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The World Health Organization and Pandemic Protection in a Globalized World

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I thank Chairman Young, Ranking Member Merkley and the distinguished members of the Subcommittee for convening this hearing and inviting me to share my views. This statement responds to the questions posed in Chairman Young's letter to me of June 15, 2017.

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1. What are the leading pandemic threats that we confront and how serious are they?

Outbreaks of infectious disease have shaped human history, in ways that have massive political, social and environmental consequences and can be more destructive than war. They cannot be predicted with precision. The threats are always changing and potentially enhanced by weak health systems, increased mobility, changing patterns of land use, anti-microbial resistance and volatile climates. The threats potentially affect all countries.

Pandemic threats are infectious diseases that move from being single manageable outbreaks to multi-centred infectious that have the potential to affect the whole world. In determining the seriousness of a pandemic what matters is the rate at which a disease is transmitted and the mode of transmission, the number of people infected by one person and the lethality of the disease. Modern pandemics have included HIV/AIDS, H1 N1 influenza and, most recently, Zika.

What we know for certain is that emerging infections will continue to be a perpetual worldwide challenge requiring the attention of all nations. The majority of new infectious diseases (75%) come from the animal kingdom. Geographical "hotspots" have been identified. Key elements for mitigating the threat are effective (reliable and responsive) worldwide disease surveillance systems; transparency about health threats and honest communications with the public; functional in-country public health and

health care infrastructure; coordinated basic and clinical research, with protocols for collaboration in case a new threat is emerging; and the development of "universal platform technologies" that enable the rapid development of vaccines, diagnostics, and therapeutics.

The World Health Organization (WHO) screens an average of 3000 signals of potential new disease outbreaks each month: of these around 30 (1%) need more detailed investigation. Only one or two per month require substantial action from the WHO and/or its partners.

In addition to Influenza, WHO has prioritized nine pathogens with outbreak potential for urgent research attention with a particular focus on vaccines and diagnostics. The following table shows the product profiles for vaccines or diagnostics that have already been developed or are under developed for each of these priority diseases.[1] [For the vaccination approach to be fully viable it is vital that every effort is used to reduce the "vaccine hesitancy" that has become a characteristic of some societies].

2. What is and what should be the mission of the WHO? How is the WHO doing on fulfilling that mission? What division of labor should exist between WHO, NGOs and governments?

WHO's mission

Under its Constitution, the objective of WHO is the "attainment by all peoples of the highest possible level of health". WHO's role during health emergencies is also recognized under its Constitution, which mandates WHO to provide technical assistance and aid in emergencies. This role has been affirmed in numerous resolutions of the World Health Assembly.[2]

2015-2016 Advisory Group on the Reform of WHO's Work in Outbreaks and Emergencies with Health and Humanitarian Consequences

From 2015-2016, I chaired an Advisory Group, established by WHO Director-General Margaret Chan, on the Reform of WHO's Work in Outbreaks and Emergencies with

[1] Arenaviral haemorrhagic fevers, including Lassa Fever; Crimean Congo Haemorrhagic Fever (CCHF); filoviral diseases (including Ebola and Marburg); Middle East Respiratory Syndrome Coronavirus (MERS-CoV); other highly pathogenic coronaviral diseases (such as Severe Acute Respiratory Syndrome, (SARS)); Nipah and related henipaviral diseases; Rift Valley Fever (RVF); Severe Fever with Thrombocytopenia Syndrome (SFTS); and Zika virus

[2] World Health Assembly resolutions WHA28.45, WHA34.26, WHA44.41, WHA46.6, WHA48.2, WHA58.1, WHA59.22, WHA64.10 and WHA65.20

Health and Humanitarian Consequences.[3] This Advisory Group recognized that during disease outbreaks WHO is expected to exercise decisive leadership while – at the same time - supporting national authorities and operating as one of the partners alongside other international and local actors for health. Each of these have their own responsibilities and expertise in the different aspects of the work on outbreaks.

The Advisory Group concluded that WHO's critical functions in outbreaks should reflect the Organization's strengths and expertise, and that other partners should lead on functions where they have a comparative advantage. The Advisory Group also concluded that three policies and six critical functions are essential for WHO's work in outbreaks:

The three policies are:

a. The surge policy (ie the capability to surge experienced personnel into local settings to provide strategic direction);

b. The Health Emergency Leader policy (ie the capability to serve as response leader in the local setting and have the people capable of leadership in this role);

c. The no-regrets policy (ie erring on the side of caution by deploying more resources and capacity to respond to an outbreak than might initially be warranted, without blame or regret, even if the level of deployment subsequently proves to exceed the actual need).

The critical functions include:

a. Leadership for the health of all people: providing policy guidance, strategic direction and operational planning;

b. Engaging with political decision-makers: engagement with national and local authorities and key community figures to ensure that actions taken are evidence-based and that health workers are able to access affected populations. When necessary, this engagement would go beyond the Minister of Health to provincial governors, Prime Ministers and Presidents;

c. Coordination: convening health actors; coordination of international support and operations in the field; promoting harmonization and synergy around a common plan and pursuit of agreed outcomes; and facilitating alignment on public health and patient care issues

d. Scientific and technical expertise through research and development: ensuring the application of the best scientific knowledge of an outbreak in continuous risk assessment; commissioning research and product development as required, while pushing for innovation; issuing relevant standards, guidelines and technical support; analyzing and assessing risk under the International Health Regulations and certifying elements of national systems for health,

[3] The two reports of the Advisory Group can be found at http://www.who.int/about/who_reform/emergency-capacities/advisory-group/en/

(including clinical services, human resource, infection prevention and control, surge capacities, and management of supplies)

e. Information systems and risk communications: providing reliable information on risks and responses; ensuring that information is available to health actors; recognizing that the timely dissemination of accurate information about an event to the public is critical to managing outbreaks and emergencies

f. Facilitation of access to essential health services for people whose urgent needs are not being met by any other provider: Using good offices to ensure that people whose extreme needs are not being met by any national or international provider – including clinical patient care – can access essential services.

Division of labor

During outbreaks of disease, the responses have to be built up from local communities and nations. Each nation is "in charge" of the outbreak responses within its borders. Within countries, WHO is expected to provide technical support, serve as a point of reference, and function as a trusted and critical partner. The main actor is the national government. WHO is linked to national actors through several pathways – i) its own country offices and Regional Directors, ii) the Global Outbreak Alert and Response (professional) Network and iii) national and regional emergency response teams that have been established and – in some cases – registered with WHO as competent to work in this role.

3. What is your assessment of the successes and shortcomings of the WHO? What are the reasons for these successes and shortcomings?

In 2015 WHO was criticized for being unable to provide nations, and the world, with the expected levels of expertise and leadership when people's health is threatened by outbreaks. The main reason for this was that WHO's mandate for working in outbreaks was not adequately reflected in the focus of its governing bodies: this was reflected in the relatively low priority given to this work in WHO planning and budgeting as well as in the capabilities of its staff. Yet the work on outbreaks and emergencies is at the heart of what is expected of the WHO. To fulfil that mandate the organization needs to be fearless and fully competent when it comes to identifying disease threats within countries. It must also be adequately financed to have sufficient personnel and support systems for this function to be performed.

On outbreak prevention WHO is the custodian of a treaty instrument which sets out countries' obligations with regard to outbreak prevention and limitation – the revised International Health Regulations (IHR). I was working in WHO when the revisions were negotiated over two years between 2001 and 2003: the treaty came into force in 2005. The IHR treaty sets out some important commitments and obligations by each country. At that time countries insisted that assessment of performance under the IHR would be

self-assessment. (Interestingly for the animal health sector the assessment system – the PVS – is external, because it is closely linked to whether or not trade restrictions on animal products can be imposed by countries under WTO auspices).

A review of the functioning of the IHR in 2015 – 16, after the Ebola outbreak, covered several important issues. These included i) the calling of a "Public Health Emergency of International Concern" which was delayed till early August 2014 in the case of Ebola, and ii) countries' anxieties about the manner in which advice on travel limitations or trade restrictions was implemented by the WHO (a particular concern during SARS in 2004).

WHO, working together with partners, developed a new IHR monitoring and evaluation framework. One component of this framework is a "joint external evaluation" (JEE) – an assessment of a country's compliance with the IHR to be undertaken by the national authorities together with WHO-approved external actors. The report of each JEE was to be a public document that would be used to identify gaps in preparedness and capability, and help sharpen national planning for improving preparedness. The JEE result would also be used to help direct financing for health systems to be adequately prepared for outbreak containment.

The JEE protocols have been developed to assist in evaluating country capacities to prevent, detect, and respond to high-threat infectious hazards as set out in the IHR. The JEE tool is arranged according to the following core elements:

- preventing and reducing the likelihood of outbreaks and other public health hazards and events defined by International Health Regulations (2005) is essential;
- detecting threats early can save lives; and
- rapid, effective response requires multi-sectoral, national and international coordination and communication.

Country participation in the JEE process is <u>voluntary</u>. The process involves a multisectoral approach by both the external teams and the host countries, with an emphasis on transparency and openness of data, information sharing, and the public release of reports. Countries are supported in measuring their progress in achieving the targets of the International Health Regulations (2005), ensuring any improvements can be sustained, and identifying the most urgent needs within their health security system, to prioritize opportunities for enhanced preparedness, response and action. The JEE also provides a basis for countries to engage with current and prospective donors and partners, to target resources effectively.

WHO would like to be sure that after each JEE there is a robust mechanism to ensure that countries and international financial institutions ensure that identified gaps are filled. This may involve countries receiving financial assistance.

Since February 2016, 34 joint external evaluations (JEE) have been undertaken across all six WHO regions. Sixteen JEE mission reports are published on the WHO website including: Armenia, Bahrain, Bangladesh, Cambodia, Ethiopia, Eritrea, Jordan, Lebanon Morocco, Pakistan, Qatar, Sierra Leone, Somalia, Sudan, United Republic of Tanzania, and United States of America. This is extraordinary progress though poorer countries with gaps are still seeking financial support to overcome them).

Now to the response to outbreaks: When WHO's responses to outbreaks were analyzed after the West Africa Ebola outbreak in 2014-15, WHO was described as needing to be better engaged at local level, quicker to deploy in crises and better at working in partnership with others. The Advisory Group felt that WHO did not consistently demonstrate its independence and impartiality when dealing with outbreaks and crises.

Article 37 of the WHO Constitution stipulates that in the "performance of their duties the Director-General and the staff shall not seek or receive instructions from any government or from any authority external to the Organization… Each Member of the Organization on its part undertakes to respect the exclusively international character of the Director-General and the staff and not to seek to influence them." Independence and impartiality are expected of WHO staff at all levels: the Advisory Group concluded that they should be made much more explicit both in all work undertaken throughout the Organization and in all its external communications.

In 2016 WHO's Director General concluded that these perceptions and related performance deficits had to change if the global public is to be confident that the organization is predictable and dependable in responding to outbreaks.

In early 2016 the WHO Director-General initiated a profound organizational transformation. She refashioned the way WHO contributes to the management of risks to people's health and responses to disease outbreaks. She decided that a merger of organizational units within WHO would not suffice: instead she established new structures and procedures. The heart of the change is a single Programme for WHO's work in outbreaks and emergencies, with a single budget, a single workforce, a single line of authority, a single operations support system, and a single set of business processes (the "five ones").

The Director-General acknowledged that WHO must at all times recognize the primary role of Member States in preparing for and responding to outbreaks. The Director-General proposed that WHO recalibrate its relationships with Member States and other partners to ensure that all recognize the importance of its independence and impartiality in outbreaks and emergencies. She wanted to be sure that the organization has the respect and trust of its Member States so that it can – when necessary – ask them to change their responses to outbreaks and expect them to make these changes promptly. To this end, she encouraged independent risk assessment and courageous incident management.

Because of uncertainties about "who was in charge" in the early months of the 2014 – 15 Ebola outbreak, the Director-General reinforced her position as the person ultimately accountable for incident management within WHO with her proposed new Emergencies Programme reinforcing that line of accountability. She indicated that the manner in which responsibility would be delegated to others would at no time enable any WHO staff member to claim that "someone else is in charge".

WHO's business processes are not designed for an organization that has to respond rapidly to disease outbreaks. There is extraordinary work being done in difficult places by WHO now despite the current business processes: more could be done through this will require both culture change, enhancement of the no-regrets approach to crises, and clear organization-wide benchmarks.

The Director-General concluded that the transformation required for WHO effectively to perform these functions would require a significant increase in experienced staff at all levels. This means predictable (and not short-term) income. The Director-General split budgets into (a) funds for the baseline capacity of the new Programme (b) funds for specific emergency operations and (c) contingency funds in case of acute need. The funds have proved to be hard to raise.

WHO Health Emergencies Programme – successes and shortcomings

The Director General appointed an Executive Director for the new WHO Health Emergencies Programme in 2016. He has been in post for just over a year. He cites the following progress achieved since the establishment of the new Programme:

a. Alert system: The WHO now has a fully functional global system able rapidly to pick up any major new outbreaks or other events: it captures 3000 signals per month. This is an events-based alert system that relies on reports from Governments, WHO staff, partners and the media: many of the signals are not much more than rumours. WHO is systematic in assessing each and filtering out around 300 that require more serious interrogation by the WHO global and regional teams. Of these, there are around 30 a month (on average) that require much more intense follow-up by national governments, WHO staff and/or partner agencies: in some cases an investigation team is dispatched. For example the system provided rumours of the recent Ebola outbreak in DRC well before laboratory confirmation and WHO was already preparing deployments prior to the outbreak being confirmed. This gave WHO a longer lead time to respond. The system is being moved entirely on-line and non-confidential windows will be open to partners in real-time through the Epidemic Intelligence Open Source system which will be up and running in July 2017.

b. Response system: There is a systematic link between alerts that are verified as new outbreak events and the response system managed by WHO. The link enables WHO to decide, in an explicit way, whether the Response needs support from the WHO and what form that support should take (how it is graded, and what level of local-level assistance is needed). In my view this is an important development – it reflects the WHO's capability for being both predictable and dependable, in line with what was requested by the Member States. The functioning of the response system has been demonstrated in many recent responses:

    i. the Ebola outbreak 2017 in DRC in which a full scale response was mounted within one week of lab confirmation,
    ii. the response to war-related trauma among civilians in Mosul, Iraq where WHO has worked with partners on the front lines to set up field hospitals,
    iii. the response to the use of sarin gas in northern Syria where WHO supported health workers in clinical case management, making antidotes available, investigating the incident and further preparations for future attacks,
    iv. the work on global influenza preparedness where surveillance (through more than 140 national influenza centres) has been linked to preparation for potential responses through the Pandemic Influenza Preparedness (PIP) framework where up to 400 million doses of vaccine targeting any strains of pandemic flu are ready to be made available quickly through an innovative private-public partnership.

The influenza work has benefited from good collaboration between WHO, the Food and Agriculture Organization (FAO) and the World Organization for Animal Health (OiE) in the "One Health" approach.

c. The research and development (R&D) mechanism: This is now in place through the WHO R & D blueprint which provides the basis for global prioritization and coordination of R & D efforts for diseases for which a natural market may not exist. Most notably it has already resulted in an effective global vaccine against Ebola now being available for outbreaks with expanded access to what is still a product under clinical trials using compassionate use frameworks. The top 10 priority pathogens for R and D have been agreed by all WHO's major partners (see above Q1).

d. National capacity assessment: A strong system for completing objective, peer-reviewed assessments of country's public health core capacities is now in place with almost 70 countries slated to have completed their JEEs by end

2017. This is the first time global health security will rest on more objective data than country-self assessments.

e. New relations to working with partners: WHO is working more coherently with partners from the humanitarian system, the outbreak response system (via GOARN) and financing entities (including world bank, global alliance for vaccines and immunization and the public-private collaboration CEPI) to ensure complementarity and address longer term system vulnerabilities especially in fragile states. The strategies for combined working on yellow fever, cholera and fragile states that are now being developed represent new ways to address such vulnerabilities. This is where WHO has benefited greatly from working with key US Government actors including CDC, HHS, DTRA, NIH and State Department. Each of these has a number of existing technical and financial relationships with WHO/WHE which have been built up over the years, are staring to bring real dividends. These relationships reflect a real interdependence not least because the physical presence of USG personnel in many high threat environments is actually limited by USG regulations.

The Director of the Health Emergencies Programme considers that the major constraints on the Programme currently are

a. the limited human capacity in WHO related to multiple demands on over-stretched staffing;
b. WHO country offices still needing more skilled personnel;
c. business processes still need to be improved; and
d. the lack of a stable long term financing model (the present is short term and unstable).

4. How does, and how should, the WHO or outside entities measure the successes or failure of its programmes?

There have been numerous entities established by the UN Secretary-General and WHO to examine the functioning and capacities of the multilateral system when responding to health emergences. These include:

The Ebola Interim Assessment Panel, a panel of independent experts appointed by the WHO Director-General, which produced its report in July 2015.[4]

The Advisory Group on the Reform of WHO's Work in Outbreaks and Emergencies with Health and Humanitarian Consequences, which issued two reports in October 2015 and January 2016.[5]

[4] http://www.who.int/csr/resources/publications/ebola/ebola-panel-report/en/
[5] http://www.who.int/about/who_reform/emergency-capacities/advisory-group/en/

The High-level Panel on the Global Response to Health Crises, appointed by the UN Secretary-General in April 2015. One year later, the Panel issued its report on "Protecting humanity from future health crises: report of the High-level Panel on the Global Response to Health Crises".[6] Its 27 recommendations focused on the need for stronger national capabilities, better international operations (with a properly funded and operational WHO at the core), more research and development, and adequate financing.

The Global Health Crises Task Force, appointed by the UN Secretary-General to monitor global capacities for handling health crises in June 2016 for a year.[7] The Task Force offers an expert-led assessment of global preparedness and its final report will be released shortly.

the Independent Oversight and Advisory Committee established in March 2016 by the WHO Director-General for a four year period to provide oversight and monitoring of the development and performance of the WHO Health Emergencies Programme, guide the Programme's activities, and report findings through the Executive Board to the World Health Assembly.

These are the main functions of the Independent Oversight and Advisory Committee:

a. Assess the performance of the Programme's key functions in health emergencies (including all 5 pillars of the work of the Programme, for example, including both emergency operations and core services).
b. Determine the appropriateness and adequacy of the Programme's financing and resourcing.
c. Provide advice to the Director-General.
d. Review the Programme's reports on WHO's actions in health emergencies.
e. Review reports on the state of health security developed by the Director-General for submission to the World Health Assembly through the Executive Board and to the United Nations General Assembly.
f. Prepare an annual report on its activities, conclusions, recommendations, and, where necessary, interim reports, for submission by the Chair of the Committee to the World Health Assembly through the WHO Executive Board.

The Committee consists of 8 members drawn from national governments, nongovernmental organizations, and the UN system, with extensive experience in broad range of disciplines, including public health, infectious disease, humanitarian crises, public administration, emergency management, community engagement, partnerships and development. Members serve in their personal capacity and will exercise their responsibilities with full regard for the paramount importance of independence.

[6] http://www.un.org/ga/search/view_doc.asp?symbol=A/70/723
[7] http://www.un.org/en/global-health-crises-task-force/index.html

The Independent Oversight and Advisory Committee has found that partners in-country acknowledge encouraging signs in WHO's field presence and partnership engagement, and an expanded role in humanitarian crises. The committee's May 2017 report is extremely positive on the outbreak response capacity as a result of the big changes that have been made in the last 12 months. This is reflected in WHO processes, the preventive work in line with the IHR and response activities. It applies both to outbreaks and in emergencies. However, the IOAC has expressed concerns that the Programme is underfunded and the significant progress to date is seen as fragile. These concerns have also been expressed by the Global Health Crises Task Force appointed by the UN Secretary-General.

5. How did WHO perform in the 2014 – 15 Ebola crisis and other major recent crises? What are the major lessons learnt?

There was no shortage of analyses of what went wrong in the 2014 – 15 Ebola response. The most serious problems were in Guinea, then in Sierra Leone and Liberia. The outbreak was missed at the end of 2013, downplayed in May 2014 and then its severity was not sufficiently recognized even in July 2014 when numbers of cases were doubling every three weeks.

The seriousness of the problems was simultaneously recognized by several groups in August 2014. These included national governments of the affected countries and others in the region, the African Union, NGOs especially MSF, the US CDC, business enterprises as well as many donor Governments and agencies (US, UK, French, European Union, Foundations) together with the UN system and International Financial Institutions. The UN Secretary General provided hands on leadership that month along with many others: he also established the Global Ebola Response Coalition (as a coordination mechanism) and the UN Ebola Emergency Response Mission (to spearhead in-country action). A massive multi-actor support operation was initiated. At the same time, Mali, Nigeria and Senegal were able to deal with the Ebola coming into their countries extremely effectively. The DRC had another unrelated outbreak and dealt well with that: WHO is working effectively with DRC authorities to contain an outbreak now.

One should also remember that WHO managed 17 Ebola Outbreaks previous to the West Africa outbreak very effectively as well as countless meningitis, yellow fever, CCHF, RVF and other epidemics such as SARS. The problems with the Ebola outbreak were unprecedented. But they were also dramatic and costly in terms of lives lost and finance expended.

The difficulties at the beginning of the West Africa Ebola outbreak happened because of a combination of circumstances and the lack of failsafe protocols which should now be in place as a result of the Health Emergencies Programme provided it is properly funded. The main lessons are the need to take every rumour or report seriously, to

have impartial and independent assessments by WHO, to be explicit about the threats with national leaders, and to respond effectively and quickly with strong strategic direction from seasoned and well-respected WHO experts working at the country level.

6. What are your specific recommendations for reforming the Governance as well as the major organizational components, activities or initiatives of the WHO? What reforms are needed most urgently?

The WHO Health Emergencies Programme must be implemented as a common programme across the organization with standardized structure and function in country offices, regional offices and headquarters. It should be a single WHO Health Emergencies Programme, with

a. 1 workforce
b. 1 budget
c. 1 line of accountability
d. 1 set of processes/systems
e. 1 set of benchmarks.

The programme should continue to develop a dedicated platform for operational and logistic support and to use the incident management system. It must have viable business practices and be properly financed. This requires a combination of (a) core financing for baseline staff and activities at the country, regional and Geneva levels, (b) financing of the WHO Contingency Fund for Emergencies, and (c) financing for ongoing activities in acute and protracted emergencies through appeals guided by humanitarian response plans.

The core budget is the funding WHO needs to implement the normative, technical, and operations-management capacities and activities reflected in the new results framework for the Health Emergencies Programme. To implement the core activities of the new Health Emergencies Programme WHO must raise US$ 485 million in 2016–2017: earlier this year a gap of 44% remained.

Funding for the core budget comes from 3 sources:

a. Assessed contributions: The annual quotas paid by Member States to support the work of the Organization.
b. Core voluntary contributions: Flexible contributions made by Member States and other donors that the Director-General may allocate at her discretion and according to need.
c. Earmarked contributions: Voluntary contributions earmarked for the core budget of the WHO Health Emergencies Programme or specific activities within it.

The WHO Contingency Fund for Emergencies (CFE), a replenishable fund which facilitates cash flow in the initial 3 months of response to an emergency (before donor funding arrives), has raised US$ 31.5 million of its US$ 100 million target.

The UN Secretary-General's High Level Panel recommended that assessed contributions to the WHO budget be increased by at least 10 per cent and the WHO Contingency Fund for Emergencies be financed at US$ 300 million.

In May 2016, the World Health Assembly authorized the Director-General to mobilise voluntary contributions for the Health Emergencies. While US$80 million has been reallocated from WHO's regular budget to the Health Emergencies Programme, it continued to face a gap of 29%, as of June 2017. As the Contingency Fund continues to face a 63% funding gap, the increase of the Fund to US$ 300 million proposed by the Panel, although warranted, appears to be unachievable.

In January 2017, the WHO Director-General proposed a US$ 93 million increase in assessed contributions for the draft 2018-19 Programme Budget, reflecting a 10% increase in assessed contributions. The amount of assessed contributions has remained unchanged since the approval of the 2008-2009 budget in May 2007. In the revised programme budget submitted to the World Health Assembly, the WHO Director-General requested only a 3 per cent increase in assessed contributions. During the World Health Assembly in May 2017, this increase was approved.

The UN's Global Health Crisis Task Force (Task Force) considers that the willingness of Member States to provide predictable and adequate financing of WHO is a key indicator of their commitment to the health security of their people. It is also critical to the success of building WHO's capability to support countries in their IHR capacity assessment and development. In multilateral work, funding is Oxygen. When it comes to responding to outbreaks, WHO is starved of Oxygen.

In November 2016, the International Working Group on Financing Preparedness and Response ("IWG") was established under the chairmanship of Peter Sands, with the World Bank serving as its Secretariat. In its report of May 2017, the IWG observed that despite several recent deadly outbreaks, an overwhelming majority of countries are unprepared for the next devastating epidemic. Noting the low priority given to investing in strengthening preparedness and building resilience in most low income countries, the IWG issued 12 recommendations directed at incentivizing and channelling investments to strengthening public health capacities and capabilities. Using JEEs to better understand current gaps in country capacities, the IWG directs countries to practical costing and financing tools designed to help governments quantify resource needs and identify ways of raising the needed resources. Emphasizing the importance of domestic resource mobilization for strengthening preparedness, the IWG exhorts countries to strengthen tax collection and allocate more resources to investments in strengthening country health and disaster management systems, and calls upon development partners

to leverage external assistance to increase domestic financing for preparedness. The IWG recognizes the potential of the private sector to be a strategic partner in the country's preparedness efforts, and underscores the importance of enabling regulations to strengthen public-private collaboration. Finally, the IWG identifies several incentives, including development of country preparedness indexes, which could play a critical role in placing pandemic risks at the same level as financial risks and terrorism threats.

The UN Task Force emphasizes that the engagement of finance ministers is key to attracting attention to health issues within governments. The integration of health crises preparedness into assessments by the International Monetary Fund of a country's economic and financial development will help elevate the profile of health for finance ministers and their governments. The dangers posed by disease outbreaks to the functioning of economies and governance in general must be consistently highlighted. The Task Force emphasizes that regional banks also need to become engaged in generating financing for health systems, and factoring country preparedness for health crises into their policies. Support for laboratories and regional coordination mechanisms would be consistent with the role of regional banks in financing infrastructure.

The UN Task Force stresses the importance of political processes in determining the extent to which people enjoy health security. Engaging with political processes is essential to maintain health security as a priority on national and global political agendas. High-level political engagement on health issues is needed to ensure that health security is recognized as a global public good and that effective financing policies are in place to make best use of available funds. Those concerned about the adequacy of financing for health security, including the UN, should reach out to government ministries, beyond the ministry of health – the ministries handling development, research, environment foreign affairs, finance and national security all need to understand that health threats will undermine their national and economic security. Coordinated action across different sectors is needed to address health crises effectively. To secure the financing they need, health programmes and initiatives must be ready to be held accountable for results in order to build confidence and trust.

World Leaders increasingly recognize the importance of having a system for outbreak preparedness and response that is predictable, dependable and effective. They are concerned about a system which is threadbare and lacking resilience because of insufficient funding. In December 2016, Germany assumed the presidency of the G20. For the first time, a meeting of G-20 health ministers was convened in May 2017. The "Berlin Declaration of the G20 Health Ministers" issued at the end of this meeting focused on global health crises management, health systems strengthening, and antimicrobial resistance. The G20 Health Ministers stressed the importance of complying with the International Health Regulations, providing assistance to countries to implement the IHR and address gaps in core capacities, reporting on health emergencies and following WHO recommendations on trade and travel. The report of

the Health Ministers will be considered by G20 leaders in Germany in the coming two months: it seems possible that there will be greater political interest in meaningful financial support for relevant WHO operations after this event.

7. What specific steps do you believe the US Congress should take with respect to pandemic preparedness and WHO reform?

The US Government has played a major role in infectious disease prevention and control through the work of different Government departments, through the CDC and NIH, through research undertaken by Universities and private enterprises, through participation in GOARN and through consistent contributions to the WHO and other parts of the UN system, as well as the International Financial Institutions, GAVI and similar alliances.

In 2005, when H5N1 avian influenza was threatening to mutate and become highly transmissible between humans, ASEAN nations became particularly concerned that they would be facing a major pandemic with the potential to kill scores – even hundreds – of millions of people, and they could be at the centre of it. They were reeling from billions of dollars' worth of economic consequences from SARS and did not want to find themselves in the midst of something worse.

At that time the UN Secretary-General set up its first ever office for coordinating responses to avian influenza and to prepare for pandemics. The US established an International Partnership on Avian and Pandemic Influenza (IPAPI) with strong engagement of the Secretary HHS and leadership from the State Department. This open partnership – with key technical roles being provided jointly by the UN and World Bank – held a series of six meetings to share experiences and had had a profound impact on pandemic preparedness capability at national, regional and international levels.

The IPAPI morphed (around 2012) into the Global Health Security Agenda with its focus on national preparedness and – in the last two years – on ensuring widespread acceptance of the Joint External Evaluations (JEEs).

The story of the US Congress involvement in pandemic preparedness since 2005 is an extraordinary example of a sustained contribution by US legislators to the wellbeing of all the world's citizens through several significant financial appropriations reflecting a careful assessment of propositions put through by those leading key departments (State, Defense, Health and Human Services, and Development Assistance).

Congress has come behind several important moments when the US has provided significant global leadership (particularly the IPAPI, the PIP pandemic preparedness framework, the One Health approach, the Global Health Security Agenda, the Ebola

response, the JEE alliance and several R and D initiatives). In each of these the US involvement has been substantive – especially in the Ebola response when Congress provided a substantial financing envelope to help ensure that the outbreak did not end up fulfilling some of the worst predictions and affecting the whole of Africa. There is a strong need for the US to continue with this exceptional leadership. At the same time it is right for the US to be encouraging other nations to make their fair share of contributions. This is not easy. It is important that when the US asks other nations to share the burden this does not promote them to react in ways that move things in a different direction. This has happened with the GHSA which was valued by at least 60 nations but had some important detractors. In this regard, WHO has been skilful in garnering member state support for the JEE process (which started out as a GHSA concept).

Conclusion

I hope that the material presented here has indicated the critical role played by the WHO in outbreak (and pandemic) preparedness and response. It is a role that combines leadership, substance and operations. I have sought to demonstrate that a strong and well-functioning WHO Health Emergencies Programme – within a well-funded and confident WHO – is essential for all people's well-being. But this will only come to pass if there is consistent engagement by national leaders in preparedness for outbreaks, if nations are prepared to be mutually accountable to one another and if the WHO is both predictable and dependable on preparedness and response. And, whether we like it or not, that means a consistent stream of finance. WHO's Members have asked it to perform a series of remarkable and vital functions, including on health emergencies, but are not finding a way to enable the organization to have the funds it needs to do what is expected of it.

When it comes to tackling outbreaks what matters is the location and breaking point of the weakest link: this really must not be WHO as – if the WHO fails – there is no alternative means for keeping us all safe in the face of pandemic threats and disease outbreaks.
