WHO Expert Group Consultation on Health Systems for Health Security

Meeting Report

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World Health Organization

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List of Acronyms

AAR	After Action Reviews
EMRO	WHO Regional Office for the Eastern Mediterranean
GPW 13	13th General Programme of Work
HSFA	Health Security Financing Assessment
ICT	Information and Communications Technology
IHR	International Health Regulations
IPC	Infection Prevention and Control
JEE	Joint External Evaluation
MEF	Monitoring and Evaluation Framework
MERS-CoV	Middle East respiratory syndrome-related coronavirus
NAPHS	National Action Plan for Health Security
NHA	National Health Accounts
PVS	Performance of Veterinary Services
SDGs	Sustainable Development Goals
SimEx	Simulation Exercises
SPAR	IHR States Parties self-assessment Annual Reporting
UHC	Universal Health Coverage
WASH	Water, Sanitation and Hygiene
WHO	World Health Organization

Executive Summary

Some 40 experts and decisionmakers from Member States, partners, international organizations, non-state actors, academia and WHO, including professionals in health systems, health security and health financing, attended the *WHO Expert Group Consultation on Health Systems for Health Security* in Geneva, Switzerland on 6-7 March 2019. Together, they defined essential elements needed for health security, discussed health security expenditure tracking, and provided input into development of a framework for leveraging health systems for health security.

Health systems fit to deliver health security

Health emergencies, including the devastating outbreak of Ebola virus disease in West Africa in 2014 and 2015, the ongoing Ebola outbreak in the Democratic Republic of the Congo, and the proliferation of nosocomial outbreaks in health systems at all levels of sophistication, underscore the clear need for resilient health systems as the basis for national, regional and global health security.

A key challenge in strengthening health systems for health security is that there are multiple interpretations of what constitutes a resilient health system. The International Health Regulations (IHR, 2005) define foundational capacities to prevent, detect and respond to health threats and events, but the additional elements required to ensure health security need to be further defined and identified. This includes elements both from the health system and other sectors.

There is also a need to estimate the cost of the elements that are required for health security. Costing data is critical for country planning as well as for advocacy, to make the investment case to a minister of finance or to external partners to strengthen health security capacities.

Defining key elements for health systems for health security

The experts in the consultation agreed that achieving health security requires a responsive health system able to deliver an essential set of services for health emergencies. Health systems provide critical functions that support health security and also contribute to realization of universal health coverage (UHC).

During the consultation, the experts identified initial key elements for health security for further discussion with a wider group of partners, experts, and Member States. Some specific elements identified in the health system and other sectors include the role of the health workforce, the importance of surge capacity for times of emergency, information and communications technology, water sanitation and hygiene (WASH), and fundamentals such as electricity that go beyond health.

The experts also discussed the need for agreement on key definitions and concepts for implementing health security, in order to harmonize and streamline efforts. A term like public goods, for example, can mean something different to public health professionals than to economists.

The expert input during the consultation contributed to WHO revisions to a draft framework for country implementation of health systems for health security. The revised "*Leveraging Health Systems for Health Security, A Draft Framework"* will map WHO benchmarks for IHR capacities against different levels of health system capacities. Health security elements not captured in the benchmarks will be defined and added to the model, and priority actions identified for countries to take. The approach will also capture the elements of other sectors that contribute to health security. The framework will be further refined, and case studies gathered to illustrate the concepts.

Health security expenditure tracking

The expert participants said there is a need for regular, institutionalized tracking of how much is spent on health security. National Health Accounts (NHA) can be built upon to play a key role in expenditure monitoring. NHA systems include functional classification by health care activity type through which it has now become possible to make comparable estimates of country spending on Primary Health Care. Following a similar approach for necessary health security functions would be a relatively straightforward and practical step to setting up country level expenditure monitoring on a regular, institutionalized basis. For necessary multi-sectoral expenditures and investments not covered by NHA, a separate data collection exercise is needed.

Agreed Next Steps

- Revise draft framework
- Refine costing methodology
- Support continued costing studies as a follow-up to Vietnam case study
- Communicate value of health systems for health security approach to countries, partners and donors

The experts were briefed on the Health Security Financing Assessment (HSFA) piloted last year in Vietnam. The HSFA estimated that in 2016 Vietnam spent $181 million on health security — just $1.94 per capita, countering the notion that health security costs an enormous amount of money. The expert participants agreed that more such studies should be conducted, since a single study in one country is not enough to give a full sense of the costs and more work will refine the methodology.

WHO proposed a methodology for costing health systems for health security that combines the National Action Plan for Health Security (NAPHS) costing tool, the One Health costing tool and elements from the World Bank HSFA case study in Vietnam. The methodology, which will be further refined, is meant to capture the costs of meeting IHR (2005) requirements, costs of broader health system contributions to health security, and costs of non-health system elements of health security. WHO will move forward in communicating the value of the health systems for health security approach to countries, partners and donors, and will engage all relevant sectors.

The closing session of the consultation also emphasized the value of determining a set of rapidly implementable actions to progress on implementation of health systems for health security.

I. Introduction

Ebola virus disease outbreaks in Africa, the Zika virus outbreak in the Americas, the MERS-CoV outbreaks in the Middle East and recurrent influenza outbreaks, along with a proliferation of nosocomial outbreaks, demonstrate that the world remains vulnerable to health emergencies.

Public health emergencies have the potential to devastate lives and economies, crossing borders and disrupting trade, travel and livelihoods. Building resilient and responsive health systems, including in fragile and conflict-affected countries, is critical to achieving health security, progressing towards universal health coverage (UHC) and achieving the Sustainable Development Goals (SDGs).

There is a need for strengthened health systems which consider the full scope of interventions and actions required to sustainably provide health security. This is the concept of health systems for health security, which goes beyond the WHO Benchmarks for International Health Regulations (IHR) capacities[1] recommendations to encompass the foundational health system functions as well necessary contributions from other sectors — such as access to safe water for infection prevention and control (IPC) and transportation capacities for logistics movement — as well as sustainable financing.

Outbreaks such as Ebola virus disease and MERS-CoV provide examples of health security undermined by the failings of health systems. Health security planning and health systems have often been considered separately. Efforts to strengthen health security and health systems need to be integrated to promote sustainability, efficiency and effectiveness of a country's preparedness efforts. Strong comprehensive health systems are essential for health security while in turn better health security strengthens health systems.

The 194 Member States of WHO in 2018 adopted the 13th General Programme of Work (GPW13), together with the "triple billion" targets: 1 billion more people with Universal Health Coverage (UHC), 1 billion more better protected from health emergencies and 1 billion more enjoying better health and well-being. These targets will require the formulation and implementation of concrete action through health systems to support the interrelated outcomes of UHC and health security.

The purpose of the *WHO expert group consultation on health systems for health security* is to better identify what preparedness capacities are required from the health system and other

[1] WHO and its partners have developed a tool with a list of benchmarks and corresponding actions that can be applied to increase the performance of countries in emergency preparedness through the development and implementation of a National Action Plan for Health Security (NAPHS). https://apps.who.int/iris/bitstream/handle/10665/311158/9789241515429%20eng.pdf?sequence=1&isAllowed=y

sectors to ensure health security — and to propose a methodology to estimate the cost of efforts to achieve those key capacities.

Consultation Objectives

1. To review and **build consensus on the concept** and operationalization of health systems for health security;
2. To **agree on key elements** (parameters) constituting preparedness and how they fit into the different levels of maturity of the health system;
3. To review and propose the methodology to **estimate the cost** of these elements

II. Proceedings of the Meeting

Dr Jaouad Mahjour, WHO Assistant Director-General, Emergency Preparedness and International Health Regulations, opened the consultation by emphasizing that preparedness remains a major challenge and that the building of strong and resilient health systems is necessary for health security.

The implementation of the International Health Regulations (IHR, 2005) is a basis of health systems and the indispensable foundation for health security. However, implementation of IHR (2005) alone is not sufficient to ensure health security. There are examples of health systems which score highly on IHR assessments but have struggled with health security issues. Lapses exist in the hospital setting such as a lack of infection prevention and control (IPC) and inadequate procedures for isolation of patients with potentially transmissible infectious disease.

The key question is what countries can do to make their health systems resilient and ensure a good level of health security? The purpose of the consultation is to identify the specific steps countries need to take, in addition to implementing the IHR (2005) requirements, in order to be prepared to detect and contain any outbreak or health emergency situation.

Health systems and health security are "two sides of the same coin" and universal health coverage (UHC) — defined as ensuring all individuals and communities receive the health services they need without financial hardship — provides strong defense against public health risks and threats.

WHO is working with Member States to reach the Sustainable Development Goal (SDG) target of UHC by 2030. However, it takes time for health systems to mature and health security measures are needed to address current threats and risks. A middle way is needed between IHR (2005) and achievement of UHC to fill the gaps and make health systems fit for health security.

Dr Stella Chungong, WHO Chief of Core Capacity Assessment, Monitoring and Evaluation, provided an overview and scope of the consultation. Health systems exist at different stages of maturity and it is important for them to continue strengthening core capacities to detect, prevent and respond to health emergencies. This has been facilitated by the IHR Monitoring and Evaluation Framework (MEF), involving mandatory annual reporting, voluntary external evaluations, After Action Reviews (AAR), and simulation exercises (SimEx). IHR MEF, along with

other assessments such as Performance of Veterinary Services (PVS), inform plan development and systems strengthening.

More, however, is needed, and it is important to identify not just the foundational capacities but the full scope of what is needed for countries to ensure health security. The cost of these critical elements needs to be determined to enable Member States to strengthen health system capacities for health security. The goal is a health systems for health security model that can be shared and discussed with countries and partners, providing a framework that can be built upon for implementation.

The meeting proceeded with technical presentations, working group seminars and plenary discussions.

III. Health Systems for Health Security, A Draft Framework

Dr Nirmal Kandel, Technical Officer, WHO Country Health Emergency Preparedness and IHR Department, introduced for consideration and feedback "*Leveraging Health Systems for Health Security, A Draft Framework."* Outbreaks and other emergencies have challenged health systems across the globe, resulting in high morbidity and mortality and large economic loss. The draft framework is a starting point to discuss what elements are crucial for emergency preparedness thus for health security.

The draft framework proposed for consideration by the expert group designated four preparedness levels reflecting different stages of health system maturity:

1. **Foundational capacity of health security** -- Health systems' public goods such as the minimum core capacities required under the International Health Regulations (IHR, 2005) and basic health structures to prevent, detect and respond to public health emergencies form the foundational capacity for health security

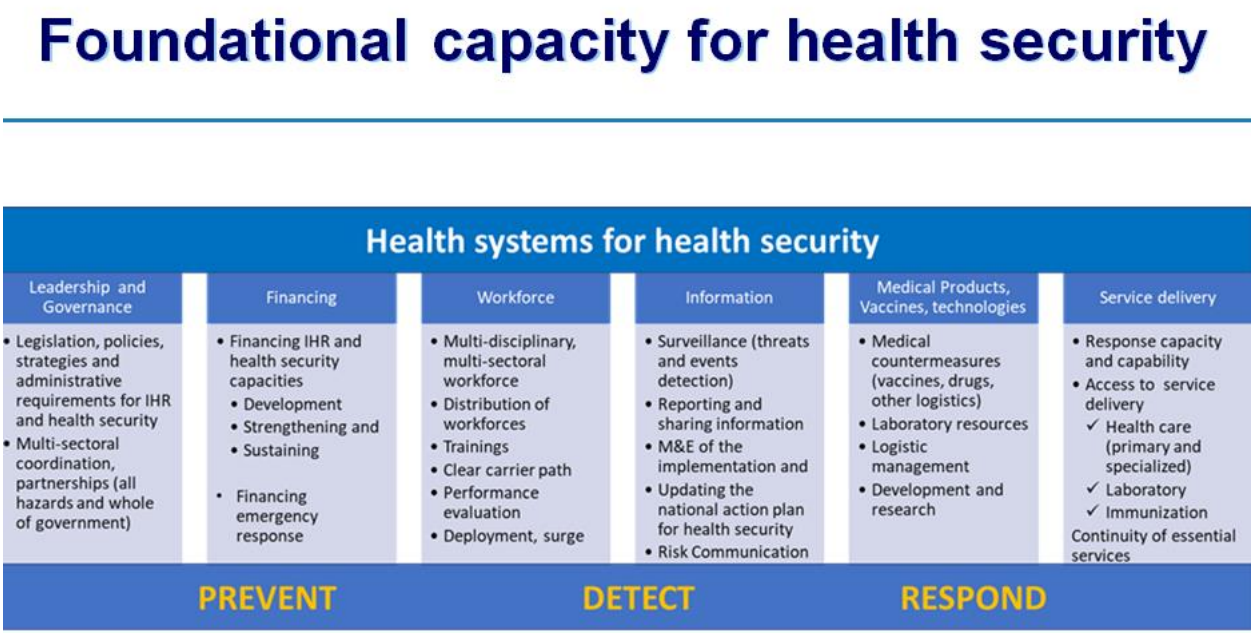

Figure 1: Alignment of the six health system strengthening building blocks with IHR (2005) capacities

2. **Sector wide (health and other sectors) systems for health security --** As health systems advance beyond the foundational capacities, public goods from other sectors (access to safe water, safe housing, land-use planning, emergency services, transportation etc.) contribute directly or indirectly to develop, strengthen and sustain those capacities necessary to reduce the risks and consequences of emergencies.

3. **Health Systems for financial access** -- At this level, the system is mature enough to prevent, detect and respond to threats and emergencies, with timely management of emergencies while minimizing financial barriers to access health services.

4. **Health Systems for Universal Health Coverage (UHC) --** This highest level requires a strong, efficient, well run and responsive health system with sufficient human resource capacities that can prevent, detect and respond to threats and emergencies, and address the social determinants of health, while providing affordable and accessible health services that do not impose a financial hardship.

The experts were asked during the consultation to define the key elements constituting preparedness at different levels of health system maturity while taking into account the health system building blocks, the minimum essential elements needed to provide health security at the local, intermediate, national and supranational levels, and the WHO benchmarks for IHR (2005) capacities.

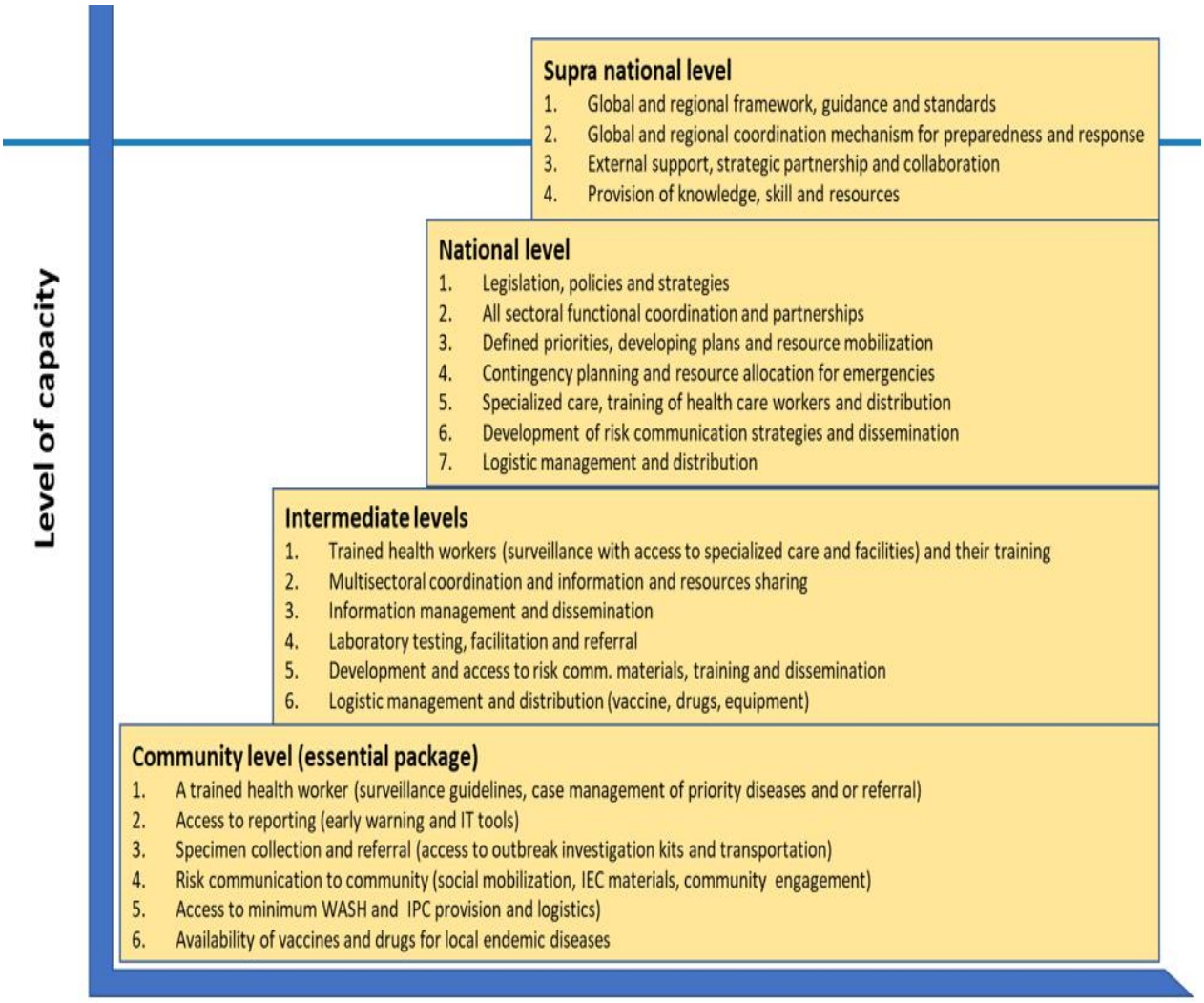

Figure 2: Essential elements in Leveraging Health Systems for Health Security, A Draft Framework

WHO recently published the *Benchmarks for International Health Regulations (IHR) Capacities*, a tool that guides Member States, partners and donors in improving IHR capacities (measured as limited capacity, developed capacity, demonstrated capacity and sustainable capacity). The document lists benchmarks and corresponding actions that can be applied to strengthen the capacities required for the health security through NAPHS.

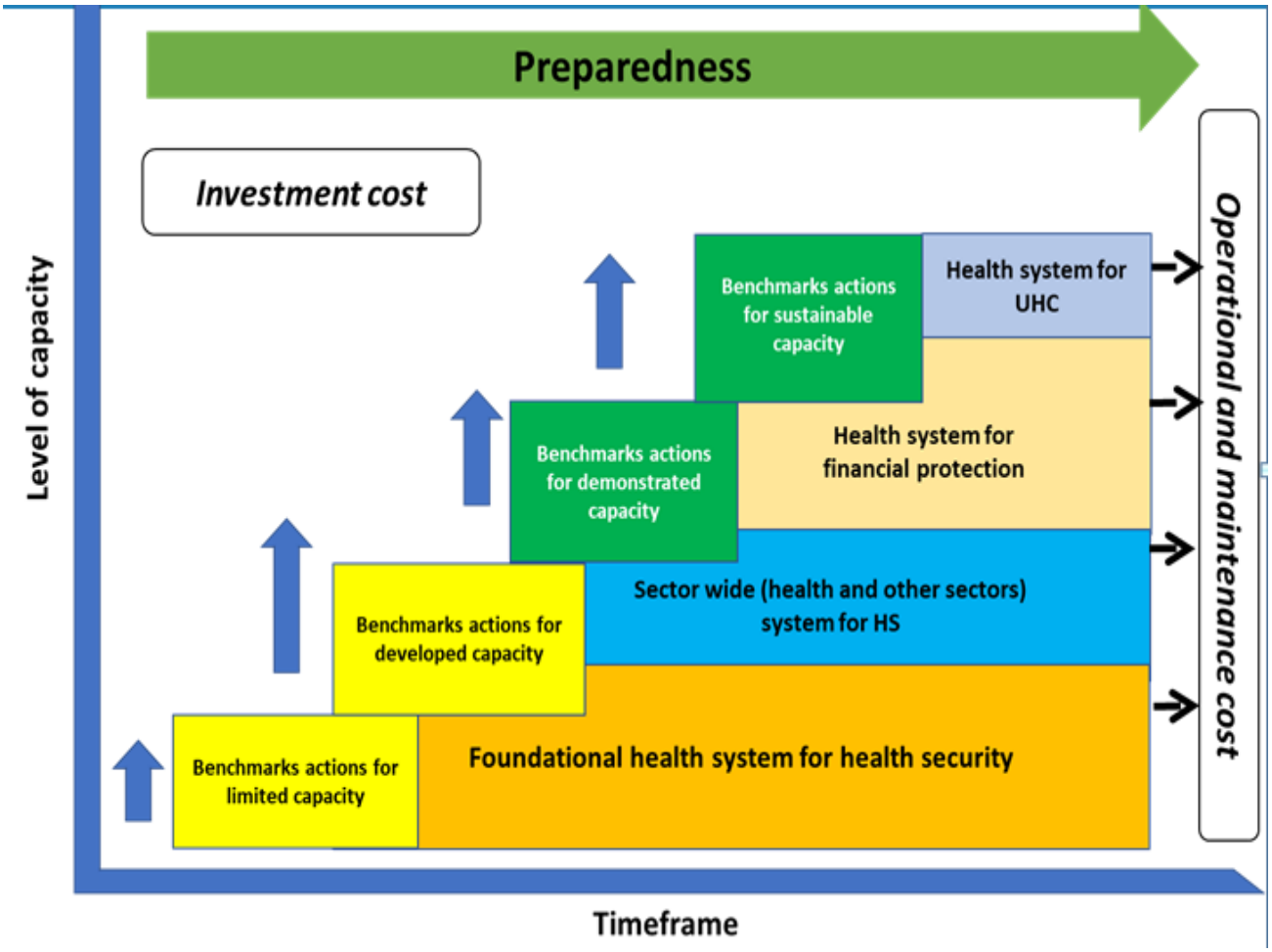

Figure 3: Links between IHR benchmarks and health system maturity in the draft framework

Leveraging Health Systems for Health Security, A Draft Framework linked the IHR benchmark capacities with the four proposed levels of health system maturity. The foundational level, for example, was linked with benchmark actions for limited and some developed IHR capacity. Capacities advance as the system matures, with health system for UHC linked with benchmark actions for sustainable capacity.

IV. Discussions

IV. 1 The Draft Framework

A plenary discussion followed introduction of the draft framework, emphasizing the goal is a framework practical enough to be implemented by even low resource countries, not too complex or costly.

Several experts suggested the draft framework be simplified, and modifications made to the maturity model. Participants questioned the delineation of health systems into four progressive maturity levels from foundational capacity to UHC, suggesting that maturity of health systems is a spectrum — systems tend to be mixed, highly proficient in some areas and challenged in others**.** Participants proposed that, rather than fitting into discrete health system tiers, a country may, for example, have advanced capacities approaching UHC without some foundational health security building blocks in place.

The experts described the consultation as an important opportunity to work on an operational framework with major implications for health planning, and to bring the professional worlds of health systems and health security together. They suggested the draft framework have increased focus on community engagement and governance (organization and administration of services, accountability, etc).

Experts also stressed the importance of communications, both for surveillance and emergency communication with providers. The importance of WASH (water, sanitation and hygiene), community health workforce epidemiological and surveillance capacity, food security and veterinary services was emphasized.

The experts said it will be important to ensure regional, country and community ownership of the health systems for health security process. Discussion included the suggestion that, in addition to the expert group consultation, WHO engage countries and obtain input from community-level health workers and experts.

Participants said that, as agreed by the United Nations and World Health Assembly, UHC and health security are (largely aspirational) outcomes, while health systems are “what we do,” a range of services that change with time and technology. Health systems contribute to UHC and health security, while both are also influenced by other factors. The question is what kind of health system to invest in, and there was a suggestion that security and equity are the first areas to target along the progressive realization of UHC.

IV. 2 Working Group Discussions

Mr Scott Pendergast, WHO Director of Health Emergencies Strategy, Programmes and Partnership, introduced a group work session to define essential elements of health systems for health security. Mr Pendergast emphasized the interrelatedness of the triple billion targets in the 2019-2023 WHO Thirteenth General Programme of Work (GPW 13). GPW 13 calls for one billion more people benefitting from UHC, one billion more people enjoying better health and well-being, and one billion more people protected from health emergencies. Tracer indicators for the target of 1 billion people better protected from health emergencies are IHR States Parties self-assessment Annual Reporting (SPAR), vaccine coverage of at-risk groups for epidemic or pandemic-prone diseases, and timely detection and response to potential health emergencies.

The group work of the consultation is meant to increase understanding of the basic crucial capacities required for health security across three major dimensions — foundational capacities, broader health systems capacities and multisectoral capacities. The core IHR/public health functions for health security are well defined in the IHR (2005) framework, but a country can have all those functions (surveillance, labs etc.) and still be lacking health security if there is, for example, inadequate water and sanitation in the health facilities.

Once the necessary elements for health security are identified, the objective is to develop a methodology to estimate how much it would cost for countries to achieve those elements. There is an existing tool to estimate costs for National Action Plans for Health Security (NAPHS) it only measures the cost of the gaps identified by the various evaluations, which is just a small subset of total investments required for achieving and sustaining health security in a country.

The expert participants were divided into two groups (Group A and B). The groups took different approaches to identifying the essential elements for health security.

Group A

Group A chose to look at three pillars — foundational capacities, health systems, and multisectoral capacities — and define the elements for health security that exist within those pillars. Countries could make investment decisions based their capacities in relation to those elements.

The elements are considered to be inputs, or enablers, that would lead to country implementation activities. Group A defined nine key elements as well as subcategories within each of them.

1. **Governance** (leadership group, preparedness structure, coordination mechanism for cross-sectoral collaboration, secretariat support, operational incident management

structures, monitoring and evaluation framework structure, private sector actors, multisectoral collaboration)

2. **Funding/Resourcing** (sufficient resources – especially during a surge/emergency, pre-determined mechanisms to disburse/mobilise/deploy resources, rapid deployment and access during an emergency)

3. **Workforce** (right-sized workforce quantity with good coverage, quality — training/accreditation, rapid deployment to appropriate areas in an emergency, compensation)

4. **Communication** (internal government communication, communication with external stakeholders, regional and international communication, communication with the private sector, communication with in-country stakeholders, communication with the public, emergency risk communication)

5. **Infrastructure** (physical infrastructure such as health facilities and labs, prevention and protection infrastructure — i.e point of entry, digital technological infrastructure, transportation)

6. **Critical Supplies/Stockpiles** (medical, PPE, diagnostics)

7. **Hygiene/Sanitation** (food, water, electricity)

8. **Applied Research** (information management, strategic and operational risk assessment)

9. **Exercises** (from tabletop to simulation exercises)

In a discussion on Group A's work, expert participants commented on additional aspects for consideration, such as pre-qualification and availability of vaccines, vaccine production capacities in developing countries, community engagement and accessing regional, sub-regional and global capacities.

Group B

Group B took a different approach, choosing to identify which crucial elements are not being captured in the IHR assessments (SPAR and JEE). Group B based its work on consideration of how elements of the health system, and of other sectors, contribute to health security and to UHC.

• **Workforce Capacity** (Training/skills of existing workers are highlighted in IHR (2005) but there is also a need for curriculum development and engagement with the education system in shaping pre-service education; workforce numbers should be adequate to handle an emergency surge)

• **Laboratories** (Lab detection and response is highlighted in IHR (2005) but there should also be consideration of the development of a national lab system with broader capacities, other considerations are transport mechanisms for specimens, workforce, lab facilities, reagents, and mechanisms to send specimens to labs internationally, which can raise customs and trade issues)

• **Surveillance** (integration of indicator-based reporting into country health system)

• **Legislation and financing** (adequacy and fungibility for emergency preparedness is needed)

• **Coordination** (need high level sectoral coordination based on a legal framework — i.e. memorandums of understanding between different ministries — and coordination of international capacity building assistance and humanitarian response)

• **Zoonotic Events** (i.e. surveillance and information systems in the agriculture and livestock sectors need to be considered, as do country PVS capacities and roles in setting up contingency plans)

• **Food Safety** (recall mechanisms and legal frameworks, engagement with private sector, food handling, occupational safety, food outbreak/quarantine authority, AMR in food/livestock industry)

In discussion of Group B's work, expert participants expressed confidence the different approaches of the two groups could be tied together, although there were questions about how well the approaches will translate to costing and the need to identify whether the focus is on infectious disease or broader hazards. Participants agreed the draft framework should avoid a maturity model in which health systems are stratified into different levels through which countries move.

In summary, key issues raised by the working groups include:

- The importance of health workforce capacity. Both the working groups emphasized health workforce education and training, surge capacity and rapid emergency deployment as crucial elements
- The critical role of governance in coordination, multisectoral collaboration, communication (domestic and external) and in ensuring adequate resources are quickly disbursed in an emergency
- The integration of surveillance into country health systems, including indicator-based surveillance from health care providers and zoonotic surveillance from the agriculture and livestock industries
- The essential function of infrastructure inside and outside the health system in contributing elements including digital technological infrastructure, transportation, infrastructure to produce and deliver food, water and electricity, and the health system infrastructure of health facilities and laboratories

V. Revised Draft Framework

WHO used the experts' input to create and present for consideration a revised model of "*Leveraging Health Systems for Health Security, A Draft Framework* The objective of the revision is to simplify the model to allow for country implementation. The revised model is grounded in the WHO benchmarks for IHR (2005) capacities and universal consensus that health security is part of the overall health systems. Many of those IHR benchmarks capture health system components for health security, while some of the benchmarks capture the contribution of sectors other than health (i.e. zoonoses, food safety, chemical hazards).

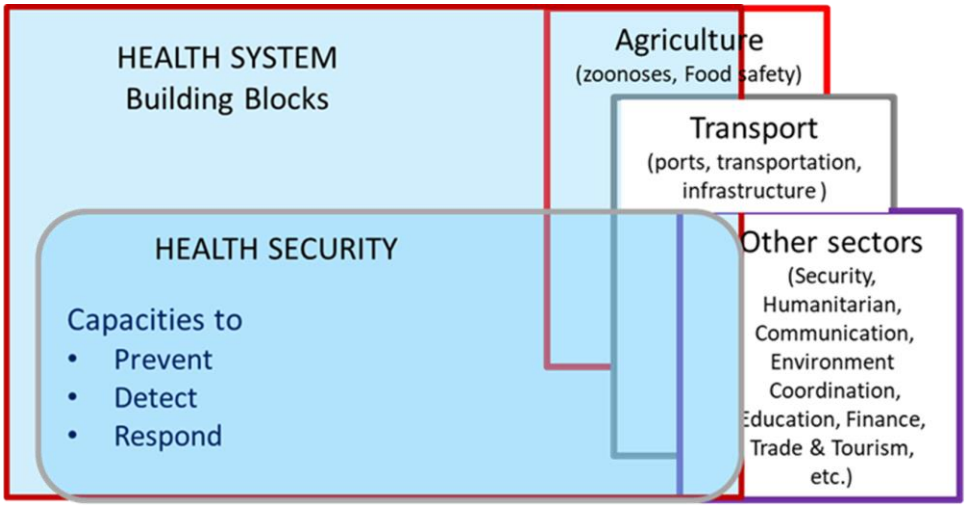

Figure 4: Health and sectorial wide contribution to health security

WHO graphically presented the contribution of health systems and other sectors to health security. All the elements required for health security are part of the health system, with additional contribution from other sectors as well.

The proposed model maps the WHO benchmarks for IHR capacities against different levels of health system capacities. Health security elements not captured in the benchmarks would be defined and added to the model. The model would identify actions (elements) that countries can take to achieve each benchmark. Infection Prevention and Control (IPC) is an example of how the revised framework might work.

The model would show that, at the basic, limited capacity, the country would have an ad hoc hospital mechanism for IPC assessment and review, and the health system would have an IPC committee and guidelines for assessment and review. Other sectors would contribute through safe water supply and ad hoc farm IPC.

The benchmark for advancing to developed capacity would be an IPC committee and action plan implemented at the national level, linked with health system development of a training

package and national-level IPC pillars in place. Other sectors would provide national-level access to WASH facilities and farm adoption of IPC strategies. As the capacities progress to demonstrated and sustainable, benchmarks would include implementation of IPC plans at sub-national levels with demonstrated effectiveness. The model also identifies the necessary cross-cutting functional elements for IPC such as governance, communication, coordination, and monitoring and evaluation. A country could use the model to determine the benchmarks for which it has limited capacity, and the benchmarks for which it has developed, demonstrated and sustainable capacities. Accompanying costing methodology would estimate the costs of strengthening capacities.

	IHR Benchmarks	Health Systems	Other sectors	Functional elements
Limited capacity	Ad hoc mechanism for IPC Assessment/review for selected hospital for IHR hazards	IPC committee, guidelines Assessment/review for selected hospital	Provision of safe water Ad hoc IPC for farm	Governance Coordination Communication Infrastructure Resources M&E (exercise) R&D Workforce
Developed capacity	IPC committee and action plan addressed the IHR hazards at the national level	Develop and implement an action plan at the national level Develop guideline and training package, Ensure IPC pillars in place at the national level	Access to WASH facilities at the national level hospitals/farms IPC at selected farms	
Demonstrated capacity	IPC committee and action plan addressed the IHR hazards at the sub-national level	Implement action plan at the sub-national level Disseminate IPC guideline at the sub-national level	Access to WASH facilities at all levels IPC at the sub-national level farms	
Sustainable capacity	Demonstrate the effectiveness of measure	Effective IPC coverage nationwide	Effective coverage of WASH Effective coverage nationwide farms	

Figure 5: Example of IPC benchmarks and capacities in revised model of "Leveraging Health Systems for Health Security, A Draft Framework"

Experts suggested the framework be further simplified for use as a practical checklist for countries to determine what actions to take. Participants said IPC is a good example of an issue needing greater attention and which could be elevated through such a framework.

Some experts suggested the final product be presented as more of a tool than a framework, maintaining the focus on providing guidance to countries in how to estimate costs of health systems for health security. Such a tool would facilitate assessment of the current state of country capacities, identification of gaps and major issues, setting of priorities and implementation of actions.

VI. Financing and costing health systems for health security

Dr Agnes Soucat presented on financial aspects of health systems for health security. The definition of UHC includes *access* (all people are able to use needed health services — including prevention, promotion, treatment, rehabilitation, and palliation — of sufficient quality to be effective) as well as *financial protection* (the use of these services does not expose the user to financial hardship). However, for health security the relevant concern is *financial access* to use of health services. Financial and other barriers have implications for both health security and UHC.

Costing information and monitoring is needed to determine whether financial access exists, and different approaches for doing so need to be reconciled. Expenditure tracking is challenged by the fact that there are sub-accounts for immunization, HIV, reproductive health, etc., but not for health security. So there is no knowledge on a regular, institutionalized basis of how much is spent on health security. That can be addressed with a well-structured data system and accounting structure, but what is missing is a definition of the common health system functions that need to be funded to address the public goods and common goods aspects of health that contribute to health security. Also neededis delineation of which essential functions for health security are within the health system and which are outside, and mechanisms to determine costs and to monitor.

There are also health security constraints other than financial, as evidenced by outbreaks in high-resource countries. Those include governance constraints beyond the IHR (2005) core capacities (i.e. institutions, organizations, reforms, strategic planning, citizens' voice, accountability and politics). At times the issue is more about spending prioritization than lack of resources, and there are also examples of high-resource countries that struggle with health funding as a result of low taxation capacity.

Discussion included the suggestion that there could be engagement on such governance issues with institutions such as the Inter-Parliamentary Union, with whom WHO has a memorandum of understanding to collaborate. Participants saidfinancing for health security is a fundamental responsibility of governments and needs to be a part of health budgeting. It is necessary to understand the process of national health budgeting, and as ministries of health are sometimes not entirely responsible for health security financing, national-level mapping of the routes public financing takes for health security is important.

Experts also suggested that prioritization of expensive health security projects, such as complex labs, may need to be reconsidered if there is a lack of primary level facilities with community health workers.

VI. 1 Expenditure tracking for health security

Dr Joseph Kutzin, WHO coordinator for health financing policy, gave a presentation on expenditure tracking. When considering financing to achieve the outcome of health security, there needs to be tracking of the health system expenditures for health security, and of other sectors' expenditures for health security. Many countries have National Health Accounts (NHA) and non-health security expenditures could be subtracted from the NHA, but that requires an agreed definition of which NHA components are for health security. There is also the need to determine which non-health system expenditures are for health security. Since they are not part of the NHA, a separate data collection exercise is needed.

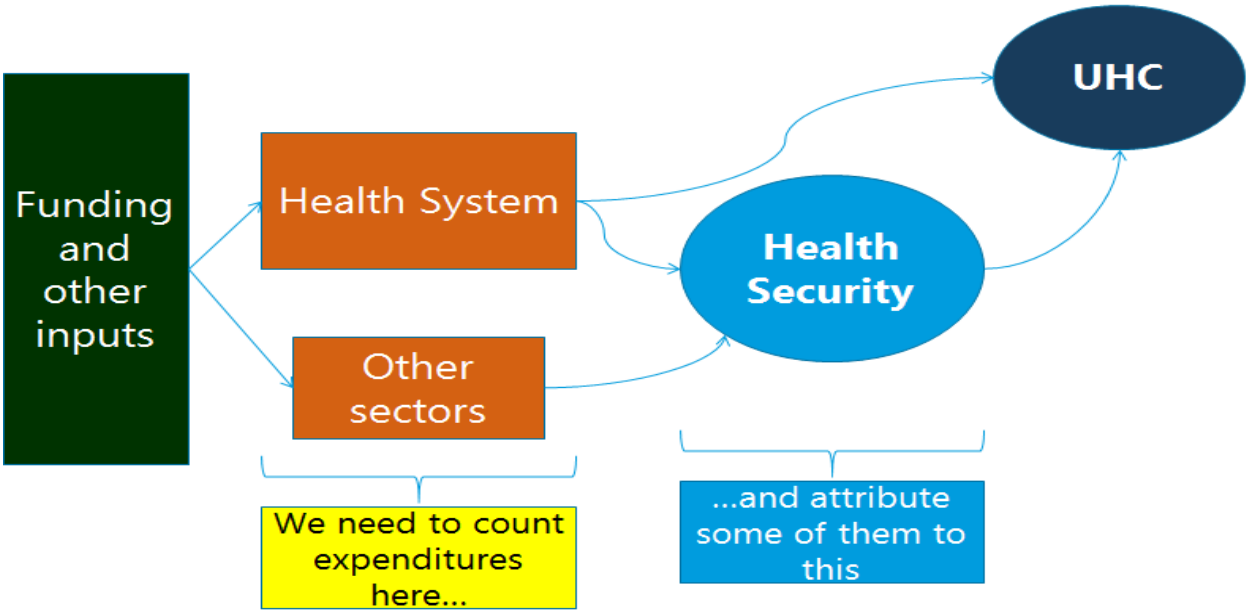

Figure 6: Framework for health systems for health security expenditure tracking

Participants noted a challenge in separating health security expenditures from the overall health system is that expenditures (health facilities, labs, etc.) often have other purposes and benefits for the broader health system. For example, the time of a health worker will benefit both health security and the overall health system. Discussion included the suggestion that, for the purposes of advocacy, there also needs to be good examples (i.e. IPC) of the costs of inaction.

Progress has been made on health security expenditure tracking through the Health Security Financing Assessment (HSFA) piloted last year in Vietnam.

Mr Netsanet Workie, Senior Health Economist, World Bank, gave a presentation on the Vietnam HSFA and noted there is a similar process currently underway in Indonesia and plans for studies in Cambodia, Laos and Myanmar. The objectives of the HFSA are to establish a baseline with a good understanding of how much is being spent, who is paying for it, and where

it is invested. Countries that want to increase health security capacity (for example increasing their JEE score from 2 to 3) need additional investment, and the case for such investment is stronger if there is documentation of what is being spent and where.
The HSFA found overall health expenditure in Vietnam of $126 per capita, representing 6 percent of gross domestic product (GDP). The portion for health security was far smaller[2].
The HSFA estimated that in 2016 Vietnam spent $181 million on health security — just $1.94 per capita. That is 0.09 percent of Vietnam's GDP and 0.29 percent of total government expenditures. A key message is that because much of the needed expenditures are already covered in the general health system the additional amount to top up for health security is relatively small.

More than 80 percent of the health security spending came from the government rather than external aid, and as there were no major outbreaks in 2016, the spending was all on preparedness. The HSFA was described as the first comprehensive systematic exercise that has attempted to track what is being spent on health security, providing the kind of evidence needed to advocate for additional domestic and external resources.

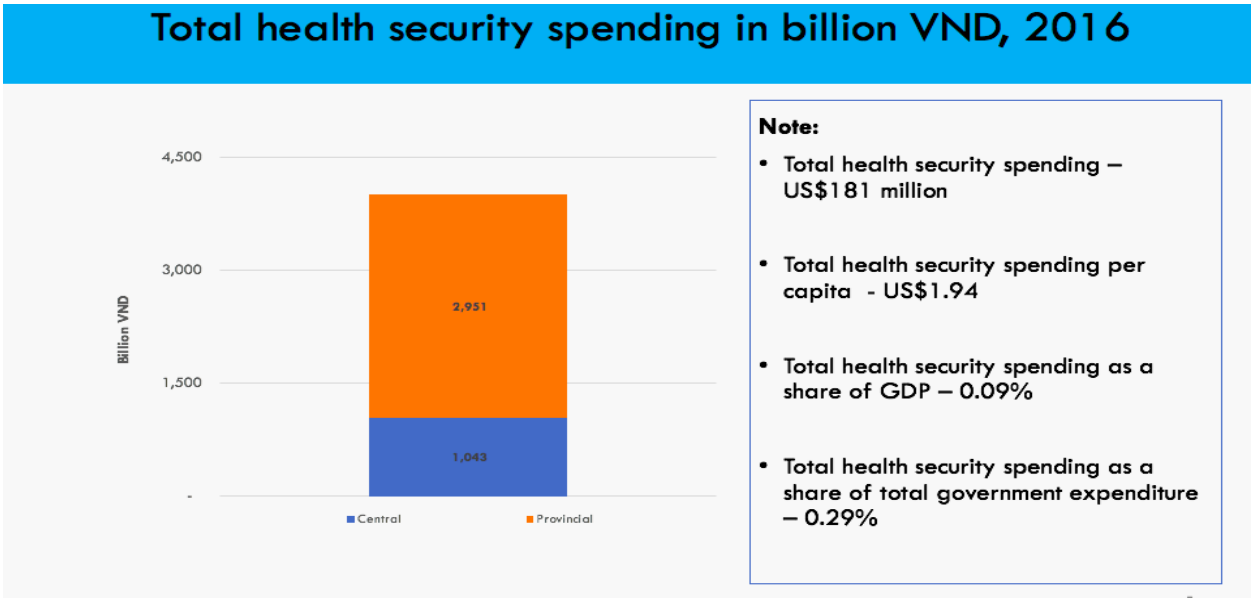

Figure 7: Health security spending in Vietnam as estimated in the HSFA

The Vietnam HSFA exercise had challenges, starting with the lack of clear definition of what constitutes health security activities. The exercise took eight months at a data collection cost $200,000. Financial statements in Vietnam cannot be accessed electronically and all 63 provinces were visited, with permission needed from the prime minister to conduct the exercise.

[2] Activities specific to and focused only on health security were fully attributed as health security expenditures in the Vietnam HSFA, while activities considered "health security sensitive" were partly attributed as health security expenditures using proxy indicators or expert opinion. Activities that are broad in nature and related to major health systems strengthening were excluded from being attributed as health security expenditures in the HSFA.

Vietnam provides just the first sample and doing the HFSA in additional countries will provide further refinement of the methodology and facilitate creation of a broader framework.

Dr Michael Borowitz, Chief Economist at the Global Fund, gave a presentation covering expenditure tracking and the work of the Global Fund, calling it a good approach to use the national health account framework and incorporate health security. The Global Fund has been working with WHO on tracking national health accounts in areas such as AIDS, TB and malaria, and would be interested, along with partners, in working on a standardized approach for health security expenditures. The Global Fund, which spends some $300 million on health security, is also working on resource tracking — given how much is being spent on labs, for example, what are the outcomes? Spending is not just about quantity but also about ensuring quality.

Expert participants said it is important to continue working on expenditure tracking, both to validate notions of cost and demonstrate the cost-effectiveness argument that is necessary both for claiming public dollars and making the argument for external investment. As steps are increasingly being taken to benchmark what health security activities require investment it is crucial to know the baseline of existing expenditures in order to cost the incremental expense of increasing capacity.

The expert participants also emphasized the need to be specific on definitions and terms and clear on categories of expenditures.

Key issues and takeaways from the session included:

- Costing and monitoring of health systems for health security will require identification of the common health system functions that contribute to health security, as well as characterization of which essential functions for health security are within the health system and which are outside of it.
- National Health Accounts can be built upon to play a key role in health security expenditure monitoring. NHA systems include functional classification by health care activity type through which it has now become possible to make comparable estimates of country spending on Primary Health Care.
- Following a similar approach as NHA for necessary health security functions would be a practical step to setting up country level expenditure monitoring on a standardized basis. For necessary multi-sectoral expenditures and investments not covered by NHA, a separate data collection exercise is needed.
- Health Security can be affordable, as illustrated by the HSFA assessment in Vietnam that estimated just $1.94 per capita
- There is need to do more in-depth studies like the HSFA assessment in Vietnam, as a single study in one country is not enough to give a full sense of the health security costs and additional work will refine the framework
- Expenditure tracking and costing is critical for country planning as well as for advocacy, to make the investment case to a minister of finance or to external partners to strengthen health security capacities

VI. 2 Costing methodology for health security

A limitation of the HSFA assessment is its focus on past expenditures. Costing requires an assessment of future expenditures. Estimating the costs for implementing health systems for health security will need to consider the costs of meeting IHR (2005) requirements, the costs of health sector contributions to health security, and costs of health security contributions from other sectors.

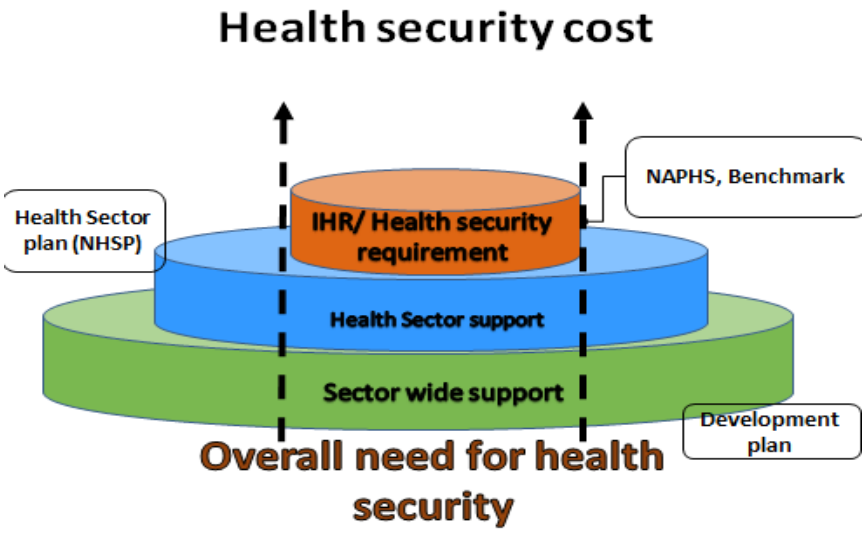

Figure 8: Costing of needed elements for health security

Glenn Lolong, technical officer, WHO Strategic Partnership for IHR and Health Security (SPH), proposed a methodology for estimating health security costs that combines the NAPHS costing tool, the One Health costing tool, and elements from the World Bank HSFA case study in Vietnam.

Through modifications of these existing tools, the costing of health systems for health security could be accomplished without the need to create an entirely new methodology. Mr Lolong described each of the proposed components of and their roles in the proposed methodology.

NAPHS costing tool: Costing and resource mapping are key aspects of the NAPHS development framework. WHO supports countries with the Excel-based costing tool that costs the lists of activities (i.e. training, additional human resources, construction/infrastructure, procurement) based on the unit price under the national policy for budgeting. The tool is built to be simple, flexible and accommodate the national context. WHO also supports countries in resource mapping and data visualization, which links country needs and priorities to resources, aligns existing plans and recommendations and provides better visibility of resources to facilitate resource mobilization. The NAPHS costing tool would cost the IHR (2005) requirements for health security, while the countries could use resource mapping to mobilize resources for implementation.

One Health costing tool: The One Health costing tool is used to cost national strategic health plans and policies. The tool focuses on functions (i.e. infrastructure, governance human resources, supply chain, health information). The tool has been used in more than 40 countries, primarily in sub-Saharan Africa. The One Health tool would cost the health system contributions to health security.

Elements from World Bank HSFA case study: The World Bank case study in Vietnam identified and costed elements beyond the health sector. These elements can be incorporated into an approach for costing the broader sector wide contribution of essential elements for the health security.

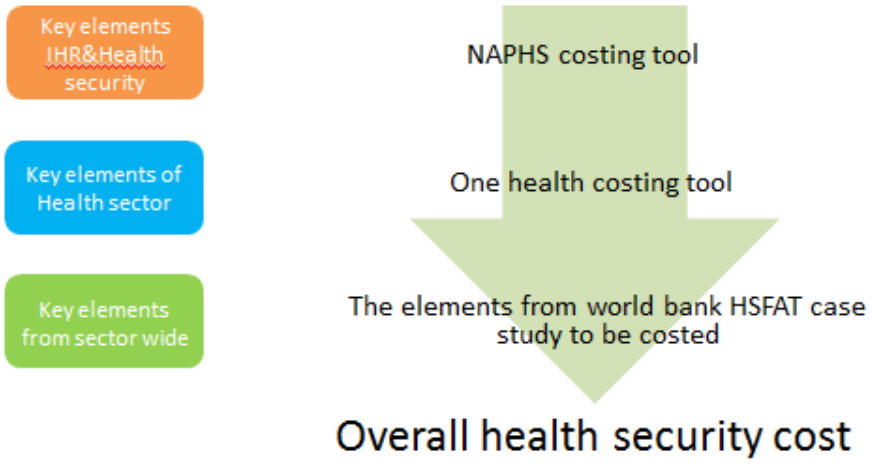

Figure 9: Costing of needed elements for health security

Expert participants noted following the presentation that costing can be done at multiple different intensities and levels and specificities, and accuracy, and there needs to be decisions on how much effort and granular detail is needed to obtain estimate that are fit for the purpose.

- Key issues and takeaways from the session included: There is no need to create new costing methodology, rather combine the different costing components that exist (NAPHS costing tool, One Health costing tool, Elements from World Bank HFSA study) that can be adapted and synthesized for costing health systems for health security.
- As no new methodology on costing health security is deemed to be required, the focus should be on monitoring the implementation of health security activities as well as identifying the exiting activities that is contribute health security. This monitoring data can be used to inform the needs and gaps to ensure health security including the associated cost
- WHO should work with partners such as the Global Fund, World Bank and others to further review and improve the methodology on estimating the cost of health security

VII. Group Work 2: Essential Elements for Health Security

Expert participants were again divided into two groups to continue their work defining the essential elements to be costed. As on the first day of the consultation, two groups took different approaches.

Group A

Group A listed capacities for health security at societal levels from community to supranational, focusing on the highest priorities. Delineating essential elements at such levels is especially important because, while many capacities needed for health security are available in countries, they can be limited outside the capital city or major urban areas. Rural and border areas can be particularly vulnerable to health emergencies and among the challenges for developing countries is scaling health security capacities and distributing them at the subnational and community level.

Community Level – The community level revolves around having health workers in the community able to perform functions such as intelligence, community surveillance, basic case management and vaccinations. The trained health worker is key for health security at the community level.

Intermediate Level – There needs to be a specialized health care facility with a lab, and a need for coordination and surveillance to support the community. This is the bridge between the national and community level.

National Level – The national level requires governance, leadership, coordination, surge capacity, and capacity to deploy to the community level. Financing is critical at the national level. The national level also acts as a bridge with other countries and the international community, a role that can involve coordination of external support.

Supranational Level – This is the international community level, where priorities include guidance and frameworks, international cooperation (i.e. vaccine development, information sharing, research and development)

Group A also emphasized that the product being developed through the consultation would benefit from country case studies, as it is a complex discussion and examples would help communities and countries. Group A suggested the final product be more of a tool than a framework, with the objective of providing guidance to countries in how to estimate costs of health systems for health security. The tool would facilitate assessment of the current state of

country capacities, identification of gaps and major issues, setting of priorities and implementation of actions. The need to ensure information and communications technology (ICT) was also stressed.

Group B

Group B looked in detail at what parts of the health care system at different levels are necessary for health security.

Community Level – There is a need for health care workers at each of the lowest administrative units to deliver basic health care services. Group B delineated two sub-levels, at one of which there are no facilities, just volunteers in the community, and the other of which has some facilities with workers that don't necessarily have formal complex training but are part of the employment system and can provide functions such as basic triage, essential services, specimen collection, and referral of patients.

Health Center Level – This level needs to have outpatient care, some staff able to handle slightly more complex case management, reporting tools to record health information, plans for patient transfer, and the ability to transport specimens. This is the first level where there is temporary isolation space. The entirety of the facility and the capacities within it are considered necessary for health security.

Above the health center level are facilities whose functions are only partly necessary for health security and could include activities that reach toward UHC. These are slightly more complex facilities that do basic inpatient care, have more permanent isolation space and basic lab capacity.

Group B said there needs to be some secondary hospitals and at least one tertiary-level hospital, with a health security function of those hospitals being the ability to manage complex cases such as Ebola. These facilities will have complex staff, equipment and specialties.

Besides the facilities themselves there is a need for pre-service training and continuing training in surveillance, reporting, IPC etc. Supply chain management and distribution, a health financing system, a health resource management system and a health resource logistics system is also needed. There is also a ministry of health or equivalent, possibly a public health institute, policies, strategies, planning and legislation. This represents the formal health care system and its functions are a priority for national governments, *they exist to deliver basic health care for the citizens and — as they do so — they will also deliver health security. If they don't exist then health security is not ensured.*

Group B also described the necessary linkage between the health care system and surveillance systems, including community surveillance, state epidemiologists, state surveillance, and outbreak investigation and response.

In summary, key issues raised by the working groups include:

- An essential element for health security at the community level is having health workers that are capable of providing essential services, triage, patient referral as well as community surveillance
- Health infrastructure elements for health security at more intermediate levels include specialized care facilities, functional laboratory systems with the ability to transport specimens and isolation space. The national level must include the elements of a health financing system, supply chain management, a health resource logistics system, specialized training and education, and a ministry of health or equivalent, in order to deliver the health care services needed for health security
- Functional and responsive health systems are critical to prevent, prepare for, detect and respond to public health threats and events for health security. Health security relies on resilient national health systems that can absorb disruption, adapt and respond to the evolving needs and contexts created by public health emergencies
- The discussion on health systems for health security is complex and it is important to ensure that it is illustrated in a practical and understandable way for communities and countries. Case studies would be helpful in this regard.

VIII. Outcomes of the Consultation

Dr Stella Chungong provided a summary of the outcomes of the consultation. Expert participants agreed that a responsive health system is the basis for health security, while the role of other sectors is vital as well and multisectoral coordination is needed. Mapping of existing frameworks (Essential Public Health Functions, disease control priorities, WHO benchmarks for IHR capacities, etc.) can help in further defining the needed elements of health systems for health security. The WHO IHR benchmarks capture health system components and the contribution of other sectors such as zoonoses, food safety but needed capacities beyond IHR (with WASH and the need for IPC as an example) need to be defined.

The consultation highlighted the importance of agreement on key definitions and outcomes. A term like public goods, for example, can mean something different to public health professionals and economists, and harmonization is needed for the health systems for health security process,

Key elements flagged during the consultation include the role of the health workforce, the importance of surge capacity, ICT, WASH, transportation, and fundamentals such as electricity that go beyond health.

WHO and partners can build on the initial key elements identified by the consultation participants to move forward on a model that can guide countries in assessing gaps and needs, setting priorities and estimating costs.
The consultation demonstrated the need for expenditure tracking that provides knowledge on a regular, institutionalized basis of how much is spent on health security. Expenditure tracking validates notions of cost and is needed to demonstrate the cost-effectiveness argument that is vital in claiming public dollars and making the argument for external investment.

National Health Accounts can be built upon to play a key role in expenditure monitoring. NHA systems include functional classification by health care activity type through which it has become possible to make comparable estimates of country spending on Primary Health Care. Following a similar approach for necessary health security functions would be a relatively straightforward and practical step to setting up country level expenditure monitoring on a regular, institutionalized basis.

For necessary multi-sectoral expenditures and investments not covered by NHA, a separate data collection exercise is needed.

The World Bank HSFA in Vietnam provided a key lesson that health security does not have to be costly. Studies in other countries, however, are needed to obtain additional data and refine the methodology.

Consultation Outcomes

1. **Agreement reached** that achieving health security requires a responsive and resilient health system
2. **Initial key elements defined** for health systems for health security
3. **Contributions made** to revision of draft framework for leverage health systems for health security
4. **Path forward identified** on expenditure tracking and estimating the cost of health

WHO, in collaboration with partners, will further develop and refine "*Leveraging Health Systems for Health Security, A Draft Framework"* with input from the consultation. WHO benchmarks for IHR capacities will be mapped against the different levels of health system capacities, elements not captured in the benchmarks will be defined and added to the model, and priority actions to achieve each benchmark will be identified. Case studies from countries and institutions will be gathered and further costing studies conducted, drawing on lessons learned from the World Bank experience in Vietnam. The objective is a practical methodology to support countries in building responsive health systems able to deliver essential services for health security.

The costing methodology, involving a combination of the NAPHS costing tool, the One Health costing tool, and elements from the HSFA case study should be further reviewed and improved by WHO in collaboration with partners such as the Global Fund and World Bankl. WHO will work to communicate the value of the health systems for health security approach to countries, partners and donors, and will engage with parliamentarians, particularly on governance issues.

Agreed Next Steps

- Revise draft framework for implementation
- Refine costing methodology
- Support continued costing studies as a follow-up to Vietnam case study
- Communicate value of Health Systems for Health Security approach to countries, partners and donors

IX. Closing Remarks

Dr Mike Ryan, Executive Director, WHO Health Emergencies Programme, gave closing remarks in which he described the consultation as a major step forward, while also emphasizing the need for significant and rapid progress toward the goals of health systems for health security. There is a collision of health emergencies, weak public health and weak health systems in fragile and conflict-affected states, and a proliferation of nosocomial outbreaks even in sophisticated health systems.

> *There is no health security without safe and resilient health systems* – Dr Mike Ryan, Executive Director, WHO Health Emergencies Programme

Concrete objectives are needed in specific areas for health systems experts and health security experts to begin demonstrating that the two sectors can mutually support the delivery of a better health system that provides enhanced health security. Key system elements include governance, finance, workforce, supply chains, scalability and surge capacity — and trust is vital. The health system begins with the community and community participation and ownership is crucial.

An epidemic tests whether the community trusts the health system, if the government has good system for paying its health workers, if the system is immediately responsive, and if the health system is safe.

Fragile and conflict-affected states are at particular risk, and there is a critical need to determine what kind of essential health service package can be delivered in an environment of weak governance, rampant corruption, volatile security, limited access and traumatized populations.

The focus of health security tends to be on high impact epidemics and emerging diseases, but health facilities themselves present an enormous risk, as evidenced by the proliferation of nosocomial outbreaks. Dr Ryan said IPC is an urgent issue for health systems and health security and quick action is needed. He that, in addition to advocacy and the creation of a broader framework, health systems for health security can be driven through first focusing on a few implementable projects.

Dr Jaouad Mahjour closed the consultation, thanking the experts for their participation and contribution toward a product that is simple but not simplistic, can be built upon, and is affordable and implementable even for low resource countries. Dr Mahjour said WHO would continue to connect and interact with the participants for their input into health systems for health security.

Annex 1: Agenda

Day 1: 6 March (Wednesday)		
Time	**Topics**	**Facilitator/Moderator**
08:30-09:00	Registration	All
09:00-09:30	**Opening** • Opening and welcome remarks • Overview and scope of the consultation • Introduction	Moderator: Dr S Chungong, Chief, CME Dr J Mahjour, Director CPI Participants
09:30-10:00	Health system for health security: Draft Framework	Moderator: Dr J Mahjour Presentation N Kandel, Technical Officer, CPI
10 :00-10 :30	**Group photograph and coffee break**	
10:30-12:00	Group work Introduction Group Work 1: Defining foundational capacity (2 groups)	S Pendergast, Director, SPP Group Work Facilitators Group A: V Lee and B Lane Group B: R Andhraghetti and G Schmets S Cockerham/ tbc
12:00-13:00	Group Work 2: Defining sector wide system (health and other sectors) for health security (2 groups)	Group Work Facilitators Group A: Z Mirza and S Rocque Group B: J Pinto and Odd Hansen S Cockerham/ tbc
13:00-14:00	**Lunch Break**	
14:00 -15:30	Group Work 2 Continues: Defining sector wide system (health and other sectors) for health security (2 groups)	Same as above
15:30-16:00	**Coffee Break**	
16:00 -17:00	Plenary presentations and discussions Group 1 and Group 2	Moderator S Pendergast, Director, Strategic Planning
Day 2 - 7 March (Thursday)		
09:00-09:15	Recap of the Day 1	Rapporteur
09:15-09:45	Defining key elements (parameters) of financial protection and universal health coverage for health security	Dr A Soucat
09:45-10:15	Health security financing assessment: emerging lessons from East Asia and discussion towards standardized expenditure tracking approach	Panel Discussion – WHO (J Kutzin), WB (N Workie), GF (M Borowitz)
10:15-10:45	**Coffee break**	
10:45-12:00	Group 3: Health system for health security for financial protection	Group Work Facilitators Group A: Siripen and R Andraghetti Group B: Nestanet and V Lee

		S Cockerham/tbc
12:00-13:00	Group 4: Health system for health security for universal health coverage (2 groups)	Group Work Facilitators Group A: T Palu and J Kutzin Group B: S Pendergast and Z Mirza S Cockerham/ tbc
13:00 -14:00	**Lunch Break**	
14:00-15:00	Plenary presentation Group 3 & 4 (Q&A)	Moderation: A Soucat Presentation: G Lolong
15:00-15:30	Costing methodology for health security	
15:30-16:00	**Coffee Break**	
16:00-16:45	Draft consensus model for health systems for health security	Dr S Chungong
16:45-17:00	Way forward and closing	Dr J Mahjour

Annex 2: List of Participants

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Office of the Executive Director

Dr Agnes Soucat
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Ms Ann Moen
Chief, Influenza Preparedness and Response

Dr Reinhilde Van De Weerdt
Chief, Fragile, Crises & Vulnerable Settings

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Mr Richard Gregory
Senior Health Adviser, International Health Partnership

Dr Benjamin Lane
Health System Adviser, Health System Governance, Policy and Aid Effectiveness

Dr Nirmal Kandel
Technical Officer, Core Capacity Assessment, Monitoring and Evaluation

Mr Gerard Schmets
Coordinator, Health System Governance, Policy and Aid Effectiveness

Mr Ludy Suryantoro
Team Lead, Strategic Partnership IHR and Health Security

Mr Glenn Lolong
Technical Officer, Strategic Partnership for IHR and Health Security