have been magnified by COVID-19 (e.g. risk communication, disease surveillance, national diagnostic capacities);
- Tripartite operational tools (WHO, OIE & FAO) are being used to strengthen One Health preparedness;
- Implementing COVID-19 Intra-Action Reviews and Simulation Exercises is helpful in identifying key preparedness gaps and challenges for the pandemic & beyond – reaffirmed by Thailand’s IAR and benefit for the country to identify room for further improvement;
- Mapping all domestic and internationally available resources has mobilized more technical and financial support toward preparedness and response;
- Strengthening urban health emergency preparedness must continue to be a priority for countries given the increased risk of disease introduction and spread in these settings;
- Multi-sectoral partnerships and coordination are essential for whole-of-society approaches to preparedness;
- Health security is now a global priority and countries need to maintain momentum to strengthen long-term health security including through sustainable financing mechanisms;
- Countries need to dedicate greater domestic resources, and donors to align with national priorities and critical gaps;
- Recent and new multisector partnerships need to be scaled-up to ensure continued effective coordination that addresses country risks and vulnerabilities;
- Preparedness and response are on a continuum – quoted ‘we cannot prepare without thinking of response and we cannot respond without thinking of preparedness’;

Group 2: Share Best Practices, Resources and Tools

5) Sharing Best Practices of Lab Diagnostic Response for COVID-19

Hosted by: Thailand and Contributing Countries of Detect 1 (National Laboratory Systems) on 21 October 2020, 09.00 am. - 12.00 pm (ICT).

Presenters: Dr. Supakit Sirilak, Director General, Department of Medical Sciences, Ministry of Public Health, Thailand and Ms. Noppavan Jannejai, the Department of Medical Sciences

13. The side meeting intended to review and identify gaps of lab diagnostic responses to COVID-19, to share best practices and lessons learned on lab diagnostic responses from COVID-19 experiences, and to promote multi-sectoral engagement on lab diagnostic preparedness and responses.

14. Highlights of the side meeting, among others include:

- Sharing lessons learned from Thailand and Indonesia based on the results of Intra Action Reviews noting key success factors e.g. robust medical services, early screening and activation, flexible management, building capacity, active communication, networking, and preparedness;
- Sharing experiences of laboratory diagnostics for COVID-19 responses from Singapore and Malaysia such as enhancing laboratory capacities for testing COVID-19, national regulations for COVID-19 laboratory networks, laboratory licensing, parallel testing, and quality assurance programs;
- Emphasizing roles of regional networking in contributing to lab preparedness & responses for COVID-19; the Regional Public Health Laboratory Network (RPHL Network), Emerging Viral Diseases-Expert Laboratory Network (EVD LabNet), and the Caribbean Public Health Agency (CARPHA)
- Roles of Multi-sectoral engagement such as public and private, academia, research institute and animal health laboratories;

15. Enhancing multi-sectoral engagement on laboratory diagnostic, among others, include surge capacity and resource mobilization, coordination and collaboration on sharing information among networks, active engagement with global community, points of entry, quarantine, sharing resources and tools, enhancing laboratory networking and diagnostic laboratory networks, expertise exchange, data sharing/reference laboratory system, and utilizing One Health, whole-of-society, as well as whole-of-governments approaches.

16. It was noted that the GHS A Detect 1 Action Package, led by the USA and other countries, will be reviewing the new strategic roadmap on Laboratory System Strengthening in consultation with D1 participating countries and key development partners. Specific recommendations include networking of the lab networks, utilizing the Joint External Evaluation (JEE) results, and maintaining momentum of working across action packages, sectors, and ministries.

6) Side Meeting “Biosecurity and Biosafety in the Time of COVID-19: Taking Action to Mitigate Urgent and Emerging Biological Risks”

Hosted by: The Action Package: Biosafety and Biosecurity/Nuclear Threat Initiative/ASEAN Defense Ministers' Meeting Tabletop Exercise Organizers

Presenter: Jacob Eckles, Program Officer, Nuclear Threat Initiative

17. In the absence of sufficient biosafety and biosecurity, there could be an increase the risk of accidental or deliberate infections and releases of dangerous pathogens. The Global Health Security Index in 2019 found that only 1% of countries had appropriated biosafety and biosecurity. This side meeting aimed to highlight actions taken across and within regions to implement biosecurity and biosafety capacities during COVID-19.

18. Key messages included:
- Emphasize the critical role regional organizations have as countries address concerns related to biosecurity and biosafety, particularly the critical role they have in coordinating action and supporting national responses during COVID-19;
 - Underscore the role of GHSA in bringing countries together to work together toward common targets and metrics, particularly through the Action Package on Biosafety and Biosecurity (AP3);
 - Stimulating action towards addressing national-level gaps in health security, particularly across the health and security sectors;
 - COVID-19 has shown the world that we are all interconnected and as a result dependent upon one another;
 - Maintaining political leadership on biosecurity and biosafety issues is critical and must be a best practice; and
 - Collaboration is critical, particularly during outbreaks with unclear sources or deliberate attacks, it is necessary for the health and security sectors to work together.
19. After the presentation, questions and comments from the meeting were deliberated included:
- How can action package stimulate linking countries in need of support and sharing?
 - Lessons learned by countries are useful and good to be shared by utilizing web platforms and sharing information across action packages within action package network;
 - Does the biosecurity action package focus on biosecurity and biosafety of animal farms?
20. Collaboration with the animal sector exists in relevant GHSA Action Packages. The human-animal interface is crucial, so trainings on biosecurity and biosafety need to be aligned with both human and animal health sectors.

7) Monitoring and Evaluating Health Security: Using the Global Health Security Index to Take National-level Action

Hosted by: Nuclear Threat Initiative, Johns Hopkins Center for Health Security

Presenter: Jessica Bell, Senior Program Officer, Nuclear Threat Initiative

21. The Side Meeting brought together country representatives to share lessons learned from the COVID-19 pandemic and necessary actions moving forward, discussed the need for monitoring and evaluation tools that are complementary, with continued refinement, to help countries address gaps, and highlighted importance of the next generation of biosecurity leaders.
22. Key challenges include:
- Stimulating action towards addressing national-level gaps in health security and addressing trust in government
 - Recognizing the needed adjustments in monitoring and evaluation to incorporate lessons from the current COVID-19 pandemic
23. Key messages are as follows:
- A thorough understanding of the successes, quicker action and better preparedness are crucial in fighting against pandemics as well as saving the economy.
 - Public health and health system capacities should be improved. Pandemic exercises should be conducted with high-level leadership to ensure a common understanding on response processes. Health system infrastructure should be improved.
 - Communication between all parties involved in response activities should be improved to ensure engagement prior to a pandemic.
 - Strong communication and good infrastructure should be established.

- GHSA should be utilized as a platform for improving relationships among countries for better engagement and communication during a pandemic.

24. It was noted that the GHS Index will reassess the framework and update the questions based on experiences from the COVID-19 pandemic, in the aspects of effectiveness in the pandemic response, chain of command, government structure, functionality and capacity at the national level, capacities for zoonotic diseases based on publicly available data, and non-pharmaceutical interventions.

8) Side Meeting Catalyzing Action on Global Health Security through Productive Plans

Hosted by: United States Centers for Disease Control and Prevention (US CDC)

Presenters: Michael Mahar, lead for GHSA, Division of Global Health Protection, US CDC and Dan Stowell, Global Health Security Specialist, US CDC

25. The session aimed to highlight the success that Nigeria, Sierra Leone, and Uganda have achieved in building health security capacity using tools such as JEE, Benchmarks, National Action Plans for Health Security (NAPHS); and articulate their key practices and processes which can be adapted by other countries. It was noted that JEE establishes a level of capacity for specific technical areas for health security while the Benchmarks contain actions to improve JEE scores, and the NAPHS are plans designed to address the gaps in the JEE.

26. Improvement in JEE scores of the three countries were presented including:
- **Sierra Leone 2018-2019:** improved 31% in human health indicators and 27% in animal health indicators in one-year, technical areas with JEE scores of 1 decreased from 15 to 12, and technical areas with JEE scores of 4 or 5 increased from 8 to 12
 - **Nigeria 2017-2020:** JEE Ready Score increased to 46% from 39%, and 20 indicators had improved scores
 - **Uganda 2019-2020:** Got out of the red, 33 completed activities in year 1

27. Impact on health security capacity in three countries was also highlighted. Common approaches, which drove success in building health security over time are as highlighted below:

- Engage leadership early and often;
- Focus efforts on a limited number of priority short-term activities by developing a set of criteria to rank the activities, using the Benchmarks to pinpoint activities that would result in higher JEE scores, or developing new activities for the 1-year plan using the Benchmarks in consideration of time, funding and relevant partners;
- Generate support from across sectors of government through early engagement and securing high level political support;
- Conduct regular reviews on the progress of the activities in the plans as opportunities to reassess and refine the 1-year plan and identify activities that were not progressing;
- Track progress of the activities in the plan between check-ins such as web-based systems; and
- Create accountability for the activities in the plan by identifying specific point of contacts for each activity while tracking their status and reporting back.

Group 3: Promote Multi-Disciplinary Engagement

9) Building National Capacity for Zoonotic Diseases Response: The Tripartite Zoonoses Guide – Tools and Resources for Pandemic Preparedness

Hosted by: The Tripartite (FAO, OIE, WHO) on Wednesday 21 October, 17:30 - 19:00 (ICT)

Presenters: 1) Dr. Susan Corning of OIE, Dr. Stephane de la Rocque of WHO

2) Dr. Sean Shadomy of FAO, Dr William Karesh, Chair of the OIE Wildlife Working Group and Executive Vice President of the EcoHealth Alliance

3) Dr. Henk Jan Ormel of FAO

28. This side meeting aimed to introduce the recently-launched One Health tool, the Tripartite Zoonosis Guide (TZG) and its Operational Tools.

29. One Health tools are made available, including those of capacity assessments, regulatory frameworks, expert networks, and planning tools. As a planning tool, the TZG was introduced to guide countries through the identification of country needs, as determined by both the IHR Monitoring and Evaluation framework and the OIE PVS Pathway, and assists in the prioritization of national activities and the development of One Health Roadmaps.

30. To guide countries on how to use the TGZ, the three following Operational Tools (OT) including the Joint Risk Assessment, the Multisectoral One Health Mechanism, and the Surveillance and Information Sharing have been introduced.

31. The meeting also highlighted best practices for a multisectoral One Health approach to health threats at the human-animal-environment interface.

32. Key messages/recommendations/ways forward are as follows:

- Due to an increasing risk of disease at the human-animal-ecosystem, stakeholders mapping and engaging these stakeholders in a multisectoral strategy will reduce risks and bring benefits to health, agriculture, and to society as a whole;
- Disease threats at the human-animal-ecosystem interface are increasing, and the increase in emerging infectious diseases and zoonoses are related to changes in the practices of many sectors and in societal behaviors;
- Although no single sector is responsible for a global health pandemic, many sectors of society contribute to, and/or are affected by one, demanding broader and more integrated multisectoral engagement to reduce health threats associated with interactions between humans, animals and the environment; and
- The Tripartite Zoonoses Guide and its Operational Tools are recommended to guide countries as they develop a framework for a comprehensive One Health approach through targeted activities and the alignment of resources to mitigate risks of priority zoonotic diseases.

10) Side Meeting: Zoonotic Disease Action Package Update and Coordination

Hosted by: The Zoonotic Disease Action Package (ZDAP) on Tuesday 21 October 2020, 15:30 - 17:30 (ICT)

Presenter: Dr. Vu Ngoc Long, Ministry of Health, Viet Nam

33. This Side Meeting aimed to update the progress, success and challenges of the Zoonotic Diseases Action Package (ZDAP) among ZDAP member countries in terms of strengthening and maintaining technical capacities, how to establish and strengthen coordination, communication, multi-sectoral engagement, and information sharing. The ZDAP national efforts of COVID-19 were also discussed. ZDAP-related progress, successes and challenges from member countries have been updated during this side meeting.

34. Two international webinars, on the topics of One Health Coordinated Surveillance and Data Integration and of Wildlife Spillover and its Future Potential Risk for Pandemic, were carried out to improve their understanding of these topics. Recommendations to further strengthen collaboration and communication included:

- Finalization of ZDAP Terms of Reference is in process of approval by ZDAP member countries;

- ZDAP Workplan for 2021 will be distributed to contributing countries for feedback and approval; and
- Senegal is proposed to be the ZDAP Chair for 2021, to be confirmed.

11) Turning Crisis to Opportunities for Workforce Development

Hosted by: GHSA D5 Workforce development, Division of Epidemiology, Department of Disease Control of Thailand's Ministry of Public Health on Tuesday 3 and 4 November, 17:00 - 20:00 (ICT)

Presenter: Dr. Chawetsan Namwat, Thai FETP Director

35. Highlights of the side meeting include:
- The Regional Strategic Framework for Public Health Workforce Development and Systems Strengthening on Epidemiology (2016 – 2020) is being implemented and reviewed;
 - COVID-19 has disrupted resource allocation and Workforce Development implementation and proved for the need of a greater number of epidemiologists;
 - A workforce including physicians, veterinarians, biostatisticians, laboratory scientists, farming/livestock professionals;
 - COVID-19 should be considered as opportunities for workforce development rather than crisis
36. Achievements to be noted including collaboration & coordination among epidemiologists from ASEAN Veterinary Epidemiology Group (AVEG) and ASEAN+3 FETN, policy and advocacy, strengthen capacity of Field Epidemiology Workforce
37. Main challenges in implementing the WFD Action Package and the Regional Strategic Framework at the country level are as follows:
- Lack of national strategy or framework to support the Workforce Development;
 - Variations in country field epidemiology competencies and availability of training programs and field epidemiologists including the ability to strengthen competencies among country members;
 - A great need to enhance multi-sectoral and multi-lateral collaboration and engagement.
38. Recommendations are as follows:
- Extending the regional strategic framework for public health workforce development and system strengthening on epidemiology 2016-2020;
 - Promoting the regional strategic framework and the WFD AP to be localized and used by countries; and
 - Making more sustainable investments contributing to multi-disciplinary workforce development in epidemiology including resource sharing and networking, this involves all contributing members.

12) Moving Toward Best Practices in Multisectoral Coordination: Integrating Environment and Health to Strengthen Capacities to Prevent, Detect and Respond

Hosted by: GHSA Task Force on Advocacy & Communications and the GHSA Consortium (EcoHealth Alliance and MSH), 4 November, 19:00 - 21:00 (ICT)

Presenter: Dr. Julie Fischer, Chair, GHSA Consortium

39. This side meeting aimed to promote multi-disciplinary engagement across human, animal, agriculture and environmental health sectors and sharing best practices, specific resources, and concrete actions for members aligning with the GHSA 2024 Framework.
40. A set of recommendations to further strengthen collaboration and communication included:
- Existing tools for assessment and benchmarking limit engagement of the wildlife and environment sectors in health security

- Need to set up clear routes for multisectoral resource mobilization
- Institutionalizing One Health/multi-sectoral coordination in national governments can help build pandemic preparedness, enhance prevention programs, implement national action plans (e.g. AMR, health security) and investigate and control outbreaks across sectors.
- Increase investments in prevention
- Enhancement of preparedness in a multi-sectoral frame
- Need for models to predict events and track ranges, integrating climate factors
- Joint interventions for Wildlife/ Environment sectors together with Health, Agriculture and other practices under One Health, and require sustainable attention, training, financing, and cooperation for systems building
- Early warning systems are tools and processes that aim to reduce risk and impact of hazards by providing timely and relevant information in a systematic way.
- The Epidemic Intelligence from Open Sources (EIOS) approach builds on the All Hazards, One Health principle

41. Key messages/recommendations/ways forward:

- Need to ensure systematic and effective integration of the wildlife and environment sectors with the health security
- Wildlife and environment sectors are often left out of the scope of health security initiatives
- Need more integration of wildlife/environment in the Joint External Evaluation (JEE), Performance of Veterinary Services (PVS) and National Action Plan for Health Security (NAPHS);
- Wildlife health and disease information systems need to be built/strengthened, and approaches to prevent and manage zoonotic EIDs can be targeted to relevant risks, entry points and strategies (e.g. the World Bank China Emerging Infectious Diseases Prevention, Preparedness and Response Project focuses on risk-based surveillance, prevention and control, institutional strengthening and human resource development in line with One Health)
- Need to identify gaps in data integration among human, animal, and environmental sectors, using the GHS Index
- A long-term strategy is needed to understand underlying causes, factors and behaviors, and systematically reduce underlying risks.

42. Deliberations after 'Group 3 Presentations' include:

Q: How can One Health be implemented to countries in the COVID-19 outbreak environment?

A: Besides national leadership, technical support from international organizations such as WHO and OIE is also important, in terms of guiding countries' national plans. Remaining gaps are needed to address responses. One Health communities in each country should identify these remaining gaps and One Health collaboration is also crucial. Countries need to make use of the existing resources while the animal health sector could share resources to other sectors such as laboratory. Hence, relevant sectors in a country should work together and prepare for the next pandemic that may come tomorrow.

In addition, there is a room from the agricultural sector to play and contribute in this agenda as in the present, JEE only implemented in health and agriculture ministries. A more national policy may be needed to bring the wildlife and environmental sectors to actively join GHSA implementation.

Q: Would there be a plan to engage or strengthen the workforce beyond the health sector?

A: We worked together with animal health on training activities and expect more collaboration in the future. During the COVID-19 response, multidisciplinary and multi-sectoral collaboration are needed

Q: How can we find more information on the operational tools? And is there any support?

A: The operational tools can be found on the WHO website and members countries can contact WHO in case they need any technical support such as to conduct private workshops.

Group 4: Foster Coordination with Relevant Sectors

13) Next Generation Global Health Security Network Independent Research Panel

Host by: Detect 5: Workforce Development/ United States/ Next Generation Global Health Security Network, 16 October 2020 09:00 - 12:00 (ICT)

Presenter: Taylor Winkleman, Coordinator, Next Generation Global Health Security Network

43. The side meeting aimed to share knowledge and present research conducted by the Next Generation Global Health Security Network. The network aims to reach out the colleagues around the world in order to cooperate, share the best practices and knowledge.

44. The Next Gen Network focuses on developing programs and engaging with people. It is available for young professionals in every country. During the COVID-19 outbreak, Next Gen shared information and knowledge through social media application and webinars and provided a cross for-a-platform for sharing innovations and reflecting on ideas for coping with the outbreak.

45. Key messages/recommendations/ways forward:

- Every country needs to work together to improve health outcomes.
- AMR issues: there is a need to generate information/evidence so as to increase public awareness on AMR; and each country needs to have programs, legislation and robust strategic plans on AMR;
- Focus on the state of preparedness before the outbreak happens by working with people in different sectors; and
- Many people still lack the knowledge of the biosafety and biosecurity.

14) Incorporating One Health into Global Security: Educating the public and governments

Hosted by: United States Department of Agriculture, 27 October 2020 06:00 - 08:00 (ICT)

Presenter: Jennifer Rowland, AAAS Science and Technology Policy Fellow, USDA

46. The side meeting intended to educate participants on One Health's role in global security. Highlights include:

- Education engages students from all ages, backgrounds, nationalities and develops future interest;
- Government agencies collaborate across disciplines to build capacity;
- One Health educators, and government practitioners have strong multi-sectoral networks around the world;
- Government panelists highlighted cross-agency efforts to prioritize zoonotic diseases;
- One Health educators adopted free online teaching models for students in primary school through university;
- Establishing One Health offices or working groups is critical in government;
- Innovation in teaching including role-playing and making online materials available in off-line formats; and
- Established collaborations across government agencies.

47. Key messages/recommendations/ways forward:

- Governments need interagency incident coordination groups with specific roles for group members; establish rotations of qualified experts to fill those roles in succession

- Rotational approach avoids extended, acute gaps among the participating agencies that must both carry out day-to-day functions and simultaneously staff the interagency incident coordination group
- Experts must take advantage of cross-training opportunities to improve knowledge, networks and visibility
- Educators emphasized incorporating local communities in building lessons, not just for language translation, but for best examples and techniques
- One Health is inherently multi-sectoral, practitioners have good engagement, looking for funding support to expand efforts.

48. Challenges are as follows:

- Grass roots education efforts face issues on securing funding, lack of sustainability;
- Government agencies need high level interest to support cross-agency collaboration;
- One Health is not included in school curricula, so is primarily taught as extracurricular; and
- Authorities covering One Health are distributed, by definition, no one agency can take all the responsibility; need for interagency coordination.

15) Defense Sector Partnerships Contributing to GHSA Objectives

Hosted by: Australian Defence Forces (ADF) and U.S. Indo-Pacific Command (USINDOPACOM), 4 November 2020 08:00 - 10:00 (ICT)

Presenter: Stephanie Petzing, Senior Global Health Security Advisor, HJF, Center for Global Health Engagement

49. The side meeting intended to illustrate the unique role and contributions of the defense sector in global health security, with a specific focus on military-military and military-civilian partnerships. The event emphasized the importance of military-civilian collaboration before and during a disease crisis, with the ultimate goal of encouraging dialog and broadening defense and security participation and engagement in GHSA.

50. It was suggested that efforts increase defense sector stakeholder engagement in GHSA, facilitate dialog between sectors, and increase awareness of the contributions of the defense and security sector to GHSA objectives.

51. It was concluded that achieving a world safe and secure from infectious diseases through the Global Health Security Agenda requires a whole-of-society approach. The COVID-19 pandemic has clearly demonstrated that no sector of society is immune from the catastrophic effects of an infectious disease threat, and that we must all work together not only in response, but in preparedness to prevent future pandemics.

52. Key messages/recommendations/ways forward:

- The COVID-19 pandemic underscores the need for a whole-of society approach to global health security and the GHSA. Now more than ever, it is crucial to foster understanding, relationships, and cooperation across sectors, and to make clear the valuable and unique contributions that the defense and security sectors bring in support of their civilian counterparts in GHSA.
- Webinars and best practices to support multisectoral cooperation and partnership engagement need to be supported further

16) Raising AMR Awareness in the Context of COVID-19

Host by: The GHSA Antimicrobial resistance (AMR) Action package (AP) Chair, Uganda, with support by the United States, the United Kingdom, the Netherlands, and Tripartite (WHO, OIE, FAO) 5 November 2020, 17:00 - 19:00 (ICT),

Presenter: 1) Mugerwa Ibrahim, NHLDS-Human Health-AMR-National Coordination Centre, Uganda
 2) Peter Babigumira, Technical Advisor Emergency Preparedness/Antimicrobial Consumption and Use Surveillance Global Health Security Program, Infectious Diseases Institute – College of Health Sciences, Uganda

53. The side event on AMR highlighted the importance of continued focus on combating AMR at the national, regional and global levels, advancing AMR partnerships in global health security, AMR financing into government mainstream to foster its sustainability, the importance of AMR global governance in the context of COVID-19, and bringing focus to need for infection prevention and control and appropriate use of antimicrobials in the context of COVID-19.

54. Highlights, among others, include:

- An establishment of the AMR Multiple Partner Trust Fund (AMR MPTF) as the mechanisms to secure consistent and coordinated development financing to support the implementation of One Health National Action Plans and Tripartite workplans in Netherlands
- A number of raising awareness campaigns tailored to different sectors, including ‘Keep Antibiotics Working’ in the UK.

55. Key messages /recommendations/ways forward

- Navigating AMR during COVID-19 requires continued and dedicated resources to address important questions being raised as part of the COVID-19 pandemic;
- In many hospitals, the COVID-19 pandemic creates a perfect storm for antibiotic resistant infections given a confluence of multiple factors like prolonged lengths of stay, crowding and infection control challenges like PPE shortages; and
- Preliminary data emphasizes the importance of continued and expanded investments in infection control and antibiotic stewardship.

56. Deliberations on Q&A for ‘Group 4 presenters’ are as follows;

Q: How can we motivate the young medical professionals to keep their career path on epidemiology/the medical professional?

A: We can show them how they can engage and receive opportunities since we provide the bridge for them to contribute and engage.

Q: What are the opportunities for the NextGen to engage with D5 in GHSA?

A: NextGen is pleased to cooperate with all and be connected via email communication.

57. Dr. Limpakarnjanarat, Chair, in his closing, emphasized the importance of existing networks such as laboratory and epidemiologist networks and a need to promote cross-disciplinary and cross-fora. NextGen can serve as the bridge for a future workforce development in which their works align with the GHSA’s objectives.

The meeting was held with global solidarity of sharing a vision of a safer world. The meeting was called for closing at 16.30.

REPORT

The 6th Global Health Security Agenda Ministerial Meeting “Bridging Cooperative Action for Global Health Security” Virtual Meeting Hosted by the Royal Thai Government, 19- 20 November 2020

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Introduction

1. Preceded by the Pre-Ministerial Meeting, the 6th Global Health Security Agenda (GHSA) Ministerial Meeting was held virtually from 19- 20 November 2020 with the main objectives to share knowledge, update progress of GHSA implementation, expand collaborative network efforts and discuss the need to synergize global efforts on global health security.
2. The meeting was attended by distinguished delegates from GHSA contributing members, non-GHSA members, the private sector, key development partners and other relevant sectors. In addition, there were 10 GHSA members who shared their respective countries’ remarks and experiences through minister video presentations.

Day I: Thursday, 19 November 2020 – Strengthening Collaboration to Achieve the GHSA 2024 Framework’s Goals and Targets

3. The first day of the 6th GHSA Ministerial was chaired by Dr. Sura Wisedsak, Deputy Permanent Secretary, Ministry of Public Health, Thailand and co-chaired by Dr. Kachen Wongsathapornchai, Officer-in-Charge Regional Manager, Emergency Centre for Transboundary Animal Diseases (ECTAD), FAO Regional Office for Asia and the Pacific.
4. To commence, Dr. Charatdao Bunthi (Thailand) presented key issues transpiring from the Pre-Ministerial Meeting held on 18 November 2020. Key messages are highlighted below:
 - Addressing pandemics goes beyond the health system; needs whole-of-society approach to build back better;
 - Need to have financial investment for the future pandemic prevention;
 - Need whole-of-society and One Health approaches at all levels to bridge health and non-health sectors (including the private sector) noting that the wildlife and environment sectors are yet to be included;
 - Need to link countries with private sector partners at all levels so they can learn from each other;
 - Recommend regional approaches to complement country champions to ensure collaboration between all partners;
 - Enhance existing networking such as the NextGen Global Health Security Network and ‘network of the laboratory networks’ to bridge cooperative actions globally;
 - Need for monitoring and evaluation as well as enhancing communication between sectors and with the general public are crucial to achieve the GHSA goals;
 - Require development of productive national action plans using JEE and IHR benchmarks as the basis;
 - Need to improve coordination between countries, GHSA Action Packages and various health and non-health stakeholders, communication across sectors for early warning systems, and data integration between sectors.

I. Session: Plenary Discussion: COVID–19 Pandemic: Game Changers for GHSA 2024?

5. This session was held in plenary to stimulate the discussion on “COVID-19 Pandemic: Game Changers for GHSA 2024?” Input from the three panelists were drawn as follows:

1) Mr. Bae Kyung Taek, Director General of International Affairs Bureau, Republic of Korea

6. Mr. Taek underscored that with the goal of minimizing health and economic damage, COVID-19 response strategies comprised of early detection, risk communication and social measures, and patient treatment. In striving for the vision of GHSA 2024, he emphasized country ownership, inclusiveness, cost-effectiveness, mutual accountability, transparency, multisectorality, measurable progress and impact, sustainability, partnership and proactivity.

7. He highlighted that working in solidarity is crucial in responding to COVID-19 as well as for global security.

2) Dr. Tom Frieden, President and Chief Executive Officer, Resolve to Save Lives

8. Dr. Frieden emphasized that a comprehensive response is needed to reduce spread, stop cases, protect ongoing health care and use data to drive progress. He called for an affordable epidemic prevention of health security rather than multi-trillions dollar expenditures for pandemic. Since the public health systems worldwide have suffered from years of underfunding, creative solutions are needed to strengthen and sustain core capabilities of public health system in prevent, detect and respond. In addition, sustained funding is needed to strengthen core public health programs and essential health services.

9. Countries can fill gaps and improve readiness by stepping up in areas such as analysis of surveillance data by identifying priority pathogens, assessing data collection, analysis and interpretation gaps, training national and sub-national staff, and checking data quality and analyzing at local and international levels.

10. He summarized that not only financial, but also robust, intensive, technical and operational support are needed to build national capacity. Health threats can unite or divide the world and only global collaboration against the virus can lead to global recovery.

3) Dr. Sopon Iamsirithaworn, Director of Division of Communicable Diseases and Incident Commander of DDC’s EOC for COVID-19, Thailand

11. Dr. Iamsirithaworn shared the strategies – known as the ‘6 C Strategies’ that Thailand deployed to fight COVID-19, which include “Capture of COVID-19, Case management, Contact tracing, Communication & Education, Community participation and Coordination & information center. Prior to the availability of vaccines, he urged that effective measures to reduce COVID-19 are distancing, mask-wearing, hand washing, and public compliance. He emphasized that the 100% mask wearing and mandatory quarantine were game changers for COVID-19 in Thailand. Key success factors to be noted include:

- An existing robust public health system and deployment of a million health volunteers nationwide;
- Utilizing experiences and lessons learned from the previous infectious disease outbreaks; and
- Early case detection & early activation of the EOC.

12. After the presentations of the three speakers, there were interventions from GHSA members including:

- **Dr. Rebecca Martin**, Director, Center for Global Health, US CDC emphasized that GHSA is critical to facilitate multi-sectoral coordination which brings sectors together around a common goal of health security. GHSA framework guides countries and offers tools for prioritization and strategic planning for preparedness. The Democratic Republic of the Congo (DRC) brought Ebola outbreak to an end in the midst of the COVID-19 pandemic which represents a success in health security both in DRC and the world.
- **Dr. Adjaratou Ndiaye, the Permanent Secretary of High Council of GHS and National Focal Point of Senegal** highlighted that the COVID-19 pandemic provides an opportunity to review roles of other sectors for better crisis management utilizing multisectoral approach. Priorities include the educational sector, economic resiliency, social sector, trade and transportation, and digitalization. USAID and other organizations should continue to help strengthen country capacities based on their needs. Global funding mechanisms should be created to provide support for global health: detection, response, and prevention efforts in the midst of a public health crisis, meanwhile domestic resources mobilization by countries are vital.

II. Session: Plenary Discussion: Highlight GHSA Progress Toward the Overarching Target for GHSA 2024

13. Dr. Roland Driee, the Director for International Affairs, Ministry of Health, Welfare, and Sport, the Netherlands in his capacity of GHSA Chair during 2019-2020 presented GHSA progress toward the overarching target for GHSA 2024.

14. Since 2014, 113 countries have completed a Joint External Evaluation (JEE) of which 68 countries have completed a National Action Plan for Health Security. Furthermore, he cited that country progress has been tracked across health security technical areas and indicators through the WHO Special Parties Annual Reports over time and compared with baseline country JEEs. These will contribute to advancing the GHSA 2024 target.

15. Among others, Dr. Driee recommended the following:
- (1) Need strong efforts to implement IHR and international cooperation;
 - (2) Highlight sharing best practices, communication, transparency and equity that are important in providing all GHSA member countries with tools to tackle both the current and the next pandemic;
 - (3) Improve the existing health indicators or review/adjust the existing IHR indicators;
 - (4) Consider flexible approaches (including adjusting the mind set: communication issue, share lessons learned and best practices and learn from failures);
 - (5) Be brave to set the goals publicly and turn the commitment to the real progress. Focus development and implementation of appropriate tools such as “commitment tracker” continuously (ask nations to join in);
 - (6) Using the GHSA Member Commitments Tracker, commitments to deliver bold, measurable and impactful actions towards the GHSA 2024 target;
 - (7) Country commitments and implementation status can be sorted by country or by thematic area; and
 - (8) Identifying and addressing gaps: conducting the JEE, prioritizing 5 technical areas, developing a NAPHS, changing national legislation or policy.

III. Session: Action Packages and Key Stakeholders: Working Across Disciplines

16. This session aimed to summarize the role of GHSA, highlight the GHSA 2024 Framework, emphasize the importance of the multi-sectoral collaboration and working across disciplines, and identify the key challenges. It was presented by Dr. Soawapak Hinjoy, Director of the Office of International Cooperation, Ministry of Public Health, Thailand. She highlighted that the GHSA has played crucial roles to:

- enhance country capacities to prevent, detect and respond to infectious diseases and global health threats;
- Facilitate dialogue and coordination on global health security issues such as vaccine financing, disease surveillance, laboratory systems, biosafety and biosecurity, and workforce development; and
- Serve as a multi-sectoral platform to improve relationship among countries, health and non-health sectors and the private sectors for better engagement and communication during the pandemic.

17. She further stressed that under the GHSA 2024 Framework, among the eight Action Packages, notably there are interlinkages between them such as Biosafety and Biosecurity and Laboratory Systems Action Packages and all Action Packages link to the Sustainable Financing Action Package. In order to bridge cooperative action among GHSA members, there is a need to strengthen coordination among GHSA Action Packages, multidisciplinary (health and non-health sectors), GHSA members to linking various regions and harmonizing global, regional and national levels, as well as working with international organizations.

18. Dr. Hinjoy urged for sustainable financial investment in GHSA, learning from other best practices and experiences around the world; and networking to connect all sectors and engage non GHSA member. She referred to a quote from a previous session of one presenter that: *“Now is the time for action to institutionalize a One Health functional framework”*.

The Chair thanked all of the presenters by highlighting a need for strong vision, connecting with difference perspective and partners, knowing the gaps and challenges, joining efforts to enhance IHR capacity.

Opening Session

19. Dr. Kiattibhoom Vongrachit, Permanent Secretary of Ministry of Public Health, Thailand delivered a warm welcome to all delegates and participants. He emphasized that the COVID-19 pandemic might be affected in many aspects, however, it cannot stop all GHSA members from continuing commitments to scale up capacities for ensuring global health security. The GHSA Ministerial Meeting is a platform providing great opportunity to reaffirm the commitments and discuss the need to synergize global efforts on global health security. He wished that the outcome of the meeting will set the direction for implementation of the GHSA 2024 Framework and translate into actions to better prepare for and respond to the potential public health threats.

Opening Remarks by H.E. Anutin Charnvirakul, Deputy Prime Minister and Health Minister of Thailand

20. The 6th GHSA Ministerial Meeting was presided over by His Excellency Mr. Anutin Charnvirakul, in his remarks; he emphasized that fighting any global health threat is not an easy task as it needs tremendous efforts and massive amounts of resources to be mobilized from the whole society.

21. Citing valuable lessons and experience gained from the COVID-19 outbreak, among others, he underscored that financial preparedness is crucial to support capacity building to prevent, detect and response disease outbreak. The 6th GHSA Ministerial Meeting provided a great opportunity to sensitize momentum for enhancing multi-sectoral cooperation and the whole society approach. Our continuing cooperation and coordination are crucial step to bring health security to the attention of the global community and galvanize the global commitment.

IV. Session: Ministerial Round Table Discussion “Balancing Health and the Economy during the COVID-19 pandemic: An Avoidable Conundrum”

22. This session aimed to discuss and share the experiences on how countries can best take both health of their people and economic stability into consideration during the pandemic and post-pandemic as well as how to prepare for the future. It was chaired by Dr. Tanarak Pliapat, Deputy Director General, Department of Disease Control, Ministry of Public Health, Thailand and co-chaired by Dr. Khanchit Limpakarnjanarat, Advisor, Department of Disease Control, Ministry of Public Health, Thailand.

23. The five prominent speakers representing countries and organizations were invited to deliberate on the following key questions:

- How can countries best take both health of their people and economic stability into consideration during a pandemic and post pandemic?
- How do we better prepare for this in the future?

1) Excellency Mr. Anutin Charnvirakul, Deputy Prime Minister and Minister of Public Health, Thailand

24. In his presentation, he emphasized that the health of people and the economy have been dramatically impacted by COVID-19. During the outbreak peaks, ‘harsh measures’ and personal protective measures seem to be successful in halting disease propagation; however, COVID-19 has locked down economies and created wide-ranging socio-economic disruptions across the globe. In his view, the following recommendations should be implemented:

- Need involvement of sectors and require collective collaboration from different nations with good strategies that harmonize both health and economic purposes;
- Call for well-targeted policies tailored towards supporting health care systems and employees, policy measures to cushion the economic consequence resulting from COVID-19 and multilateral policy dialogue to curtail and foster agreements on acceptable containment;
- Adapted the ‘new normal’ policy for business to ensure that health gains and economic recovery can advance in tandem and demonstrate how the public and private sectors can work hand-in-hand; and
- The utilization of digital technology plays a crucial role in health system strengthening without disrupting the nation’s economy.

25. He concluded his remarks by underscoring global solidarity as the pathway to controlling COVID-19 and restoring economies. Countries must maintain the delicate balance between health and the economy.

2) Dr. Tedros Adhanom Ghebreyesus, Director General of the World Health Organization

26. He expressed appreciation to Thailand for hosting this meeting with the focus on multisectoral engagement and international cooperation on responding to severe public health threats. In his remarks, key messages and recommendations are as follows:

- COVID-19 underlined the importance of preparedness to respond and only working together can build the sustainable health security;
- The solidarity of countries and their commitment for GHSA 2024 target are very crucial;
- Past experience has shown when the acute phase is over, attention and financial support decrease;
- Need to break the panic-then-neglect cycle is crucial;
- Effort to develop the vaccine and the diagnosis including ensuring the equitable and fair access to the vaccine for all countries; and
- Do not have to choose between lives and livelihood, but need a new narrative.

27. Dr. Ghebreyesus informed the meeting that WHO has set up a new council – ‘Health for All’ by emphasizing both health and economy. He concluded his presentation by reaffirming WHO’s commitment to work closely with the GHSA members to strengthen countries’ capabilities for coping with any public health crisis for the global health security - together we can build a safer world.

3) Dr. Muhammad Ali Pate, The Global Director for Health, Nutrition and Population at the World Bank Group and Director of the Global Financing Facility for Women, Children and Adolescents (GFF)

28. He reiterated that COVID-19 caused disruption of health systems in many countries including disruption of health services, preventing women to access to safe facility for family planning services and immunization service for children. It also has caused global economic disruption: changing of demand of supply, decline in foreign demands, drop in quality prices, lower financial market, increase financial stress, involved in major short in supplies, high food price in many countries, reduce of labor supplies, global contraction, and worsening in poverty.

29. Dr. Ali Pate recommended the following policy priorities:
- Disease containment – testing, tracing, isolating, treating, and vaccine availability
 - Economic crisis – secure job, protect income and ensure access to service for all of the population; and
 - Response to the pandemic – to protect life, gain trust, maintain stability of health and economy with the complexed interaction among epidemiology practices, demographics, physical space, and understand of health services and delivery system.

30. To better prepare in the future, Dr. Ali Pate highlighted the following:
- Need to prepare and protect people from COVID-19 and future pandemics by the government;
 - Expand social safety nets and social insurance;
 - Ensure adequate financial support for crisis response and investment in health preparedness; and
 - Establish and execute emergency preparedness plans in countries.

31. He reaffirmed that the World Bank will continue to work with partners such as GHSA members and all technical agencies including providing millions of dollars to support the response of the countries to fight with COVID-19, provide COVID-19 testing and treatment and expand immunization capacities.

4) Excellency Ville Skinnari, Minister for Development Cooperation and Foreign Trade, Finland

32. His Excellency Skinnari expressed his views that health and economic issues are inclusive and there is a need to manage risk factors and avoid unnecessary control. The dialogue to discuss and consult with relevant sectors is key. Citing an example from Finland, to emphasize service delivery and providing education to people, 'the COVID-19 application was launched in September and downloaded by a lot of people within two weeks. Key messages and recommendations are as follows:

- Underscore a significant roles of GHSA in facilitating working together and promoting multi-cooperation;
- Need to build up capacity as a normal practice before the occurrence of a crisis;
- Need to invest more on preparedness;
- Need to take into account of equitable access of vaccines; and
- Underline the importance of building back better for economic, societal and environmental sustainable development.

5) Excellency Dr. Paivi Sillanaukee, Ambassador for Health and Wellbeing of Finland

33. In compliment to the speech made by H.E. Skinnari, the presenter highlighted the following:

- Ensuring sustainable financing for health security and capacity-building including the sustainable partners for preparedness are one of the key elements in preparedness resolution;
- Resilience of health systems is critical for capacity;
- Cooperation beyond health sectors including finance, trade, research and innovation, security and defense is needed;
- Preparedness capacity following JEE framework is critical in preventing and preparing for outbreaks;
- Digital health and innovations are essential for health security;
- Need well-designed policies on general quality, health, social protection, unemployment, economy; and
- Health and economy help us progress on achieving the Sustainable Development Goals.

34. After presentations of the five speakers, there were deliberations made by GHSA Members as follows:

- **United States:** expressed views that COVID-19 affected many aspects of life, called for working together globally to better prepare, reaffirmed its support by investing for the GHSA capacity building for the GHSA overarching target, and emphasized a need for economic policy support to calibrate the situation.
- **Japan:** shared concerns over the crisis due to COVID-19 which posing challenges for many countries to balance economic system with the implementation to control COVID-19, recommended for developing and ensuring the equitable access to the vaccine and diagnosis as well as joining with COVAX and GAVI, strengthening the health system and implementing UHC to support the COVID-19 response, and committed to contribute to the world and through GHSA.
- **Australia:** reiterated its support on global health security including funding for the COVID-19 response to support the continuation of the health service and health system strengthening, supporting access of COVID-19 vaccines as a new initiative for the Southeast Asia including Timor Leste, working closely with WHO, applying the lessons learned to improve the health

system, and look forward to working with the global community and GHSA member for the global health security.

- **Indonesia:** reiterated efforts to stop the virus and minimize the social and economic impacts including focusing on controlling the virus and allocation budget for the outbreak response, implementing social safeness to support the small and medium enterprise to maintain the workforce during the pandemic. Called for balancing environment between the health and economic as ensuring sustainable financing.
- **Singapore:** emphasized a need to continue implementing the public health response and mitigate the economic impact; highlighting the importance of strong testing, isolation and quarantine and working with many countries for ensuring the availability of supply chain during the pandemic; and urging all country to priority on disease response and develop the healthcare system to protect the people and invest on health system to prepare for the next pandemic.
- **United Kingdom:** underscored the importance of how we can prevent future pandemics, sharing of the findings and health data, and GHSA's focus on engagement with finance ministries.
- **Kenya:** stressed that COVID-19 has led to the economic shock affecting a lot of countries; called for an increasing capacity of national healthcare system and social support for mitigating the negative impact of the COVID-19; highlighting the importance of financial support for the health emergency along with good national action plan and investment on health system; and urging for an implementation of One Health approach.
- **Italy:** highlighted a need to prioritize actions utilizing the whole-of-government approach; committed to work with all concerned ministries, and proposed the feasibility to include COVID-19 in the agenda of the G20 meeting including engaging the finance and health sector.

35. It was followed by Q & A Session.

Q: To WHO: What would be the role of WHO to foster for sustainable support for the capacity building for all levels?

A: The public health emergency preparedness and response is the long-term investment, WHO continues to invest in IHR core capacities, which are key elements for national preparedness. No single country is well-prepared and the whole society approach, and resilient systems are key for preparedness as well. WHO continued its support to countries for resource mapping and alignment with the donor and partners for preparedness and response. Collaboration with the security sector and finance security as well as exploring for the new funding mechanism is needed.

Q: To Finland: How can digital health reduce the negative impact on the economy?

A: The advance of mobile technology helps a lot on controlling the outbreak. With the respect to the personal data security, it helps to develop the health control services quickly.

Q: How to ensure the timely distribution of license vaccine to countries around the world?

A: We work with the COVAX about the vaccine availability, especially in the vulnerable areas.

Q: How could we engage the security sector and finance sector to mitigate the negative impact of the COVID-19?

A: Thailand worked with the army and military hospitals. They also supported lab testing and quarantine facilities. For the financial sector, there is good support from them when planning to reopen the border after the lockdown; experts from the finance sector provided sound recommendations on this issue.

36. The Chair expressed sincere gratitude for valuable inputs/views graciously presented by all Excellencies from Thailand & Finland as well as representatives from leading technical organizations: WHO and World Bank. How to balance between the two issues: health and economy during the COVID-19 pandemic is of the utmost importance. He emphasized the importance of UHC and investing in the health structure, global vaccine development, innovation and technology for testing are crucial for helping the countries in the future. He reiterated that no country can achieve this without collaboration.

Day 2: Friday, 20 November 2020

Recap of Day 1 meeting by Ms. Jintana Sriwongsa, Thailand

37. She summarized the key messages and recommendations transpiring from Day 1 of the 6th GHSA Ministerial Meeting on 19 November 2020. Among others, multisectoral coordination and the One Health approach are crucial to fight against COVID-19 and future pandemics. In addition, there is a need to continue investment in health systems and improve the monitoring and implementation of the GHSA targets.

Session I: Keynote Speaker(s) "Turning Crisis to Opportunities for Bridging Cooperation: Multi-sectoral Collaboration"

38. This session aimed to stimulate the discussion on how can we apply lessons learned from the COVID-19 pandemic to bridge cooperation and promote multisectoral collaboration to be better prepared for the next global health threat as well as to obtain high-level recommendations for concrete actions to ensure multisectoral collaboration and use this opportunity to strengthen mechanisms for preparedness and response.

39. It was chaired by Dr. Somchai Peerapakorn, Advisor, Department of Disease Control, Ministry of Public Health, Thailand and co-chaired by Dr. Supamit Chunsuttiwat, Advisor, Department of Disease Control, Ministry of Public Health, Thailand

1) Mr. Fabrizio Hochschild, Under-Secretary-General, Special Adviser to the Secretary-General, United Nations, by Video clip presentation

40. The presenter emphasized that global cooperation is needed to fight against COVID-19 immediately and for longer term recovery. To improve the knowledge of people globally, access to quality education is important. In the near future, COVID-19 vaccinations should be immediately available globally once ready.

41. Moreover, Mr. Hochschild elaborated that the United Nations will be more effective, more transparent, and more active in the response of the global crisis. He summarized that the COVID-19 crisis led to reconstructive cooperation and that global networks and a multi-stakeholder approach are key for solving novel problems in the future.

2) Dr. Keith Sumption, Chief Veterinary Officer, Animal Production and Health (NSA), Food and Agriculture Organization of the United Nations (FAO)

42. The session commenced with remarks by Dr. Qu Dongyu, Director General of FAO, emphasizing “All for One Health, and One Health for All; since united we stand, but divided we fall.”

It was followed by the presentation of Dr. Sumption who pointed out that lessons learned from this and past pandemics indicated that environmental, animal and public health are intrinsically connected. The impacts of pandemics span far beyond physical health, also affecting livelihoods, economies, and food security, which can be prevented and mitigated by building resilient health systems through long-term transformative action. The multi-sectoral One Health approach is crucial in addressing zoonoses and other health threats at the human-animal-environment interface as well as preventing the next zoonotic pandemic. In doing so, he also stressed that institutional and technical national capacities must be initially developed evenly across sectors.

In advancing One Health capacities, ‘A Tripartite Guide to Addressing Zoonotic Diseases in Countries’, also called Tripartite Zoonoses Guide (TZG), was published in March 2019 to support work on zoonotic diseases, and other threats at the human-animal-ecosystems interface that require a One Health approach.

3) Dr. Ir. Nasrullah, Minister of Agriculture, Indonesia

43. The presenter highlighted the importance of intensive multi-sectoral efforts and collaboration between all related agencies/stakeholders at the global, regional, national and local levels to handle the complex crisis and the unprecedented global public health challenge.

44. Dr. Ir. Nasrullah presented the key COVID-19 responses in Indonesia including the development of the National Response and Mitigation Plan for COVID-19, which identified an implementing lead agency: The National Agency Disaster Management (BNPB). In addition, the presidential instruction, was signed by the president of Indonesia in order to enhance capacity in preventing, detecting and responding to outbreaks, global pandemics and nuclear, biological and chemical emergencies prior to the COVID-19 pandemic. This instruction involved 24 stakeholders. The launch of the National Action Plan for Health security (NAPHS) 2020-2024 was developed in response to Joint External Evaluation (JEE) results and all relevant ministries, agencies and institutes were engaged.

45. He shared some of best practices demonstrating multi sectoral efforts include an initiative ‘SIZE 2.0’ under One Health information sharing platform, surge capacity for COVID-19 testing which include health, veterinary and research laboratories. There is a need to invest in the preparedness, prevention and early detection.

4) Dr. Monique Eloit, Director General, World Organization for Animal Health (OIE)

46. Dr. Eloit pointed out that new pathways should be created for a well-coordinated use of resources and expertise from many sectors. Efforts should be ramped up to ensure that countries have a robust and comprehensive health security capacity as well as explore which national resources can be better utilized.

47. Veterinary services can be integrated in national, regional and international public health prevention, response and crisis management frameworks. She further highlighted that the FAO-OIE-WHO Tripartite remains a strong coalition in fighting a number of other serious global health risks,

including that of antimicrobial resistance to implement standards and activities to reduce antimicrobial use in all sectors of society. Along with UNEP, the Tripartite developed Terms of Reference for the new *Global Leaders Group on Antimicrobial Resistance*. It was noted that an initiative launched by the Alliance for Multilateralism earlier in November 2020 aimed to establish a One Health High-Level Expert Council.

48. She concluded that “turning a crisis into an opportunity” is indeed a noble concept, but embracing opportunities and acting *before a crisis happens* can offer the most profound impact on the future of global health. Building a robust surge capacity facilitates rapid deployment of professional support, and makes good financial sense.

5) Mr. Abdou Latif Coulibaly, Minister Secretary General of the Government, President of the Steering Committee of the High Council for Global Health Security, Senegal

49. The presenter shared health has become a national priority in Senegal and community engagement is an important strategy for strengthening preparedness – as required for global health security. Innovation to digitize the health care system has connected even the smallest rural clinic to larger hospitals for sharing experiences, providing guidance and recommendations which has created immediate improvements in health care at the most rural locations. The health care system is organized as a pyramid network with each level interconnected to the next through digital communications and data sharing. In addition, he pointed out that Public-Private-Partnerships have been one of the key mechanisms to rapidly develop diagnostic tests.

50. After the presentations of all speakers, there were deliberations made by the GHSA Members including.

- **Ambassador Michael DeSombre, (United States Ambassador to the Kingdom of Thailand):** Multisectoral approach guides health security work which depends on human, animal and environmental health. GHSA is a model for multisectoral collaboration.
- **Dr. Julie Fischer (GHSAC):** GHSA is providing tested practices and measures that can be shared, collaboration among governments, NGOs, civil society and communities is essential to sustain GHS improvements, and Public-Private Partnerships can help countries to build back better.
- **Dr. Ndiaye (Senegal):** Community engagement can change the behavior of people during a public health crisis, reduce stigma, and build trust. Senegal has taken a Whole-of-Government approach to respond to COVID-19.
- **Dato’ Dr. Chong Chee Kheong (Malaysia):** Whole-of-Society is key to communities’ resilience in the face of this global pandemic, investing in preparedness builds resilient society, and GHSA provides a critical platform to keep countries accountable to progress towards GHSA goals.
- **Dr Anupong Sujariyakul (Thailand):** COVID-19 has highlighted the need for multi sectoral approach.
- Additional interventions included the following:
 - Must not lose momentum to tackle AMR
 - Ministries of Finance should make targeted investments in One Health approach to GHSA
 - Inter-ministerial One Health agencies, One Health ministries are good examples to institutionalize One Health at the country level

51. The Chair thanked all of the speakers for their valuable input and the meeting participants for their active participation.

II. Plenary Discussion: How can GHSA Help and Adapt to Better Prepare Countries for the Next Health Threat Crisis?

52. It was chaired by Dr. Roland Drieste, Director for International Affairs, Ministry of Health, Welfare, and Sport, the Netherlands

53. To commence the Session, H.E. Tamara van Ark, Minister for Medical Care and Sport, the Netherlands was invited to give her remarks. She underscored that working together is the name of the game. One health is connected. How can GHSA help to better prepare for the next health crisis? She trusted that working together will equip us for the better prepare for the next pandemic.

54. Five esteemed speakers were invited to present their views on how to bridge the globe for the global health security and help each other to improve the resilience as elaborated below.

1) Excellency, Gro Harlem Brundtland, Co-Chair of the Global Preparedness Monitoring Board, former Director-General of the World Health Organization, former Prime Minister of Norway

55. Dr. Brundtland expressed views that the impact of COVID-19 is worse than we anticipate and no one is safe from the COVID-19. It affects the fundamental of the global health security which only multisectorality can help end this pandemic.

In her presentation, the following key messages were highlighted:

- Applying the whole-of-government and society approaches for preparedness;
- Requiring strong political leadership and national commitment for better preparedness to protect the people and the economic systems;
- Ensuring fair and equitable access of vaccines for all with scientific based support;
- Working together is the basic principle of all level of society;
- Reforming the health security instrument for effective functionality;
- Revision of IHR to provide a better platform for multisectoral collaboration;
- Need a comprehensive mechanism to assess implementation;

56. She concluded that global health security is the responsibility of all countries and sustainable financing to implement it is important. Dr. Brundtland called for the GHSA to work with international financing to develop a mechanism.

2) Dr. Dennis Carroll, President, Global Virome Project

57. Dr. Carroll underscored that to prevent future pandemics, we must learn from this pandemic and act on the gaps revealed. Key messages and recommendations are as follows:

- A threat anywhere is a threat everywhere so act globally to bring threat under control is needed;
- Health capacities as well as political capacities/leadership are critical;
- Prevention of the next global threat, preparedness by knowing viruses is the key and called for formulation of 'Viral surveillance network' to detect pathogens before they establish themselves in a community;
- Viral surveillance must be tailored to the local level and be built with country ownership;
- Need a data platform that is transparent, equitable, and actionable by all countries, e.g. all viruses in the coronavirus family in one database that is accessible to all countries to use and

act on the data. This database could inform vaccine development and production against multiple coronaviruses.

- Create a viral “watch list” to track and follow key viruses in hot spot locations where viruses naturally circulate to understand the viral evolution and predict spillover.

58. He recommended for creation of global viral surveillance network to enable the world to be better prepared and forge a global alliance.

3) Dr. Paul Stoffels, Vice Chairman of the Executive Committee & Chief Scientific Officer, Johnson & Johnson

59. Dr. Stoffels indicated that the Global Health Security Agenda is bridging the collaboration with the private sector as the Private Sector Round Table became one of the members of the GHSA Steering Group. Johnson & Johnson in collaboration with public and pandemic sectors are working to develop new vaccine to prevent COVID-19. If the vaccine is tested for safety and effectiveness to meet the goal of providing one billion doses of vaccines next year, the first batch would be available for emergency use in early 2021. Johnson & Johnson is strongly committed to the equitability access to vaccine which emphasized the following points:

Updates of vaccine development include:

- **COVID-19 Vaccine Makers Pledge:** Commitment signed by nine biopharma companies to develop and test potential vaccines for COVID-19 in accordance with high ethical standards and sound scientific principles
- **Official Statement on Expanded Global Access for COVID-19:** Joined 15 other leading life sciences companies and the Bill & Melinda Gates Foundation in commitment to enhance access for everyone around the world to COVID-19 vaccines, therapeutics and diagnostics, Johnson & Johnson plans to allocate up to 500 million vaccine doses to low income countries following approval or authorization by regulators
- **Finding New Paths in a Crisis:** Starting with the science, forging new collaborations, making COVAX a success, regulatory harmonization, and closing thoughts

The presenter highlighted that the multisectoral approach is the key in accelerating the sciences. As a private company, Johnson & Johnson is committed to continue collaborating with governments and scientists around the world, to address pandemic preparedness, emerging/neglected diseases, antimicrobial resistance, and medical countermeasures, to make the world safer from health threats.”

4) Dr. Rebecca Martin, Director, Center for Global Health, US CDC

65. In her presentation, she underscored that we still have much more work to do although we have seen progress in the COVID-19 pandemic. A national, regional global health system must work together for helping on right package in strengthening preparedness and response. She recommended to strengthen the following areas:

- Identify and address gap for building resilient health systems, especially sectors to respond to crises and maintain care function during crisis including Public Health Workforce such as Field Epidemiology Training Program (FETP) and the national public health agency;
- Work to forge across social approach, sharing the multisector approach with multi-stakeholder engagement;
- Share best practices and learn together;
- Ensure the objectives of results of the action packages;
- Advance global health security and taskforce work; and

- Monitor progress of the GHSA 2024 goal and target in real time

As ways forward, she concluded that building partnership and multisectoral collaboration are keys to strengthen global health security capacity.

5) Dr. Abdullah Al-Gwizani, Executive Director-General of Saudi Arabia's National Center for Disease Prevention and Control

66. Dr. Al-Gwizani highlighted that COVID-19 is an example to show that the epidemic does not respect the borders of which no country can offer protection in the long-term alone. Advancing global strategic partnerships through a true collaborative effort and leadership support is critical. Multi-sectoral collaboration in research and development need to be enhanced.

67. He pointed out that experience, knowledge, skills, and ability to control the spread of COVID-19 consist of leadership, multisectoral approach, and building upon strong foundations. The supporting policy development and strengthening of legal, regulatory, and logistical capacities through bilateral, regional, and international collaborations are also essential. Moreover, coordinating effective implementation of this regulation at the national, regional, and global levels with an efficient cooperation between different sectors are also one of the most important roles for GHSA.

68. After the presentations of all speakers, there were deliberations made by the GHSA Members including:

- Mr. Yonetani Koji, Deputy Assistant Minister, International Cooperation Bureau, Ministry of Foreign Affairs of Japan urged for enhanced efforts to ensure Universal Health Coverage and cited examples from Japan such as enhancing response capacity, enhancing health system and building communities' resilience.
- Mr. Eric Hargan, Deputy Secretary of the Health and Human Services, USA pointed out that GHSA serves as technical resource to improve their preparedness and should focus to working across health, financial, and other sectors. The USA also provided support for many countries around the globe.
- Dr. Montakan Vongpakorn from the Ministry of Agriculture and Cooperatives, Thailand emphasized the importance of multi-sectoral coordination and collaboration under the One Health approach as well as vital roles of agricultural sector in preventing zoonotic diseases, ensuring food security and safety, safeguarding people livelihoods and economics. She reaffirmed its commitments to join forces in the occasion that Thailand serves as the GHSA Chair in 2021 and to achieve the GHSA 2024 Framework.
- Mr. Peter Sands, of the Global Fund, emphasized that about one third of Global Fund investments support global health security through its adapted programs supporting the COVID-19 response. Drawing on lessons learned and leveraging capacities already build through the fight to combat malaria, HIV and TB will greatly contribute to fighting COVID-19.

III. Session: Plenary Discussion: Wrap-up and Working Towards the GHSA 2024 Framework's Goals and Targets

69. This session intended to share a list of GHSA Commitments and Priorities of GHSA Action presented by Dr. Mark van Passel, Senior Policy Advisor, Directorate, International Affairs, Ministry of Health, Welfare, and Sport, the Netherlands as the current GHSA Chair.

70. Dr. Van Passel made a presentation capturing the GHSA Commitments made by each of GHSA members to advance the GHSA 2024 Framework in the following five categories:

- 1) Identifying and Addressing Gaps (conducting a JEE, prioritizing 5 technical areas, developing a costed NAPHS, changing national legislation or policy);
- 2) Building Political Will and Coordination (establishing a multisectoral committee, ministry-level office or cabinet-level coordinator for global health security);
- 3) Investing in Health Security (mobilizing domestic resources and development assistance for national, regional and global health security);
- 4) Documenting Progress and Best Practices (sharing best practices and publishing reports of domestic and global progress towards the GHSA 2024 targets); and
- 5) Advancing Steering Group Priorities (contributing to the Secretariat, Task Forces, Action Packages, and other leadership roles to advance GHSA 2024)

71. He highlighted the key commitments pledged by the following GHSA members including Argentina, Indonesia, the Netherlands, the Private Sector Roundtable, Thailand, the United States, Italy, the Kingdom of Saudi Arabia, Pakistan, Australia, Canada, Finland, World Bank, GHSA Consortium, Pakistan, and the Republic of Korea.

72. Dr. Van Passel expressed his appreciation for Thailand in making concrete commitments to all of the above and encouraged all GHSA members to consult their country or organization to identify new, specific commitments that can be added to the GHSA Commitment Tracker.

73. By 2024, more than 100 countries that have completed an evaluation of health security capacity will have undergone planning and resource mobilization to address gaps, and will be in the process of implementing activities to achieve impact. These countries will strengthen their capacities and demonstrate improvements in at least five technical areas to a level of 'Demonstrated Capacity' or comparable level, as measured by relevant health security assessments, such as those conducted within the WHO IHR Monitoring and Evaluation Framework.

Wrap up session by Ms. Jintana Sriwongsa, Thailand

74. She highlighted the key messages transpiring from the two days – meeting as follows:
- 'Mass Compliance' on basic public health preventive measures to minimize COVID-19 transmission in the community before the delivery of an innovative vaccine is vital;
 - Investment for capacity-building, prevention, detect & responses are needed;
 - Health security is a global issue; thus, we need to work together. A multi-government approach is needed. We need to reach out beyond the health sector: engage the financial sector, learn from existing best practices and improve networking and collaborations;
 - A strong vision is needed to prepare for future pandemics. Achieving GHSA targets is a marathon, not a sprint;
 - There is a need to improve coordination between GHSA members, action packages and various health and non-health stakeholders by using a multi-sectoral One Health approach;
 - Well-targeted policies tailored towards supporting health care systems but also to improve the socio-economic situation and aid the recovery of the economy is needed;
 - Vaccine and fast diagnosis are overarching tools to protect people from public health threats;
 - It is a falsehood to have to choose between health and the economy, they are integrated and interdependent;
 - GHSA plays a significant role to work across sectors to prevent detect and respond to health threats and needs to continue during peace time and not only during pandemics.

IV: Session: Presentation of the Chair’s Declaration on “Bridging Cooperative Action for Global Health Security”

75. Dr. Kiattibhoom Vongrachit, Permanent Secretary, Ministry of Public Health, Thailand read out the Chair’s Declaration on the 6th GHSA Ministerial Meeting to set the direction of advancing the GHSA 2024 Framework by GHSA Members under Thailand’s chairmanship in the year 2021.

76. The declaration highlights the important role of the GHSA in addressing the global health security by, among others;

- Expressing concerns of the devastating impact caused by global security health threats such as the COVID-19 pandemic;
- Underscoring the need for international cooperation to ensure global access to safe and effective medicine, vaccines and medical equipment;
- Underscoring the urgent need to strengthen the technical capacity of GHSA member countries to prevent, detect, and respond to infectious disease threats through GHSA mechanisms;
- Emphasized the need for global solidarity to nurture multi- sectoral cooperation and collaboration with relevant sectors.

77. At the last session of the Ministerial Meeting, there was a “Handover of Chairmanship Ceremony” which transferred the Chairmanship of the GHSA Steering Members from the Netherlands to Thailand.

78. All participating GHSA members expressed sincere appreciation to the Royal Government of Thailand in its entire efforts organizing timely high level GHSA Meeting.

79. The 6th GHSA Ministerial Meeting was held in global solidarity of creating a safer world from global health security threats.

Note 1 : The list of participants can be found in the ANNEX

Note 2 : All PPTs and VDO presentation can be found in the GHSA website at www.ghsagenda.org and this is the list of speakers who allowed to share and disseminate their presentation:

1. Tom Frieden
2. Tedros Adhanom Ghebreyesus
3. Ville Skinnari
4. Päivi Sillanaukee
5. Fabrizio Hochschild
6. Keith Sumption
7. Ir Nasrullah
8. Monique Eloit
9. Abdou Latif Coulibaly
10. Gro Harlem Brundtland
11. Dennis Carroll
12. Paul Stoffels
13. Rebecca Martin
14. Abdullah Algwizani

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Reported by Thailand GHSA Coordinating Unit

The list of delegates and participants of the 6th GHSA Ministerial Meeting

Delegates and Participants	1,524
- Delegates	402
- Participants	1,122
Afghanistan	1
Afghan Japan Communicable Hospital	1
Anguilla	1
Health Authority of Anguilla	1
Argentina	13
ANLIS.DR.C.G.Malbran	1
ConaCRA	1
IRAM	1
National Ministry of Health of Argentina	8
University of California, Davis	1
UOCCB ANLIS Malbran	1
Australia	43
Australian Government	3
ADF	3
ADFMIDI	1
Australia Joint Health Command	1
Australian Defence Force	1
Australian Department of Agriculture, Water and the Environment	1
Australian National University	1
Australia's Indo-Pacific Centre for Health Security	1
Bupa	1
Centre for Health Security, Australian Department of Foreign Affairs and Trade	1
Chevron	1
CSIRO	2
Defence	2
Department of Foreign Affairs and Trade	6
Dept Of Defence	1
Dept of Foreign Affairs	1
DFAT	4
DFAT Indo Pacific Centre for Health Security	1
FAO	2
Global Citizen	1
Internews	1
Joinh Health Command	1
LSHTM	1
MMV	1
N/A	1
Policy Cures Research	1
University of Queensland	1
University of Sydney	1
Austria	1
International Institute for Peace	1

Bahamas	1
IVLP	1
Bangladesh	20
Bangladesh Army	1
Bangladesh Navy	2
CMB BAF	1
DGMS	1
Directorate General of Medical Service	2
Embassy of the People's Republic of Bangladesh	1
IEDCR	2
Institute of Epidemiology Disease Control & Research (IEDCR)	4
Management Sciences for Health	1
Ministry of Fisheries and Livestock	1
MSH	1
One health center for research and action	1
USAID	1
WHO	1
Barbados	3
Best-dos Santos Public Health	1
Queen Elizabeth Hospital	1
University of the West Indies - Centre for Biosecu	1
Belgium	3
DSW	1
Johnson&Johnson	2
Belize	2
Central Medical Laboratory	1
MINISTRY OF HEALTH	1
Benin	2
N/A	1
USAID West Africa	1
Bhutan	1
MINISTRY OF HEALTH	1
Brazil	1
Saúde	1
Brunei Darussalam	3
Department of Scientific Services, Ministry of Health, Brunei Darussalam	1
Dept. Laboratory Services, Ministry of Health	1
MINISTRY OF HEALTH	1
Burkina Faso	12
Centre National de Recherche et de Formation sur le Paludisme (CNRFP)	1
Davycas	1
Jhpiego	1
Ministère de l'environnement	1
Ministry in charge of agriculture	1
Ministry in charge of animals health	1
Ministry in charge of environnement	1
Ministry of Health	4
USAID	1

Cambodia	11
CDC/MoH	1
FAO	1
GDAH	1
Government, Cambodia	1
Institut Pasteur du Cambodge	1
MINISTRY OF HEALTH	5
USCDC	1
Cameroon	3
Cameroon Ministry of Health	1
CDC	1
University of Yaounde I	1
Canada	28
Abt Associates	1
Canadian Food Inspection Agency	2
Center for Global Health Security & Diplomacy	1
Centre for Global Health Security	1
Goba Affairs Canada	1
Health Canada	3
International Federation of Biosafety Associations	1
Kenya Medica Research Institute _ KEMRI	1
PHAC	4
Public Health Agency of Canada	11
The Public Health Agency of Canada	1
University of Toronto	1
Caribbean	2
CARPHA	2
China	7
ADB	1
Biotech Center for Viral Disease Emergency,China CDC	1
Ningxia Medical University	1
QMUL	1
Shanghai Medical College, Fudan University	2
The World Bank	1
Colombia	3
FAO	1
University of Oslo	1
UPTC	1
Cote D'ivoire	18
Center for Communication Programms Johns Hopkins University	1
CHEMONICS HRH2030	1
FAO	2
Hopital General de Port bouet	1
Institut Pasteur Côte d'Ivoire	2
Ivoirian Anti-polution Center/University of Peleforo Gon Coulibaly	1
Laboratoire National d'Appui au DéveloppementAgricole (LANADA)	1
Management Sciences for Health	1
Ministère des Ressources Animales et Halieutiques	1

MSH	1
MTaPS	1
National Institut of Public Hygiene	1
Oceanology Research Center	1
Task Force PCI	1
University NA/ GTT-RAM	1
USAID	1
Czech Republic	2
CBRND COE	1
Joint CBRN Defence Centre of Excellence	1
DENMARK	1
Centre for Biosecurity and Biopreparedness	1
Egypt	3
FAO	1
MoHP	1
National Research Centre	1
Ethiopia	6
Africa CDC	2
CGPP-Secretariat	1
Ministry of Health, Ethiopia	1
USAID/Ethiopia	1
Vital Strategies	1
Finland	13
Centres for Military Medicine and Biothreat Preparedness	2
Embassy of Finland, Bangkok	1
Finnish Defence Forces	1
Ministry for Foreign Affairs	3
Ministry of Agriculture and Forestry	1
Ministry of Defence Finland	2
Ministry of Social Affairs and Health	3
France	12
CNRS-CIRAD	1
FAO	1
INTERPOL	3
OIE	1
WHO	2
World Organisation for Animal Health (OIE)	4
Gambia	1
MINISTRY OF HEALTH	1
Germany	6
Bielefeld University	1
Federal Ministry of Health	1
Friedrich Loeffler Insitute	1
MINISTRY OF HEALTH	1
MSF	1
Volunteer	1

Ghana	12
GHANA ARMED FORCES	1
GHANA HEALTH SERVICE	4
KCCR	1
Kumasi Center for Collaborative Research in Tropical Medicine	2
Kwame Nkrumah University of Science and Technology	1
Mott MacDonald	1
University of Ghana	1
VETERINARY SERVICE DIVISION	1
Greece	1
HelMSIC	1
Guinea	16
CDC	1
DNSV	1
FAO	1
FHI360	1
John Hopkins Center for communication program	1
McKIng/World Health Organization	1
Ministere de l'elevage	1
Ministry of Environment	1
MINISTRY OF HEALTH	2
Ministry of Livestock	1
National Agency for Health Security of the MoH	2
REDISSE/Plateforme One Health	1
USAID	1
Direção Geral da Pecuária	1
Guyana	3
MINISTRY OF HEALTH	2
National Public Health Reference Laboratory	1
Haiti	2
CDC	2
India	23
Government of India	1
ATree	1
CDC	1
ICMR-NIV Bangalore	1
IDFC Institute	1
Immunology	1
Individual Consultant	1
Institute of Serology	1
Ministry of Health and Family Welfare	4
National Center for Disease Control	2
USAID	2
WHO SEARO	2
World Health Organization	5

Indonesia	86
Academy	1
AIHSP	2
ASEAN Secretariat	2
Australian DFAT	1
Centre for Research and Development of Biomedical and Basic Health TechnologyNIHRD, MoH Indonesia	4
Centre for Strategic and International Studies	1
Coordinating Ministry for Human Development and Culture, Indonesia	1
DAI-Fleming Fund Country Grant to Indonesia	1
Department of Livestock and Animal Health, Central Java Province	1
Direktorat of Aninal Health, ministry of agriculture Indonesia	3
District Level Health Office	1
Eijkman Institute for Molecular Biology	1
Epidemiologi	1
FAO	5
FAO ECTAD	4
FAO-USAID	1
FHI 360 Indonesia	2
GHSA Indonesia secretariat	2
IDDS	1
INDOHUN	2
Indonesia Defense University	1
Indonesian Agricultural Quarantine Agency	1
Indonesian Epidemiologists Association	1
Indonesian Health Student Association	1
Kemenko PMK	1
Ministry of Agriculture, DGLAHS	5
Ministry of Defense	3
Ministry of Environment and Forestry	2
MINISTRY OF HEALTH	6
MoA, Indonesia	1
MOH	3
NA	1
National Animal Health Training Centre of Cinagara	1
NIHRD, Ministry of Health Indonesia	1
Office of Defense Cooperation	2
One Health Collaboration Center, Universitas Syiah Kuala, Aceh, Indonesia	1
Private clinic	1
Syiah Kuala University, Veterinary Faculty	2
Tasikoki Wildlife Rescue and Education Center	1
TNI	1
TNP2K	1
U.S. Embassy Jakarta	3
Udayana OHCC	2
UIN Alauddin Makassar	1
Universitas Pertahanan Indonesia	1
US Embassy Jakarta	1

USAID Indonesia	3
Widya Mandala Catholic University	1
Iran	1
TUMS	1
Israel	2
PSRT	1
Teva Pharmaceuticals	1
Italy	25
Food and Agriculture Organization of the United Nations	9
MINISTRY OF HEALTH	16
Jamaica	1
CARICOM	1
Japan	24
Labour and Welfare	3
Embassy of Japan	1
Institute of Developing Economies	1
Japan International Cooperation Agency	1
JICA Ogata Research Institute	1
Koei Chemical Company	1
Labour and Welfare	1
Ministry of Foreign Affairs	4
MINISTRY OF HEALTH	4
Ministry of Health, Labour and Welfare	2
Novartis	1
OIE	1
OIE RRAP	1
OTSG,USArmy	1
Sumitomo Chemical Company	1
Jordan	5
CRDF Global	1
MOH	2
MSH	1
Royal Medical Services	1
Kenya	33
AFROHUN	1
AU-IBAR	1
Kenya Medical Research Institute	1
Kenya Mission in Geneva	2
Maasai Mara Univeristy	1
Management Sciences for Health	1
MINISTRY OF HEALTH	20
MSH	1
Permanent Mission of Kenya to UN, Geneva	1
Population Services Kenya	1
Results for Development and Kenya CCG	1
USAID	1
YP-CDN	1

Korea	12
KDCA(Korea Disease Control and Prevention Agency)	6
CHA Company	3
FAO RAP	1
KCDC	1
NA	1
Laos	12
DTRA BTRP	1
Heath office Vientiane Capital	1
MINISTRY OF HEALTH	8
National center for laboratory and epidemiology	1
USAID Laos Country Representative Post	1
Liberia	3
Firestone Liberia LLC	1
National Public Health Institute of Liberia	1
USAID	1
Madagascar	2
Direction des Services Vétérinaires	2
Malaysia	15
AIMST University	2
Department of Veterinary Services Malaysia	2
Faculty of Veterinary Medicine, Universiti Malaysia Kelantan	1
Ministry of Health Malaysia	2
MOH MALAYSIA	2
National Public Health Laboratory, Ministry of Health Malaysia	4
PPKAM	1
UPM	1
Mali	4
CRS	1
INSP	1
Ministère de la santé et du développement social	1
USAID	1
Mexico	2
ABSA-International /NextGen / PandeMexican InstitutemicTech / IMSS	1
US EMBASSY MEXICO CITY	1
Mongolia	1
Embassy of Mongolia	1
Montserrat	1
Ministry of Health and Social Services	1
Mozambique	1
USAID	1
Myanmar	23
FHI 360	4
Livestock Breeding and Veterinary Department	1
Ministry of Agriculture,Livestock and Irrigation (Government)	1
Ministry of Health and Sports	6
MSI Myanmar	1
National Health Laboratory	1

National Health Plan Implementation Monitoring Unit	1
Naypyitaw General Hospital	1
Program for Monitoring Emerging Diseases, International Society for Infectious diseases	1
University of Veterinary Science	1
UNOPS	1
US CDC	1
USAID	2
WHO	1
Namibia	6
Ministry of Health and Social Services	4
US-CDC	2
Nepal	5
Department of Livestock Services	2
FAO Nepal	1
N/A	1
USAID	1
Netherlands	11
Food and Agriculture Organization of the United Nations (FAO)	1
LNV	1
Ministry of Health the Netherlands	2
Ministry of Health, Welfare and Sport	2
Netherlands Ministry of Defence	1
RIVM	3
Utrecht University, the Netherlands	1
New Zealand	2
NZCPHM	1
University of Otago	1
Nigeria	11
Auramind Services	1
CDC	1
CORE Group Partners Project	1
Nigeria Centre for Disease Control	4
ONSA	1
Public Health Department, Health and Human Services Secretariat, Federal Capital Territory Administration, Abuja, FCT	1
University of Ilorin	1
West African health Organisation	1
Norway	4
Norway	1
Norwegian Institute of Public Health	1
Norwegian Veterinary Institute	1
The Royal Norwegian Embassy	1
Oman	5
Central public health lab	1
MINISTRY OF HEALTH	4

Pakistan	21
Aga Khan University	2
AUST	1
Embassy of Pakistan Bangkok	1
Government College University, Faisalabad	1
HSP	1
National Institute of Health Pakistan	9
Pakistan Academy of Sciences	1
Quaid I azam university Islamabad	2
University of Haripur	1
University of Karachi	1
University of Malakand	1
Peru	4
Embassy of Peru	1
INCOHEMA	1
Ministerio de Salud del Perú	1
Universidad Peruana Cayetano Heredia	1
Philippines	25
Armed Forces of the Philippines	1
ASEAN Secretariat	1
Asian Development Bank	1
Bureau of Animal Industry	1
Chevron	1
Department of Agriculture - National Meat Inspection Service	1
Department of Health	4
Epidemiology Bureau	1
Department of Health - Philippines	
FAO	1
FHI 360	1
MTaPS	1
Office of the Chief Nurse philippine Air Force	1
Office of The Surgeon General, Armed Forces of the Philippines	1
Philippine Air Force	1
PHILIPPINE DEPARTMENT OF HEALTH	2
Philippine Embassy	3
Republic of the Philippines - Department of Health	1
University of the Philippines Manila	2
Portugal	1
INSA	1
Puerto Rico	1
RTSL	1
Saint Lucia	1
Department of Health and Wellness	1

Saudi Arabia	7
Imam Abdulrahman bin Faisal university	1
MOH	1
Princess Nourah Bint Abdul Rahman University	1
Saudi Center For Disease Prevention and Control	3
NA	1
Senegal	53
Autorité nationale de Biosecurité du Sénégal	1
CDC	1
High Council of Global Health Security SENEGAL	1
military health service	1
Ministère de l'Elevage et des Productions animales	1
Ministry of Livestock and animal productions	1
MSH	1
MTaPS / USAID	1
Presidency of the Republic of Senegal	2
Université Cheikh Anta Diop de Dakar	1
WHO	1
NA	41
Sierra Leone	5
CDC	1
ICAP Columbia UNiversity Sierra Leone	1
Ministry of Agriculture and Forestry	1
Ministry of health and sanitation Sierra Leone	1
WHO	1
Singapore	17
Becton Dickinson	1
Chevron	2
Communicable Disease Threats Initiative, Incorporating Asia Pacific Leaders Malaria Alliance (APLMA)	1
EU CBRN CoE Regional Secretariat - South East Asia	1
Ministry Of Health Singapore	5
MSF	1
National Centre for Infectious Diseases	2
National Parks Board	1
National Public Health Laboraotry	1
NParks/AVS	1
The National Centre for Infectious Diseases (NCID)	1
South Africa	2
National Department of Health (South Africa)	1
National Institute for Communicable Diseases (NICD) a division of the National Health Laboratory Services (NHLS)	1
Spain	1
Ministerio de Agricultura, Pesca y Alimentación	1

Sri Lanka	13
Association of Disaster Medicine	1
Department of Animal Production and Health,Peradeniya	4
Disaster Preparedness and Response Division, Ministry of Health, Sri Lanka	1
Ministry of Health, Sri Lanka	3
Postgraduate Institute of Medicine, University of Colombo	2
Sri Lanka Army Health Services	1
Sri Lanka Association of Disaster Medicine	1
Sudan	1
Sudan	1
Suriname	1
Central Laboratory	1
Sweden	6
Ministry of Health and Social Affairs	2
Public Health Agency of Sweden	3
Towards A Safer World Network	1
Switzerland	20
BWC, Implementation Support Unit, United Nations Office for Disarmament Affairs	1
Global Antibiotic R&D Partnership	1
Global Fund to Fight AIDS, Tuberculosis and Malaria	1
IFRC Geneva	2
Roche	1
Swiss Federal Office of Public Health	1
World Economic Forum	2
World Health Organization	11
Taiwan	4
Taiwan Centers for Disease Control	4
Tanzania, United Republic of	10
Abt Associates	1
Afrimedico	1
CDC	2
INTERPOL-TANZANIA	1
MOH	1
National Institute for Medical Research, Muhimbili Centre	1
PATH	1
USAID	2
Thailand	266
ACMM	2
AFRIMS	4
Army	1
ASEAN +3 FETN	1
ASEAN CENTER OF MILITARY MEDICINE (ACMM)	2
ASEAN Institute for Health Development	1
ASH	1
Bamrasnaradura infectious disease institute	1
Bureau of Laboratory Quality Standards	1
Bureau of Risk Communication, Department of disease control	1
CDC Thailand	19

Chevron Thailand	1
Chulalongkorn University	2
DDC Foundation Thailand	1
Department of Disaster Prevention and Mitigation	1
Department of Disease Control (DDC)	27
Department of International Organizations, MOFA	3
Division of Epidemiology, DDC	12
Department of Livestock Development (DLD)	7
Department of Medical Sciences, MOPH	17
Department of National Parks, Wildlife and Plant Conservation	2
Division of Communicable Diseases	6
Division of Innovation and Research	1
Division of Disease Control in Emergency Situation (DEOC), DDC	1
Embassy of Finland in Bangkok	1
Embassy of Malaysia Bangkok	2
Embassy of Mexico Bangkok	2
Embassy of the Netherlands	1
Embassy of Nigeria	1
Embassy of the People's Republic of China in the Kingdom of Thailand	3
Embassy of United Arab Emirates	2
Embassy of the Republic of Singapore in Bangkok	1
EU	1
Faculty of Medicine Chulalongkorn	1
Faculty of Public Health, Mahasarakham University	1
FAO-RAP	4
FHI360	2
Fleming Fund Management Agent	1
Food and Agriculture Organization of the United Nations (FAO)	13
Food and Drug Administration	1
French Embassy to Thailand	1
GHSA steering group thailand	1
GHSA technical committee	1
Global Health Division Office, the Permanent Secretary	2
IDDS	2
International Labour Organization	1
Institute for Urban Disease Control and Prevention (IUDC)	2
Mahidol University	1
Ministry of Agriculture and Cooperatives	2
Ministry of Foreign Affairs (MOFA)	4
Ministry of Public Health	20
Mott MacDonald (Fleming Fund Management Agents)	1
National Institute of Animal Health (NIAH), Department of Livestock Development	1
National Institute of Health (NIH), Department of Medical Sciences	5
Office of disease and prevention control center, region 4th Saraburi	2
Office of FETP Networking	1
Office of international cooperation, Department of Disease Control	28
Office of permanent secretary, Minister of Public Health	1
Office of the National Security Council	3

OIE	3
Pact Thailand	1
Pfizer Thailand	1
Prince Mahidol Award Foundation	1
SEI	1
Southeast Asia One Health University Network (SEAOHUN)	3
STRATEGY AND PLANNING DIVISION, MOPH	4
Thai Red Cross Emerging Infectious Diseases Health Science Centre, King Chulalongkorn Memorial Hospital, Faculty of Medicine, Chulalongkorn University, Bangkok	1
Thailand GHSA Co-Unit	1
the FAO Regional Office for Asia and the Pacifics	1
The Rockefeller Foundation	1
The White Labels Co.,Ltd.	1
THOHUN	1
TICA	1
UNFAO	1
USAID	3
USAID RDMA	1
USAMD-AFRIMS	1
World Health Organization	7
WORLD ORGANIZATION FOR ANIMAL HEALTH	1
Timor-Leste	1
MINISTRY OF HEALTH	1
Trinidad and Tobago	8
Caribbean Public Health Agency (CARPHA)	6
NCRHA	1
Trinidad and Tobago Embassy , Washington D.C.	1
Tunisia	1
MINISTRY OF HEALTH	1
Turkey	5
CBRN Department	1
Embassy of the Republic of Turkey	1
MINISTRY OF HEALTH	3
Uganda	23
AFRICA ONE HEALTH UNIVERSITY NETWORK	2
CDC	3
Infectious Diseases Institute	5
Makerere University School of Public Health	3
MINISTRY OF HEALTH	3
Next Generation Global Health Security Network	1
Onehealthlessons.com	1
PATH IDDS PROJECT	1
Purlife Health pharmacy	1
Uganda Ministry of Health	1
Uganda National One Health Platform	1
WHO	1

Ukraine	2
Embassy of Ukraine	1
Public Health Center of Ministry of Health of Ukraine	1
United Arab Emirates	5
UAE	1
Health Attache UAE	2
Ministry of Health and Prevention	2
United Kingdom	30
AstraZeneca	1
BMJ	2
DEFRA - UK Government	1
Department of Health and Social Care	5
Elanco Animal Health	1
Foreign, Commonwealth and Development Office	1
Independent	1
King's College London	1
London School of Hygiene and Tropical Medicine	1
Manchester Institute of Biotechnology	1
Mott MacDonald	1
NextGen GHSA	2
PSRT	3
Public Health England	3
RTI International	1
UN Foundation	1
University of Bristol	1
University of Oxford	1
Veterinary Officer and Deputy Director for Global Animal Health and Trade	1
WHO Euro	1
United States Minor Outlying Islands	1
CORE Group	1
United States of America	388
3E Care Solutions	1
AAAS	4
AAAS STPF	1
AAAS/NSF	1
ABBOTT	1
Accenture	1
Aequor Inc	1
AFHSD/GEIS	1
American Society of Tropical Medicine and Hygiene	1
American Veterinary Medical Association	1
Ashner Associates	1
ASPPH/NHTSA	1
Association of Public Health Laboratories (APHL)	4
Bill & Melinda Gates Foundation	1
Biological Threat Reduction Program	1
Booz Allen Hamilton	2
BTRP	1

Bureau of Medicine and Surgery	1
CDC	38
Center for Excellence in Disaster Management and Humanitarian Assistance	1
Center for Global Development	1
Chemonics International	1
Chevron	1
Cincinnati Children's Hospital Medical Center	1
CNA	1
CNS	1
Colorado State University	1
Columbia University	1
Communications Division / Military Health System	1
CORE Group	1
Council on Strategic Risks	1
Crayola	1
CRDF Global	5
DEFENSE INSTITUTE FOR MEDICAL OPERATIONS	1
Department of Agriculture	6
Department of Defense	7
Department of Health and Human Services	10
Department of State	8
DHA	2
DIMO	1
DoD/DHAPP	2
DTRA	3
EcoHealth Alliance	3
Emergent BioSolutions Inc.	1
Emory University	1
ETHOS Veterinary Health	1
Federal Bureau of Investigation	3
FHI 360	1
FSG	3
G4 Alliance	1
Gabel Janitorial Services	1
Gavi	1
GEIS	1
George Mason University	4
Georgetown University	2
Georgetown University Center for Global Health Practice and Impact	1
Georgetown University Center for Global Health Science and Security	1
GHSA Consortium (CRDF Global)	1
GHSA Consortium (EpiPointe)	1
GHSA Consortium (Merrick & Co)	1
GHSA Consortium (MRI Global)	1
GHSA Consortium (National Academies of Science)	1
GHSA Consortium (NTI)	1
GHSA Consortium (WCAPS)	2
GHSANextGen	1

Global Emerging Infections Surveillance	1
Global Health Advocacy Incubator	1
Global Health Technologies Coalition	2
GNVHA	1
Gryphon Scientific	1
Harvard University	1
Health Initiatives Foundation, Inc	1
Henry Schein	1
HHS	5
HHS/CDC	1
HHS/OGA	2
Hoy Health LLC	1
ICAP at Columbia University	1
Independant	1
INDOPACOM	1
Institute for Defense Analyses	1
International Student One Health Alliance	1
Jhpiego	1
Johns Hopkins Center for Communication Programs	1
Johns Hopkins Center for Health Security	3
Johns Hopkins University	1
Johnson County Public Health	1
Journey Vet	1
Management Sciences for Health	6
McCann Health	1
Medicines, Technologies and Pharmaceutical Services (MTaPS), Management Sciences for Health (MSH)	1
Medtronic	2
Metabiota	1
Michigan State University	1
MSH	5
MTaPS	1
N/A	2
NASA	1
National Academy of Sciences	1
National Defense University	1
National Security Council	1
Naval Medical Research Center	1
Navy/NMRC	1
Next Generation Global Health Security Network	5
NIH	1
Nuclear Threat Initiative	10
OASD(HA)	1
Office of the US Army Surgeon General	1
One Health Commission	1
One Health Lessons	2
Pacific Air Force	1
Palisades Group, LLC for NTI	1

Pandemic Action Network	1
PandemicTech	1
Parliamentarians for Global Action	1
PLS	1
Politico	1
Princeton University	1
Private Sector Rountable	1
Project HOPE	2
PSRT Rabin Martin	1
Public	1
Purdue University	1
Qlik	2
Rabin Martin	1
Rand	1
Resolve to Save Lives	3
RTI International	3
Sandia National Laboratories	2
SciLore	1
Scowcroft Institute of International Affairs at the Bush School of Government and Public Service, Texas A&M University.	1
Selbst	1
self	1
Self employed	1
SNL	1
Stanford University	1
State Department	2
Student	1
Sumitomo Chemical	1
Texas A&M University	1
Texas Health & Human Services	1
The Economist Group	1
The Economist Intelligence Unit	1
The Stimson Center	1
Treasury Department	2
Tufts University	1
U.S. Agency for International Development	6
U.S. Centers for Disease Control and Prevention (CDC)	10
U.S. Department of Health and Human Services	2
U.S. Department of State	4
U.S. DoD Contractor	1
U.S. Indo-Pacific Command	1
UN Foundation	2
Uniformed Services University, Center for Global Health Engagement (CGHE)	1
United Nations Foundation	2
United States Department of Agriculture	1
United States Indo-Pacific Command	1
University of California Davis	1
University of Michigan	1

UNSW	1
UPS Foundation	1
US Army Public Health Command-Pacific	2
US Defense Health Agency	1
US Department of Defense	1
US Department of Health and Human Services	1
US Department of State	3
US DOD	3
US National Academy of Medicine	1
US Navy	2
US/HHS	1
USA	1
USAF PACAF	2
USAID	14
USAID Indonesia	1
USAID MTaPS program	1
USAID/Mozambique	1
USAID/Nigeria	1
USAID/W	1
USDA	1
USDA/FAS	1
USDOT	1
USG	2
USINDOPACOM	2
USN	2
USU Center for Global Health Engagement	1
USUHS-IHS	1
Virginia Tech	1
Virtual Student Federal Service	1
Vital Strategies	1
Walter Reed Army Institute of Research	1
Western University of Health Sciences College of Veterinary Medicine	1
What To Expect Project	1
WHO	1
Women of Color Advancing Peace and Security	1
World Bank	7
TEPHINET	1
Disaster Risk Management and Climate Change Adaptation	1
Health, Nutrition and Population, Global Financing Facility for Women, Children and Adolescents (GFF)	1
Johnson & Johnson	1
Leadership Board, Global Virome Project	1
MoA	1
Office of International Health & Biodefense	1
Resolve to Save Lives, an initiative of Vital Strategies.	1
Technical Specialist	1
TEPHINET	1

United Nations	1
World Organisation for Animal Health (OIE)	1
Viet Nam	18
Department of International Cooperation	1
Department of Planning and Finance	1
Department of Preventive Medicine	2
Ministry of Defence	1
MINISTRY OF HEALTH	2
APHIS IS Hanoi	1
Culmen International (DTRA logistics contractor)	1
FAO	2
HMU	1
USAID	2
Viet Nam General Department of Preventive Medicine	1
Viet Nam One Health University Network	2
WHO	1
Yemen	3
Ministry of public health	1
وزارة الصحة العامة والسكان	2
Zambia	1
Africa Centres for Disease Control and Prevention	1
Zimbabwe	2
MoHCC	1
NMRL	1