GLOBAL® LEARNING COLLABORATIVE FOR HEALTH SYSTEMS RESILIENCE

The GLC4HSR's ANNUAL CONCLAVE 2024 March 11-12, 2024, Singapore

Conclave Report

A COMPENDIUM OF **DIALOGUES** AND **INSIGHTS**

ACCESS health international

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Day 1

Keynote Address

Dr. Uma Aysola, Director (Global), Communications and Partner Engagement at ACCESS Health International, delivered the welcome address, setting the stage for the conference.

Dr. N. Krishna Reddy, CEO, ACCESS Health International, provided an overview of the importance of learning from history and build back stronger. He noted the importance of bringing in new dialogues and topics to address emerging challenges as the world changes. He also highlighted the importance of collaboration for resilience particularly in terms of health system strengthening and universal health coverage. When it comes to health systems, it is imperative to put people at the center which in turn determines the health system's response to their needs. Beyond centering people, he acknowledged the importance of environmental factors in impacting human health. Dr. Reddy brought in the One Health concept and the intertwined nature between people's health, animal health and the planet's health. He focused on how health and social systems are integrated as and highlighted how relations between the public and private sector affects the resilience of a health system. He expressed hope that through the conclave, participants can better assess the health system through a holistic lens, determine the needs of patients and what changes can be made to address them.

Keynote Presentation

Comprehensive Approach to Strengthening

Dr Sohel Saikat, Senior Advisor & Lead, Health System Resilience and Essential Public Health Functions (EPHFs), Special Programme on Primary Health Care, UHL WHO gave a

keynote presentation that defined resilience and how different factors play a role in system resilience and in ensuring that the health system is all-encompassing. He highlighted that there is fragmented and inadequate support to strengthen systems and there is a need for better integration and alignment of existing efforts to advance universal health coverage and health security.

Currently, prevailing gaps exist when it comes to applying an integrated approach to health system strengthening in policymaking, planning, resource allocation, service delivery etc. These gaps exist due to chronic under-investment and under-prioritization of public health where health prevention and health promotion have been compromised due to the focus on hospital services.

Dr Sohel defined health systems resilience as the ability to forecast, prevent, prepare for, and respond to emergencies, sustain the provision of essential health services during shock events and recover while learning and improving based on experience. He emphasized that there cannot be an assumption that a health system is automatically resilient unless each building block is scrutinized and there is coordinated systemwide and multisectoral collaboration. He noted that practical interconnected steps to operationalize health system resilience with integrated, sustained, progressive investments and actions should be applicable or adaptable to diverse contexts across high to low-income settings.

He also noted that there should be a shared responsibility between all stakeholders within and between health and other sectors and that when it comes to resilience-focused system strengthening, there should be a comprehensive approach to public health that involves systematic capture and application of lessons through monitoring & evaluation processes.

Health systems resilience requires scrutinizing each building block and ensuring coordinated systemwide and multisectoral collaboration. Practical, interconnected steps for operationalizing health system resilience must involve integrated, sustained, and progressive investments and actions adaptable to diverse contexts. Shared responsibility among all stakeholders within and between health and other sectors is essential. A comprehensive public health approach, with systematic capture and application of lessons through monitoring and evaluation, is crucial for resilience-focused system strengthening.

Health System Resilience Assessment: Evaluating Countries' Preparedness – *Insights from UAE And India*

Moderator:

Mr. Maulik Chokshi
Deputy Country Director (Technical),
ACCESS Health International

Panelists:

Dr. Sohel Saikat
Technical Lead, Health Systems Resilience,
WHO Headquarters, Geneva

Dr. Hossain Zillur Rahman *(Virtual)*
Executive Chairman,
Power and Participation Research Center

Ms. Jieun Lee *(Virtual)*
Senior Health Advisor, World Vision UK

Dr. Rajib Sen
Senior Advisor,
NITI Aayog, Government of India

Thematic Co-ordinator:

Dr. Anuradha Katyal
Technical Head (Research & Data Analytics),
ACCESS Health International

Presentations:

Dr. Anuradha Katyal
(Thematic Presentation) -
Health Systems Resilience Assessment: The Journey so far

Ms. Jieun Lee
Health Systems Strengthening in Fragile and Conflict-Affected Situations

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Context:

The Health System Resilience pilot study is not merely to enable health systems to withstand emerging health threats but to thrive in the face of adversity. To ensure the effectiveness and relevance of the health system assessment and health system resilience assessment indicators developed by the GLC4SHR team, pilot studies were conducted in India and the UAE. The session was dedicated to presenting the insightful findings derived from the pilot study conducted in these two distinct countries.

By subjecting the health system assessment and health system resilience assessment indicators to real-world scenarios in India and the UAE, GLC4HSR aimed to validate their applicability across varied health systems. This robust testing process involved evaluating the indicators against the unique challenges, dynamics, and intricacies present in each country's healthcare landscape.

During this session, discussions delved into a detailed analysis of the outcomes, shedding light on the nuances observed in the application of GLC4HSR's indicators within the specific contexts of India and the UAE. These findings not only contribute to the refinement of GLC4HSR's indicators but also offer valuable insights into tailoring health system resilience strategies to meet the diverse needs of different countries.

Presentation of the country assessment pilot:

- **Unveiling Key Insights:** The pilot study unravels the key findings stemming from the assessment of India and the UAE. It extends beyond a mere presentation of results, delving into a comparative analysis of how nations with distinct socio-economic statuses respond to various health system parameters. Commencing with a comprehensive overview of the health systems assessment for both nations, our approach extends to the subsequent assessment of health system resilience.

- **Comprehensive Health System Assessment:** The health system assessment encompasses a spectrum of indicators organized into six pivotal areas - socio-economic data, access, demographic factors, non-medical determinants, health expenditure, SDG indicators, vulnerability factors, ICT indices, and specific health needs. These indicators are critical in ensuring a nuanced understanding of the intricate balance between the needs of the population and the resources available.

- **Health System Resilience Assessment:** Our carefully designed indicators cover various

thematic areas within the health systems, including governance, provisioning, resources and supplies, and financial mobilization. Additionally, cross-cutting thematic areas such as communication, relations, and information play a pivotal role in this endeavor.

- **Showcase of Diverse Assessment Models:** In addition to our own assessments, the session unveiled a panorama of other assessment models that have undergone rigorous piloting. These diverse models, sourced from various corners of the globe, serve as beacons of innovation and experimentation, collectively enriching the discourse on health system resilience. Through this curated presentation, we aim to foster a dynamic exchange of ideas and approaches, laying the groundwork for a shared understanding of effective health system assessments and health system resilience assessments on a global scale.

Session Objectives

- To present and discuss the key findings and lessons from country pilot studies.
- To discuss strategies for implementing emerging health system assessment and health system resilience assessment tools in different contexts and settings.

Panel Discussion

Importance of community involvement

Dr. Anuradha and Mr. Maulik initiated the presentation by discussing how health systems resilience assessments have developed thus far and how the pandemic has affected their learnings. Using India as a case example, they highlighted how the country was able to bounce back quicker from the impact of COVID-19 due to the involvement of the community. Community involvement strengthened the resilience of the country's health systems that were compromised by the pandemic. Community participation allows the healthcare system to be more resilient to shocks, allowing them to care for the vulnerable in times of crisis.

Data gaps and information

Dr. Anuradha and Mr. Maulik highlighted the importance of understanding how information is currently being captured by existing frameworks and what the current gaps are. They emphasized that having a thorough understanding of existing knowledge and gaps allows for a detailed review of different frameworks on health system resilience. This led to the development of a scoping paper and health system resilience assessment tool.
In the health system resilience assessment tool, health status is defined as a combination of socioeconomic and commercial determinants along with various threats and vulnerabilities affecting the health status. This results in the expansion of the tool into various dimensions such as economic, environmental, and commercial while rooting community resilience at the center, with an emphasis on health literacy for community engagement. The tool includes indicators which address the gap between health needs and utilization, service delivery shortcomings during crises, and supply-side deficiencies, transitioning seamlessly into resilience considerations. The tool also encompasses cross cutting domains such as information systems, risk communication, and interpersonal relationships.

The health system resilience assessment tool by GLC4HSR defines health status considering socioeconomic and commercial determinants, threats, and vulnerabilities. It expands into economic, environmental, and commercial dimensions, with community resilience and health literacy at its core. Indicators address gaps between health needs and utilization, service delivery during crises, and supply-side deficiencies, seamlessly transitioning into resilience considerations. The tool also covers information systems, risk communication, and interpersonal relationships.

To ensure the tool is applicable across settings, Dr. Anuradha highlighted the importance of embedding elements specific to the country's health system resilience into the monitoring and evaluation aspect of the tool. Data collection alongside policy change is also paramount and the UAE-SPHERE surveillance system was brought in as a case study along with India's use of health resilience trackers at the provincial level. She also highlighted the importance of meticulously identifying data gaps, enabling policymakers to develop and adopt tools with comprehensive documentation for replication across diverse countries and settings.

Importance of customization and literacy for a resilient healthcare system

Mr. Maulik kickstarted the panel discussion by posing a question to Dr. Rajib Sen on integrating health system indicators across all levels.

Dr. Rajib Sen highlighted the significance of tailoring activities, programs, and policies to specific national schemes in India, with states actively participating in decision-making processes. By involving states in decision making, there is increased engagement in planning as well as health literacy among citizens. This not only improves health literacy among citizens but also allows them to better understand the healthcare system and their own medical needs. He emphasized the role of NITI Aayog in facilitating coordination between ministries and states, leveraging the expertise of ministries with access to localities and understanding the unique spatial challenges of each state. He highlighted that through having an agency to facilitate coordination and understand the state's unique challenges, it allows for programs and policies to consider the local needs and reflected in policy updates.

He reflected that there has been renewed focus on primary healthcare post-COVID, with a strong and resilient primary healthcare sector already being present in numerous states. Dr. Rajib mentioned that for any system to be resilient, stakeholders must be properly informed and engaged. To this end, **NITI Aayog promotes a School Health System Initiative, leveraging India's high school enrollment rates to integrate robust health interventions into school curriculums. This initiative not only fosters health awareness among students but also benefits communities at large.**

When presented with the same question, Dr. Sohel Saikat echoed similar sentiments, he stressed that there are significant challenges in achieving harmonization due to diverse country realities. Monitoring systems are fragmented, with various components focusing on different aspects. Tools like SPAR and Joint External Evaluation address security aspects globally, while meta-indicators for universal health coverage include financial protection and service coverage. Dr. Sohel highlighted that the lack of integration from global to country level poses a challenge, especially in capturing marginalized populations or those in conflict zones.

> Significant challenges exist in achieving harmonization due to diverse country realities and fragmented monitoring systems. Tools like SPAR and Joint External Evaluation address security globally, while meta-indicators for universal health coverage focus on financial protection and service coverage. The lack of integration from global to country level, especially in capturing marginalized populations or those in conflict zones, poses a major challenge.

He notes that indicators related to service continuity planning are crucial but underutilized which limits the government's ability to capture the needs of marginalized communities and ensure that healthcare delivery is present during shocks. While some countries like the UK have regulations in place, many others lack such provisions. He highlighted that the WHO

aims to guide countries in assessing their monitoring processes and adapting resilience-focused indicators. He emphasized that **there is a need for re-evaluating monitoring and evaluation processes to incorporate resilience-focused indicators, stressing the importance of intersectoral collaboration in bridging gaps during health crises.**

Multistakeholder involvement in health system resilience

Mr. Maulik directed a question to Dr. Hossain Zillur-Rahman regarding the roles of civil society, the private sector, and organized groups in strengthening health systems and defining health system resilience within mixed healthcare systems like those in India or Bangladesh. Furthermore, he inquired about effective methods for measuring their contributions when assessing health system resilience.

Dr. Hossain Zillur-Rahman underscored the necessity of engaging the private sector, particularly in countries like Bangladesh and India, to strengthen the primary healthcare sector. He emphasized the need to distinguish between profit-driven entities and socially oriented players within the private sector, advocating for inclusive dialogues to bridge existing gaps. He highlighted the importance of engaging in discussions with the private sector to identify these players and to include them in the conversation to bridge the existing gap between private and public healthcare.

Mr. Maulik then posed a question to Ms. Jieun Lee on the role that civil society and private sector organizations play in strengthening health systems and what the indicators for measuring these are, when talking about health systems resilience.

Ms. Jieun highlighted the complexities in jurisdictional responsibilities and the multiple agendas at play when working with different actors in the health sector. She noted that technical skill building, motivation and community engagement are key issues to strengthening health systems and engaging private entities. She also emphasized **the importance of integrating health system indicators across governmental levels and leveraging best practices for better adoption.** There is also a need for resilience-focused indicators and inclusion of the private sector in discussions to address profitability gaps in public health. Ms. Jieun emphasized the significance of assessment indicators in delineating health system resilience, particularly in fragile and conflict-affected contexts. She underscored the need for health system capacity building, such as improving WASH (Water, Sanitation, and Hygiene) facilities. Additionally, she suggested a pictorial overview to identify gaps effectively.

Dr. Rajib further emphasized the non-uniform quality of data and proposed regulating the private sector through strategic purchasing and community engagement to raise awareness effectively. He noted the importance of structuring indicators around four key areas -

science, robustness, supply chain management, and governance - supported by health financing and proposed developing a framework to test these indicators effectively.

Dr. Sohel followed up by highlighting the necessity of multi-sectoral cooperation, with leadership from health sector providers and support from other sectors**. Acknowledging the significant role of the private sector, especially in developing countries where they constitute over 50% of healthcare services, he discussed strategies to integrate them into national capacity development and resilience-building efforts. This includes incorporating them into national reporting and monitoring systems and involving them in contingency planning.**

> Given the significant role of the private sector, especially in developing countries where they constitute a majority of healthcare services, strategies should integrate them into national capacity development and resilience-building efforts. This includes incorporating them into national reporting and monitoring systems and involving them in contingency planning. Engaging the private sector is essential to strengthen the primary healthcare sector. It is crucial to distinguish between profit-driven entities and socially oriented players within the private sector, advocating for inclusive dialogues to bridge existing gaps.

Dr. Hossain stressed the importance of real-time data collection and adopting a whole-of-society and whole-of-government approach. He highlighted the need for motivation to engage users and society, along with strategic alignment of health and economic agendas. He advocated for a mix of output and outcome-based indicators to facilitate improvement, emphasizing achievable goals.

Overall, the discussions underscored the importance of collaborative efforts, tailored approaches, and inclusive dialogues in enhancing healthcare resilience and addressing challenges in fragile and conflict-affected settings.

A Roadmap towards Building Better Surveillance - *Alert-Response-Systems*

Moderator:

Prof. Sten H. Vermund
Anna M.R. Lauder Professor of Public Health,
Yale School of Public Health

Panelists:

Dr. Rakesh Mishra
Director, TIGS, Bengaluru, India;
Former Director, CSIR-CCMB

Dr. Chang Liu
Chief Executive Officer, ASK Health Asia

Dr. Satish Khalikar
Program Manager, Wadhwani-AI

Dr. Judith Wong
Director Microbiology and Molecular Epidemiology Division, Environmental Health Institute, Singapore

Dr. Vijay Yeldandi
Chief of Infectious Diseases, Continental Hospitals, Hyderabad, India

Thematic Co-ordinator:

Dr. Shrikant Kalaskar
Technical Head - Public Health & Capacity Building, ACCESS Health International

Presentations:

Dr. Shrikant Kalaskar
(Thematic Presentation) - Disease Surveillance

Dr. Judith Wong
Environmental Surveillance of Microbes: Impact on public health, risk assessment and response

Dr. Satish Khalikar
Accelerating Media based Disease Surveillance using Artificial Intelligence: Learnings from India

ACCESS health international

Context:

Many countries with strong and secure health systems, as assessed using standard frameworks, failed to respond appropriately to the COVID-19 pandemic. Countries that strengthened their surveillance-alert-response systems following the SARS and Ebola crises from the past, performed better than advanced countries, including the United States. The pandemic also brought out the role of digital and molecular technologies in undertaking essential health systems functions, including surveillance and response.

The GLC4HSR convened a workshop end-August, 2023 in Bangalore, in collaboration with the Tata Institute for Genetics and Society to bring out different perspectives on the role of big data analytics, wastewater surveillance, public policies and laws, and financing avenues to build more efficient and effective surveillance systems for secure health systems. The proceedings of the workshop are included in the pre-read material.

A working group is being convened in India to prepare a blueprint for a comprehensive surveillance-alert-response-system. The group will study the current system design, operational capacities and gaps, the feasibility of incorporating digital and molecular surveillance technologies into the current system, the case for a National Public Health Emergency Response Force (PHERF) on the lines of the National Disaster Response Force (NDRF), formulation of appropriate policies and laws to enable rapid response that is in line with the amendments being made to International Health Regulations (IHR). An update on the progress made was presented in the session, followed by an interactive discussion. In addition, the panel discussed the developments in global health, especially the pandemic treaty or instrument, pandemic fund, and amendments to IHR.

Objectives:

- To discuss the critical challenges confronting global health responses, particularly in the context of the COVID-19 pandemic.

- To discuss the stark disparities evident in how countries with robust healthcare systems have navigated and responded to the pandemic, emphasizing the pressing need for universally robust surveillance, alert, and response systems to effectively manage and mitigate such widespread health crises on a global scale.

The panel's primary focus was to showcase successful strategies adopted by countries that have proactively strengthened their public health infrastructure following previous health crises like SARS and Ebola. **By examining and analyzing the improved performance**

of these countries during the COVID-19 pandemic, the discussion aims to underscore the intrinsic value of continuous investment and enhancement in surveillance, alert, and response capacities. The insights gleaned from these successes can serve as guiding principles for other nations aiming to fortify their own health systems in the face of future health emergencies.

Furthermore, **the panel discussion aims to place emphasis on the indispensable role of digital technologies, artificial intelligence (AI), and molecular advancements in bolstering essential health system functions. These innovative technologies are pivotal in advancing surveillance capabilities, enabling early detection of disease outbreaks, and facilitating prompt and targeted response efforts during public health crises.** Showcasing concrete examples and case studies of successful technology integration can substantially contribute to more efficient and effective crisis management, ultimately strengthening global health preparedness and resilience against emerging threats.

Through this panel discussion, a crucial platform for deepening understanding and collaboration is achieved among global health stakeholders. By examining challenges, highlighting successes, and emphasizing the transformative impact of cutting-edge technologies, the discussion aims to inform and inspire actionable steps toward building more resilient and responsive health systems worldwide.

Panel Discussion:

Building up health surveillance systems

Dr. Shrikant Kalaskar commenced the session with a thematic presentation briefly highlighting the work done by the surveillance thematic group of the GLC4HSR, in three areas: 1. The systematic review of surveillance systems assessment approaches; 2. Building back better surveillance systems workshop conducted in India with TIGS; and 3. Surveillance-alert-response systems blueprint for India which is a work in progress.

He further shared a glimpse of the findings from the systematic review of surveillance systems, using the PRISMA technique and found several approaches reported by countries in assessing surveillance systems. To note, 30 percent of articles surveyed were published post-COVID and thus includes newer surveillance technologies. He introduced how the indicators were distributed across three systems – public health surveillance, health information systems and animal health surveillance – through which these systems provide a framework and guideline in the realm of health system surveillance. Through his thematic presentation, he set the tone for the panel discussion on how to build better surveillance alert and response systems.

The critical linkage between policy and action concerning surveillance-alert-response systems was highlighted by Dr. Judith Wong. She particularly focused on mitigating threats posed by harmful microbes in the environment and how such mitigation can effectively prevent future outbreaks. She emphasized the role of cross-sectoral collaboration, including partners from academia, industry, and technology innovation, in translating surveillance data into actionable

policies. She notes that such cross-sectoral collaboration allows for effective surveillance-alert systems to be implemented on the ground and for action to be quickly taken when needed. Using the environment presenting as a reservoir for agricultural run-offs as an example, she highlighted how the environmental factors can be used as a measure for disease prevalence as well.

Dr. Judith uses Singapore's experience in wastewater surveillance for disease signals, citing examples from past outbreaks like SARS in 2003 where the virus could be shared through wastewater. Since SARS back in 2003, the Singapore government has started trials to test for disease signals in wastewater at high-risk sites which was used to translate insights from surveillance into policy action which then impacted COVID-19 handling. She emphasized how cross-sectoral collaboration with partners from academia, industry etc. resulted in innovation and technology implementation for automating testing and scaling which later resulted in the formation of the integrated surveillance system used to monitor the reproductive number of COVID-19 that contributed to Singapore's success in handling the pandemic.

Wastewater surveillance has proven effective for detecting disease signals, as seen in past outbreaks like SARS in 2003. Since then, trials at high-risk sites have helped translate surveillance insights into policy action, impacting pandemic responses. Cross-sectoral collaboration with academia, industry, and other partners has driven innovations in automating testing and scaling efforts. This collaborative approach led to the formation of an integrated surveillance system that monitored the reproductive number of COVID-19, significantly contributing to successful pandemic management.

Use of data in surveillance

Dr. Satish Khalikar brought up an important point in the use of media in accelerating disease surveillance. He addressed India's diverse disease landscape and the challenge of standardized reporting in the media, leading to misinformation. He highlighted how artificial intelligence can be leveraged for automated media surveillance, transforming news into real-time disaster alerts. This boosts the efficiency and efficacy of disaster alerts and allows the community sufficient response time to react. He also emphasized the need for guidelines to guide disease surveillance efforts and prevent misinformation among communities.

> Artificial intelligence can be leveraged for automated media surveillance, transforming news into real-time disaster alerts. This enhances the efficiency and effectiveness of disaster response, providing the community with sufficient time to react. Additionally, guidelines are essential to direct disease surveillance efforts and prevent misinformation among communities.

The need for data literacy and training of users to handle the software as well as process the data collected was also emphasized as Dr. Satish felt that the current data literacy rates are insufficient and needs to be bolstered. He noted that while new technologies can help to speed up the journey towards resilience, there is a need for collaboration to understand the data collected and how to contextualize it according to the respective country.

> While surveillance data can be interpreted to form programs, the true challenge lies in local engagement and motivating communities to adopt initiatives that build a resilient health system. It's crucial to translate available data into actionable knowledge at the community level.

From a hospital epidemiologist perspective, Dr. Vijay V. Yelandi highlighted the challenge of translating surveillance data into actionable knowledge at the community level and

the difficulty of changing behavior based on data. He found from experience that while surveillance data can be interpreted and result in programs formed, the true difficulty lies in local engagement and motivating communities to uptake programs that build towards a resilient health system. He noted that it is important to translate the available data into actionable knowledge on a community level that can be leveraged. To do so, he notes that it is important to understand the challenges faced by the community and how decision makers can allocate the necessary resources to help communities take charge of their health and build towards a resilient health system.

Factors for scaling up surveillance efforts

Beyond implementing actionable knowledge at the community level, Dr. Rakesh Mishra stressed the importance of affordable test kits for scalable surveillance efforts, particularly focusing on wastewater surveillance. He discussed the adaptation of such strategies in national policies and their applicability in both urban and rural contexts, emphasizing the need for economic viability. He also further emphasized the need to equip the workforce with the skills necessary for automation and for public outreach on the importance of surveillance and the role they play. He noted that currently, communities have the concept that while surveillance is important, the responsibility falls upon the government to do so. He also highlighted the role cultural differences have in affecting surveillance systems and how heterogeneity across a country's states plays a role in developing a surveillance system required for a resilient health system.

India's heterogeneous landscape highlights the importance of environmental surveillance, particularly through sewage treatment plants, to obtain invaluable insights into community health dynamics. Regular monitoring, especially for antimicrobial resistance (AMR) and emerging pathogens via metagenomics, is crucial, ideally with monthly assessments. Countries should begin with a One Health index at both Central and State levels, featuring essential indicators tailored to evolving risks. Securing funding and convincing policymakers remains a challenge, but the availability of such data is essential to highlight gaps and address One Health issues in India's unique context.

Dr. Rakesh Mishra speaker highlighted a four-city cluster surveillance in Hyderabad, Pune, Delhi, and Bangalore to emphasize heterogeneity across a country. He noted that in India's heterogeneous landscape, importance of environmental surveillance, particularly through sewage treatment plants, allows for invaluable insights into community health dynamics to be obtained. Regular monitoring, especially for antimicrobial resistance (AMR) and emerging pathogens via metagenomics, is crucial, with a standardized frequency like monthly assessments. To do so, he proposed countries to begin with having a One Health index at both Central and State level with the essential indicators that can be achieved and

eventually tailored to the evolving risks. He acknowledged the difficulty in securing funding and convincing policy makers on such indexes. However, he emphasized that it is crucial to have the data available for gaps to be highlighted and the availability of such data is crucial to work on One Health considering the India's unique context. He emphasized that Standard Operating Procedures (SOPs) need to accommodate both cities and rural areas with localization and provision of indigenous test kits to communities. While automation may face challenges in rural areas, workforce development can bridge this gap, leveraging bigger laboratories for sequencing tasks.

He further highlighted the importance of public advocacy campaigns in sustaining support from policymakers and civic systems, underscoring the importance of surveillance in health policymaking.

Professor Sten H. Vermund further discussed the diverse types of surveillance, including environmental, laboratory, and hospital-based surveillance. He underscored the significance

of mobile health (mHealth) beyond population health, particularly as a surveillance method. He advocated for the One Health concept, emphasizing the criteria necessary to trigger action based on surveillance thresholds.

Ecosystem builders and engaging stakeholders

Dr. Chang Liu contributed a Chinese perspective and emphasized the involvement of the private industry in surveillance-alert-response systems as an ecosystem builder, enriching the dialogue with diverse perspectives. He highlighted how international cross regional linkage and integration is key with China's government taking a big step in that direction through building up the world's largest surveillance system.

Drawing comparisons to Singapore, he notes that in large countries like China and India, there is a large variation in response at the local level with technical experts being concentrated at the national level in guiding health responses. He notes that there is a need to create more capacity at the local level and the involvement of civilians on the ground. He

highlighted that there is currently a huge opportunity in bridging the private and public sector when it comes to health system response for a resilient nationwide health system.

Dr. Judith Wong echoed the need to engage key stakeholders such as the underserved communities in implementing wastewater surveillance systems. She acknowledged the challenges surrounding sampling areas and strategies and highlighted the importance of addressing these questions in areas where such services are most needed, emphasizing the value of infrastructure maintenance even during peacetime to facilitate collaboration, particularly in research endeavors.

There is a a need to engage key stakeholders, such as underserved communities, in implementing wastewater surveillance systems. Challenges surrounding sampling areas and strategies must be addressed, especially in areas where such services are most needed. Maintaining infrastructure during peacetime is crucial to facilitate collaboration, particularly in research endeavors.

Overall, the panel discussion encompassed various critical learning points on enhancing surveillance systems for resilient health infrastructure and underscored the importance of collaboration, innovation, and community engagement in building resilient health systems. Dr. Shrikant Kalaskar initiated by highlighting the diverse approaches to assessing surveillance systems globally, emphasizing the integration of newer technologies. Dr. Judith Wong emphasized the vital link between policy and action, drawing on Singapore's experience in wastewater surveillance to illustrate effective cross-sectoral collaboration.

Dr. Satish Khalikar underscored the role of media in accelerating disease surveillance and stressed the importance of data literacy and collaboration for contextualizing data at a national level. Insights from Dr. Vijay Yelandi highlighted challenges in translating surveillance data into actionable community-level knowledge, emphasizing the importance of local engagement and resource allocation. Dr. Rakesh Mishra emphasized the necessity of affordable test kits and workforce training for scalable surveillance efforts, particularly in wastewater surveillance. Dr. Chang Liu emphasized the involvement of the private sector and the need for cross-regional integration to bolster nationwide health systems.

Adapting to Climate Change: *Operationalizing Health System Resilience*

Case-Study Presentations:

Ms. Whitney Mills
Regional Resilience Specialist, Waikato Regional Council, New Zealand

Dr. Ratnesh Kumar
Lead Specialist - Knowledge Management, Coalition for Disaster Resilient Infrastructure

Panelists:

Dr. Renzo R. Guinto
Associate Professor of the Practice of Global Public Health Inaugural Director, Planetary and Global Health Program, St. Luke's Medical Center College of Medicine Philippines

Prof. Mala Rao
Director, Ethnicity and Health Unit, Dept of Primary Care and Public Health, Imperial College London

Prof. Lam Khee Poh
Provosts Chair Professor of Architecture and Built Environment, National University of Singapore

Dr. Patricia Shwerdtle
Research Consultant, Climate Action Accelerator

Dr. Ratnesh Kumar

Ms. Whitney Mills

Thematic Co-ordinator:

Ms. Iman Hameed
Senior Consultant,
ACCESS Health International

Presentations:

Ms. Iman Hameed
(Thematic Presentation) - Climate & Health

Ms. Whitney Mills
(Case Study Presentation) - Adapting to Climate Change in the Waikato, New Zealand

Dr. Ratnesh Kumar
(Case Study Presentation)- Towards Resilient Health Infrastructure: A Himalayan Experience

Prof. Mala Rao
Adapting to Climate Change: Operationalizing Health Systems Resilience

ACCESS health international

Context:

Asia is home to the largest glacial ice store outside of the Polar region, has the longest coastlines, home to the world's most biodiverse waters, reefs, longest contiguous mangroves, the greatest number of islands and is also the world's most densely populated regions. **Diminishing supplies of freshwater from retreating glacial ice in the Himalayas and Tibetan Plateau; increased intensity of tropical storms along coastlines; droughts, floods and heatwaves are all climate change-related extreme weather events that Asia is experiencing increasingly. It is projected to cause internal displacement, mass migration, food and water insecurity and severe economic loss.** Oceans in Asia support coastal communities' livelihoods but rising water temperatures, mass coral bleaching and projected irreversible coral reef death are threatening fish supplies and may push them into further vulnerability. The combined terrestrial and aquatic climate outcomes affect the most vulnerable in Asia who live in areas prone to these climate events.

According to the World Health Organization, South Asia is at risk of serious threats to human health from climate change-related risks. **"More than half of all South Asians, or 750 million people in the 8 countries — Afghanistan, Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan, and Sri Lanka — were affected by one or more climate-related disasters in the last two decades".The changes in climate could affect up to 800 million people in a region that already has some of the world's poorest and most vulnerable populations**. Added to this, South Asia accounts for more than 25% of the global TB burden and the 3rd largest HIV epidemic globally. India has the third highest proportion of Malaria cases globally.

Southeast Asia has been warming up to 0.20°C per decade since the 1960s and is expected to experience an increasing frequency of heatwaves. Some areas will have less rain or altered rainfall. High humidity will compound temperatures leading to heatwaves. Changes to the hydrological cycle will also impact freshwater availability and undermine water security. This will impact hygiene as well as sanitation. Changing rainfall patterns have been observed already in parts of Malaysia, Vietnam, and Southern Philippines which can have a huge impact on the spread of vector-borne diseases given that the second highest incidence of Malaria occurs in Southeast Asia. Southeast Asia is especially vulnerable to neglected tropical diseases as a result of malnutrition alongside other emerging infectious diseases like dengue, chikungunya, Japanese encephalitis, arbovirus infections and pandemic Influenzas.

Threats to health arise from direct and indirect responses to changing climates by the **environment, animals as well as humans. Direct changes in the environment can have**

an impact on human health such as heat waves or floods. Migration, changes in disease reservoirs, shift in vector geographies, the loss of food sources, freshwater shortages, economic and social vulnerability from natural hazards can result in indirect health repercussions related to communicable, non-communicable diseases as well as mental health. They are interconnected problems that will have a compounding effect.

"A key starting point for health and well-being is strengthening public health systems so that they become more climate resilient, which also requires cooperation with other sectors… interventions to enhance protection against specific climate-sensitive health risks could reduce morbidity and mortality and prevent many losses and damages."

Climate Resilient Development Pathways (CRDPs) are essential to improve overall health and well-being, reduce underlying causes of vulnerability and provide a framework for prioritizing mitigation and adaptation options that support sustainable development. Transformative changes in key sectors including water, food, energy, transportation and built environments offer significant co-benefits for health.

The past year, the GLC4HSR has focused on initiating a learning journey to comprehend and unpack what resilience, adaptation and mitigation means at the climate and health nexus, particularly with centering people and communities.

Objectives of this session:

- This session will present key takeaways from discussions in the region that we have engaged in and led over the year.
- Introduce planetary approaches to climate adaptation and mitigation.
- Explore increased impacts in vulnerable communities and applying a gender lens.
- Understand how to operationalize mitigation and adaptation plans.
- Learn how community resilience is built in practical terms, with a particular focus on incorporating indigenous ways of knowing and understanding.
- Discuss health system readiness to cope with rising climate-related health needs.
- Understand if building climate-resilient sustainable health systems can be cost-effective and feasible in LMICs.

Thematic Presentation

Importance of climate focused health system capacity indicators

Ms. Iman Hameed kicked off the panel discussion with a thematic presentation that

highlighted significant gaps in addressing the intersection of climate and health, revealing systemic challenges characterized by silos and a lack of iterative approaches. She noted that despite agencies existing within communities, there is a notable absence of support structures to aid them in navigating climate-health adaptation challenges effectively. From her thematic presentation, she notes three key areas of deficiency that emerge – absence of comprehensive indicators, allocation and capacity training, and provision of specific programs targeting vulnerable communities.

Significant gaps exist in addressing the intersection of climate and health, revealing systemic challenges characterized by silos and a lack of iterative approaches. Despite agencies within communities, there is a notable absence of support structures to aid in navigating climate-health adaptation challenges effectively. Key deficiencies include the absence of comprehensive indicators, allocation and capacity training, and provision of specific programs targeting vulnerable communities.

She highlights that there is a notable absence of comprehensive indicators to assess the capacity of health systems in addressing climate-related health challenges. Without such metrics, it becomes challenging to evaluate readiness and allocate resources effectively. Secondly, there is a pressing need to enhance the resilience of the health workforce, particularly in terms of allocation and capacity training. Scaling up these efforts is imperative to ensure that healthcare professionals are adequately equipped to handle the complexities of climate-related health issues.

Lastly, there is a clear gap in the provision of specific programs targeting vulnerable communities. These communities often bear the brunt of climate-related health risks disproportionately and require tailored interventions to mitigate the impact effectively. She emphasized that addressing these gaps require concerted efforts to break down silos between climate and health sectors, foster iterative problem-solving approaches, and provide adequate support structures for communities navigating climate-health adaptation challenges.

Case-Study Presentation

Importance of community engagement for implementation

Ms. Whitney Mills followed up by sharing insights into coastal hazard and climate change adaptation strategies and emphasized the importance of community engagement in implementing these strategies. She highlighted collaboration with local district councils to implement climate-resilient strategies and underscored the significance of community involvement as a key source of knowledge. Quick wins, she noted, were crucial for gaining community trust, but emphasized the need for adequate planning and pre-implementation phases. She also discussed the challenges of building trust and facilitating solution-building, stressing the importance of relationship-building with communities.

Impact of climate change on health systems:

Dr. Ratnesh Kumar, from the CDRI, outlined the impact of climate change on health systems, particularly focusing on the effects of flash floods. He notes that climate events such as flash floods can impact health systems resulting in increased casualties, missed treatments along with new diseases alongside damages to health infrastructure and disruption to critical services. He highlights that for resilient health infrastructure to be built, there is a need for emergency department preparedness, building assets, and systemic resilience. He emphasized that when it comes to health system resilience, a disruption to other infrastructures and systems should not affect the performance of the hospital. The goal, he stated, was to develop a cohesive policy framework based on lessons learned to guide future policies and funding mechanisms.

Panel discussion:

Planetary health as an approach to climate risks and health adaptation

Dr. Renzo R. Guinto addressed the need to integrate climate change and health considerations, highlighting the importance of planetary health and its implications for resilience planning. He emphasized the interconnectedness of human and environmental health and advocated for a holistic approach to address climate change and pollution.

Dr. Patricia Schwerdtle discussed considerations for planning climate-resilient health facilities at the facility and community levels. She broke it down into 3 main categories – Primary effect, Secondary effect, and Tertiary effect. Under primary effect, there is a need

to address the direct impacts from events such as extreme weather events. For secondary impacts, there is a need to look at indirect impacts such as events that affect food, air quality and water system. Tertiary impacts take a focus on social systems such as how changing patterns of migration and conflict affects health facilities. She noted that there is a need for vulnerability adaptation assessments at the national level to develop a Health National Adaptation Plan (H-NAP) to inform health policies. She highlighted that WHO

currently has guidelines for HNAP to help policymakers identify the current and future key hazards faced by their respective country with their respective solution.

Considerations for planning climate-resilient health facilities at both facility and community levels emphasize the need for vulnerability adaptation assessments at the national level. This is crucial for developing a Health National Adaptation Plan (H-NAP) to inform health policies. The WHO currently provides guidelines for HNAP to help policymakers identify the key hazards faced by their respective countries and their respective solutions.

She emphasized that there is a need for a climate action accelerator to merge work currently done at the community level with policy level work along with prioritization and identification of solutions. Beyond implementing new solutions, she stressed that prioritizing strengthening existing solutions in response to increased risks posed by climate change such as increasing blood bank supply in response to increased malaria cases resulting from

climate change can prove to be an effective solution. She also pointed out how having a disaster risk management team at the hospital level can be a low cost and highly impactful solution that can be easily implemented. She also drew attention to the need to decouple universal healthcare and health systems strengthening to address the underlying cause of climate change – high carbon emissions.

Impact on women

Similarly, Prof. Mala Rao raised questions about the disproportionate impact of climate change on women and the involvement of health systems actors. **She discussed how climate change exacerbates gender inequalities, particularly in coastal areas, and emphasized the need for health systems to address these disparities. Using global south countries as an example, she highlighted coastal communities where a rise in sea level results in increased levels of salt and pollutants in freshwater resources. This ultimately results in increased walking distance required for women to obtain water alongside increased gastrointestinal diseases resulting from bathing in polluted water and overall increase in difficulty of maintaining basic hygiene.**

Climate change exacerbates gender inequalities, particularly in coastal areas, necessitating health systems to address these disparities. In many global south countries, coastal communities face rising sea levels, increasing salt and pollutant levels in freshwater resources. This leads to longer distances for women to obtain water, higher rates of gastrointestinal diseases from polluted water, and greater difficulty in maintaining basic hygiene.

Human-centric architectural designs

Prof. Lam Khee Poh focused on human-centric architectural designs and their implications for health and climate change. He emphasized the need to reduce carbon emissions in architectural design, promote passive design and green buildings, and curb energy consumption in healthcare facilities. Using outdoor air quality as an example, he highlighted that while outdoor air quality is a pervasive issue that affects human health and is a result of human activities, there has been an improvement during lockdowns in the pandemic. He highlighted that outdoor quality is due to anthropogenic causes and by simply stopping all activities causing air pollution, increased cost savings through decreased spending on health issues attributed to air quality can be achieved. Using COVID-19 lockdowns as an example, he highlighted how the environment has recovered substantially as a by-product of human lockdown. He stressed that there is a need to relook at the image of economic growth and its correlation to metal and glass skyscrapers and shift towards green buildings.

He notes that there is a drastic need to bend curve and manage energy consumption and carbon emissions.

Prof. Lam Khee Poh further highlighted the importance of optimizing climate-friendly buildings with the existing knowledge base. He emphasized the need to consider both initial investment and operational costs when implementing climate-friendly building practices. Additionally, he noted that as buildings become more established and developed, the complexity of optimizing them for climate-friendliness increases. This underscores the importance of carefully evaluating investment decisions and considering long-term operational implications in the context of climate change mitigation efforts.

Optimizing climate-friendly buildings using the existing knowledge base is crucial. It is important to consider both initial investment and operational costs when implementing climate-friendly building practices. As buildings become more established, the complexity of optimizing them for climate-friendliness increases. This underscores the need to carefully evaluate investment decisions and consider long-term operational implications in climate change mitigation efforts.

Building up communities

Ms. Whitney Mills then explored the challenges of achieving quick wins and building trust with communities. Drawing from her success in the Waikato region in Auckland, she emphasized the importance of understanding the community's tolerability and what matters most to the community that policy makers are doing the work for. This boiled down to building a good and lasting relationship with the community and understanding their needs before drawing up plans for them. By doing so, this allows the community to be more receptive of plans and to be more inclined towards accepting implemented programs.

The panel discussion provided valuable insights into the intersection of climate and health, revealing systemic challenges marked by silos and a lack of iterative approaches. Ms. Iman Hameed underscored the urgent need for comprehensive indicators to assess health systems' capacity in addressing climate-related health challenges, alongside targeted programs for vulnerable communities. Ms. Whitney Mills emphasized the pivotal role of community engagement in implementing climate-resilient strategies, stressing the importance of building trust and understanding community needs.

Dr. Ratnesh Kumar highlighted the impact of climate change on health systems, advocating for emergency preparedness and systemic resilience. Furthermore, Dr. Renzo R. Guinto and Prof. Mala Rao emphasized the integration of climate change considerations into resilience planning, particularly in addressing gender disparities and coastal community vulnerabilities. Dr. Patricia Schwerdtle delved into planning climate-resilient health facilities, while Prof. Lam Khee Poh focused on the importance of human-centric architectural designs in reducing carbon emissions and promoting green buildings. Overall, the discussion underscored the imperative for interdisciplinary collaboration, community engagement, and innovative strategies to address the complex challenges at the nexus of climate and health.

Charting Pathways for Equitable and Resilient *Digital Health Ecosystems*

Moderator:

Mr. Kiran Anandampillai
Advisor, National Health Authority, India and CEO of iDrishti

Panelists:

Dr. Aida Karazhanova
Economic Affairs Officer, UN ESCAP

Mr. Edward Booty
CEO, Reach52

Mr. Manprit Singh
Data & AI Strategist, Microsoft

Ms. Kanika Kalra *(Virtual)*
Consultant, Strategy and Governance Unit, WHO

Mr. Patota Putra Tambunan
Chief Operating Office, Digital Transformation Office, Ministry of Health, Indonesia

Thematic Co-ordinator

Ms. Supriya Prabhakar
Senior Technical Specialist-Digital Health, ACCESS Health International

Presentations:

Mr. Jai Ganesh Udayasankaran
(Keynote) -
Towards Convergence and Partnerships for Digital-in-Health

Mr. Patota Putra Tambunan
(Keynote) -
Continuing the Breakthroughs of Digital Health Technology Transformation

Dr. Aida Karazhanova
(Case Study Presentation)-
ICT Connectivity and Tracking e-Resilience for Digital Health Systems

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Context:

The current global health landscape is undergoing a significant shift due to widespread digital transformation. The COVID-19 pandemic left critical gaps in health data infrastructure, especially affecting marginalized groups. This revelation emphasized the urgent need to invest in digital public resources, responsible AI integration, and improved evidence-generation methods for achieving fair health outcomes.

Essential for this GLC4HSR Conclave session is acknowledging the uneven progress of digital health transformation across nations and communities. **Disparities in the adoption and accessibility of digital health tools, compounded by existing social factors, emphasize the necessity of ensuring inclusivity throughout this transformative journey.** As countries navigate different stages of digital health evolution, sharing experiences, successes, and setbacks becomes pivotal. Learning from diverse experiences will expedite progress and provide valuable insights into effective strategies and solutions. Additionally, the session will highlight concerns about the ethical implications of digital health technologies. Balancing digital health innovations with the need to protect individuals from unintended consequences calls for robust regulatory frameworks and stringent oversight measures.

Objectives of this session:

- **Equity Advancement:**
Exploring strategies to narrow the digital health adoption divide, emphasizing localized approaches to ensure fair access across diverse communities.

- **Policy Enhancement:**
Discussing approaches to strengthening data protection, ethical governance, and procurement guidelines with the aim of fortifying regulatory oversight in the digital health landscape. Also exploring and highlighting any policy decisions that have attempted to address the digital divide that exists today.

- **Responsible AI Integration:**
Examining protocols for validating the safety and effectiveness of digital health tools before widespread deployment, with a focus on diverse contexts and populations.

- **Collaborative Empowerment:**
Discussing the cultivation of partnerships between public and private sectors to drive innovation and sustainable scaling of digital health initiatives, fostering collaborative empowerment in the healthcare ecosystem.

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Keynote Presentations:

Collaboration is key

Mr. Patota Putra Tambunan kicked off the session by highlighting the need to address ecosystem-level challenges, emphasizing that it's not solely the responsibility of the Ministry of Health or the Digital Transformation Office, but requires collaboration with other ministries such as ICT and Education. He identified inefficiencies in IT knowledge within the Ministry of Health as a primary concern, prompting the establishment of the Digital Transformation Office to streamline systems and standardize healthcare data nationwide through a digital health blueprint.

Additionally, he addressed the absence of regulations and resistance to change, citing the Ministerial Decree and inclusion in the omnibus law for health as measures to mandate compliance. To do so, he highlighted how multi-sectoral collaboration would allow gaps to be addressed across sectors and at different levels. He highlighted a collaboration with the Ministry of ICT that is currently underway to address infrastructural deficiencies at national, provincial, city, and district levels.

Further initiatives include enhancing digital capacity among healthcare workers through curriculum development, strengthening health institutional capabilities for data collection at various administrative levels, and emphasizing the importance of health data governance within digital transformation strategies which should include compliance with data protection laws and ISO certifications. He highlighted the importance of curriculum development for healthcare workers, implementation of KF-A standards and the use of platforms like Satusehat and WhatsApp health data integration along with the development of a new 2025-2029 digital health strategy with support from the UK government. Mr. Tambunan stressed the need for collaboration across sectors while balancing innovation

and regulation to accelerate positive outcomes.

Similarly, Mr. Jai Ganesh Udayasankaran also underscored the critical importance of scaling digital and AI solutions within healthcare systems, recognizing that impactful transformation requires strategic collaboration and prioritization. He emphasized that simply having a blueprint for digital transformation is not sufficient; there must be concerted efforts to implement these plans effectively. He emphasized that for plans to be implemented effectively, there needs to be multi-sectoral collaboration and implementation. However, he noted that the current situation is complex where collaboration and implementation plans may face troubles particularly in countries which may possess comprehensive plans for digital transformation in healthcare yet struggle to execute them. He identified the translation of these plans into actionable steps as the crux of the issue, emphasizing that this is where the real challenge lies. To address this challenge, Mr. Jai Ganesh advocated for **a convergence approach, which involves bringing together various ministries and stakeholders involved in healthcare and digital transformation efforts. By fostering collaboration among these entities, it becomes possible to align priorities, allocate resources effectively, and streamline implementation efforts.**

Scaling digital and AI solutions in healthcare demands strategic collaboration and effective implementation. The real challenge is translating plans into actions, especially in countries with comprehensive but poorly executed plans. A convergence approach, involving multiple ministries and stakeholders, is essential to align priorities, allocate resources, and streamline efforts.

Furthermore, Mr. Jai Ganesh emphasized the need for a clear strategy for prioritizing digital transformation initiatives. This involves identifying key enablers and barriers to transformative impact and developing targeted interventions to address them. He noted the importance of moving beyond mere planning to actual execution in the realm of digital transformation in healthcare and stressed that collaboration, strategic prioritization, and concerted action are essential for realizing the full potential of digital and AI technologies to improve healthcare outcomes. He emphasized AeHIN's role in providing planning support, training, and recommendations to countries and proposed establishing a Digital Health Transformation office for record maintenance and regulatory support.

Panel discussion:

ICT connectivity in resilience tracking

Dr. Aida Karazhanova kicked off the panel discussion by introducing the concept of e-resilience, emphasizing the importance of ICT (Information and Communication Technology) in withstanding stress. She outlined five pillars focusing on essential infrastructure elements such as fiber optics, space agile methods and supportive environments – policy, digital data, hazard, exposure. She highlighted the Digital Transformation Index's focus on the lack of data and how digital transformation is linked to environmental sustainability.

From her prior work, she highlighted key findings across North & Central Asia where she found that there is growing preference for mobile devices with improvement required when it comes to ICT regulatory policy and quality. She noted that there are low levels of e-participation in data management which is paired with widening gender and socio-economic gaps. She also notes that ICT infrastructure in Azerbaijan and Armenia is more exposed to hazards compared to other central Asian countries.

Dr. Aida emphasized the need to innovate through dynamic mobile digital connectivity and prepare indicators for tracking resilience, considering climate concerns. She noted that it is important to prepare the suitable indicators for tracking resilience, to include climate

concerns while ensuring that data is prepared for digital transformation index and to prepare the internet speed map in advance. By having dynamic mobile digital connectivity, it allows for innovation to happen which can be used to improve productivity in various sectors while ensuring that there keeping in line with environmental sustainability efforts.

There is a need to innovate through dynamic mobile digital connectivity and prepare indicators for tracking resilience with climate concerns. It is crucial to ensure data readiness for digital transformation and prepare an internet speed map. This approach enhances productivity across sectors while maintaining environmental sustainability.

Health system strengthening

Mr. Edward Booty from Reach52, who has worked with rural communities through his startup, viewed technology as a means to strengthen health systems, enabling health workers in their daily tasks. From his experience, he highlights the challenges he sees in rural areas where essential services are lacking and there is a need to train healthcare workers on how to utilize the technology in place. Doing so allows community health workers to

utilize the technology instead of having the patient utilize it as well. He noted that such an approach is often more effective due to limited digital literacy by patient communities and it was much more efficient to train up healthcare workers to utilize the provided technology and educate them.

Recognizing the challenge of limited access to smartphones among impoverished communities, Reach52 utilizes older devices for their services. Additionally, they address linguistic diversity by implementing multiple training sessions for workers, known as the buddy system. Mr. Edward highlighted their collaboration with governments to train doctors and support workers in overcoming challenges with the app, emphasizing their commitment to ensuring healthcare accessibility in underserved areas.

Equitable access to data

Equitable access to data is essential for building trust in healthcare. Measures in Indonesia include classifying data to limit government access, implementing data governance tools, and using public and private cloud storage protocols. Only aggregate data is accessible to the government. Guidelines for regional governments are being developed and made public, with data management decentralized by established standards

Mr. Patota Putra Tambunan followed up with an emphasis on the importance of equitable access to data, particularly within healthcare, to build trust among stakeholders. **In Indonesia's context, he emphasized the importance of transparency in building trust and outlined**

measures taken by Indonesia to safeguard personal data, including the classification of different types of data to limit government access, implementation of data governance tools, and storage protocols in public and private cloud servers. Notably, Indonesia has established rules governing data access, ensuring that only aggregate data is accessible to the government. To further enhance trust, they are developing guidelines for regional governments and making them publicly available, while also decentralizing data management by established standards.

Data usage and regulatory guidance

Ms. Kanika Kalra followed up by pointing out that there is a need for regulatory guidance on backend systems in data usage and interpretation and that a current gap lies in data interpretation and implementation. She notes that the lack of technical expertise in data interpretation impedes the progress of AI usage not just in healthcare but across various industries as well. She followed up with highlighting the lack of standards for AI in healthcare and the role of the Global Initiative on AI for Health in guiding countries on safe and effective AI implementation. She stressed the need for robust frameworks and public-private partnerships to enable the integration of AI into healthcare systems. Beyond that, she also underscored the importance of successful policy implementation and stressed the need for collaboration with marginalized communities to ensure equitable access to healthcare technologies.

> The lack of technical expertise in data interpretation impedes AI progress across industries. The absence of standards for AI in healthcare and the need for robust frameworks and public-private partnerships are critical for safe and effective AI integration. The Global Initiative on AI for Health plays a key role in guiding these efforts.

Mr. Manprit Singh further emphasized the mismatch between the capabilities of AI and the backend systems, noting the challenge of interpreting large amounts of data and

implementing findings effectively. He highlighted the importance of aligning AI capabilities with data integrity and privacy regulations. Mr. Manprit referenced Singapore's guidelines on AI usage in healthcare, emphasizing their role in ensuring security and privacy. Microsoft works within these guidelines and incorporates additional security measures to safeguard sensitive healthcare data. Moreover, he stressed the concept of responsible AI in healthcare, emphasizing the need for ethical considerations and compliance with established standards to ensure the safe and effective use of AI technologies in healthcare settings.

Closing off the session, Ms. Simeen Mirza from ACCESS Health International highlighted the importance of working with communities and catering to their needs in the face of digital innovation to ensure that groups are not left behind. She emphasized that cooperation is vital, leading to a multi stakeholder approach in creating pathways for equitable and resilient digital health ecosystems.

The panel discussion covered a wide range of topics but several key themes emerged where the speakers highlighted their importance while sharing their insights – digital divide, data privacy and trust, the role of global health policy initiatives. The panelists highlighted key challenges hindering the adoption of digital health technologies, notably the digital divide, emphasizing the necessity of comprehensive strategies to increase access to broadband internet, provide digital literacy training, and ensure affordability of devices. Additionally, they stressed the importance of data privacy and trust, calling for transparent data management practices, robust data protection laws, and public education campaigns to foster user trust. The panel also underscored the critical role of global health policy initiatives in fostering innovation and ensuring equitable access to healthcare technologies on an international scale, discussing the imperative need for collaborative efforts in this area.

Overall, the session provided valuable perspectives from diverse stakeholders, offering actionable recommendations to guide future initiatives in digital health. **By prioritizing strategies to bridge the digital divide and implementing robust data governance frameworks, stakeholders can foster a more inclusive and trustworthy digital health ecosystem. With continued collaboration and innovation, the digital health landscape can evolve to meet the evolving needs of communities worldwide, ultimately advancing global health equity and resilience in the face of emerging challenges.**

Fireside Chat

Exploring Community Engagement: *Unpacking Purpose, Policy, People, and Planet*

Host:

Dr. Uma Aysola
Director (Global),
Communications and Partner Engagement,
ACCESS Health International

Speakers:

Prof. Mushtaque Chowdhury *(Virtual)*
Advisor, James P Grant School of Public Health, BRAC University

Dr. Yurdhina Meilissa
Chief Strategist and Acting Chief of Primary Health Care, Center for Indonesia's Strategic Development Initiatives

Dr. Rajib Sen
Senior Advisor,
NITI Aayog,
Government of India

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Dr. Uma Aysola kicked off the discussion asking Prof. Mushtaque Chowdhury his views on what paves the way for policy change towards effective community engagement. Using Bangladesh as a case study, he highlighted that NGOs played an important role in the implementation of public health interventions due to the freedom given in the past. He notes that currently, there are increasing challenges faced by NGOs where funding and regulations have limited NGOs' ability to contribute meaningfully. He highlighted that NGOs play a pivotal role in community engagement where they focus on social mobilization and generating opinion about important social issues.

Dr. Yurdhina Meilissa echoed Prof. Mushtaque Chowdhury sentiments on the importance of community engagement and the role of NGOs giving communities a place for open discussion. She noted that NGOs help to connect policymakers with citizens on the ground and helps governments understand the complexities within various communities.

NGOs and civil society organizations play a critical role in public health interventions, having the ability to mobilize communities and influence social issues. Despite facing funding and regulatory challenges, NGOs facilitate open discussions and connect policymakers with citizens, helping to understand community complexities. Trust, communication, consultation, and collaboration are key elements for effective community engagement and policy development.

Overall, the discussion highlighted the importance of trust in community engagement to help the community develop. Communication, consultative in nature along with collaboration are the three cornerstones in engaging the community to develop policies.

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Day 2

Keynote Address

Dr. Nima Asgari-Jirhandeh, Director, Asia-Pacific Observatory on Health Systems and Policies, kicked off the second day of the conclave with an introduction of the Asia Pacific Observatory on Health Systems and Policies (APO) and how they utilize various key materials such as Health System in Transition Review (HiTs), Comparative Country Studies, Policy Briefs, and the COVID-19 Health System Response Monitor.

He noted that several new aspects have emerged in the latest Health System in Transition Review (HiT), where inclusivity and gender equity within health systems is emphasized. Additionally, there's a heightened focus on climate change and health preparedness, recognizing the significance of policy processes beyond the health sector that impact health outcomes, such as OneHealth and antimicrobial resistance (AMR). Furthermore, the review addresses financing mechanisms and long-term care delivery, alongside the transition of primary healthcare (PHC). An expansion is observed in the "Enabling functions" section to include "Digitalization and regulation," which encompasses human and physical resource management. Lastly, there's an emphasis on enhancing health system resilience.

NGOs and civil society organizations play a critical role in public health interventions, having the ability to mobilize communities and influence social issues. Despite facing funding and regulatory challenges, NGOs facilitate open discussions and connect policymakers with citizens, helping to understand community complexities. Trust, communication, consultation, and collaboration are key elements for effective community engagement and policy development.

Adopting a Multi-Pronged Approach for *Supply Chain Resilience*

Moderator:

Prof. John C W Lim
Executive Director of the Centre of Regulatory Excellence (CoRE) at the Duke-National University of Singapore Medical School (Duke-NUS)

Panelists:

Mr. Anthony Tann
General Manager and Senior Director, Asia Pacific, United States Pharmacopeia

Mr. Chris Colwell
Vice President, International Government & Regulatory Affairs at the United States Pharmacopeia (USP)

Mr. Ramesh Raj Kishore
Regional Director-APAC, Pharmceutical Security Institute

Mr. Brett Marshall
Corporate Head, Quality & HSSE, Zuellig Pharma

Thematic Co-ordinator

Dr. Marie Lamy
Director - Partnerships Development, ACCESS Health International

Presentations:

Mr. Anthony Tann
(Keynote) -
Elements Of A Strong Medicines Supply Chain

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Context:

The global pharmaceutical industry has faced unprecedented challenges, highlighting the critical need for resilient supply chains. The COVID-19 pandemic, geopolitical tensions, and environmental disruptions have exposed vulnerabilities in the global pharmaceutical supply chain, ranging from raw material shortages to distribution bottlenecks and the risk of substandard and falsified medicines. These challenges have underscored the importance of robust supply chain management to ensure uninterrupted access to essential medicines and healthcare products. Supply chain strengthening has emerged as an important area of focus for the Global Learning Collaboration for Health Systems Resilience. The past few years have been a story of resilience and adaptation. We witnessed pharmaceutical manufacturers grappling with sudden spikes in demand for certain medications, while simultaneously dealing with supply chain disruptions due to lockdowns and restricted trade movements. The situation was further complicated by quality assurance issues, as the urgency to deliver sometimes overshadowed the rigorous processes needed to ensure product safety and efficacy.

During this time, the role of technology emerged as a cornerstone for supply chain resilience. **Digital tools and data analytics have proven essential in forecasting demand, tracking inventory levels, and identifying potential disruptions before they escalate into crises. Moreover, the pandemic accelerated the adoption of technologies traceability and AI-driven tools for supply chain optimization. However, technology alone isn't the panacea for all supply chain issues. The human element – encompassing strong relationships, effective communication, and collaboration across various stakeholders – remains at the heart of a resilient supply chain. The past year highlighted the importance of fostering partnerships between pharmaceutical companies, healthcare providers, regulatory bodies, and NGOs. These collaborations not only helped mitigate immediate supply chain disruptions but also laid the groundwork for more sustainable and equitable healthcare systems.** The session focuses on defragmenting the current supply chain risks and challenges and to identify opportunities for ensuring greater resilience in support of health systems strengthening.This session discusses what is blocking the adoption and implementation of existing guidelines, and what elements are missing to address supply chain vulnerabilities effectively and will identify learnings from across the globe.

Objectives:

- To highlight the importance of a resilient pharmaceutical supply chain from a health systems perspective.
- To discuss strategies for strengthening pharmaceutical manufacturing, market access, and quality assurance.
- To explore collaborative approaches involving key stakeholders for improving supply chain efficiency and transparency.
- To propose actionable solutions for provisioning, supplying, financing, and governing within the pharmaceutical supply chains.

Session Keynote:

Pharmaceutical supply chains transparency

Mr. Anthony Tann kicked off the panel discussion by highlighting critical issues plaguing pharmaceutical supply chains worldwide. He highlighted there were approximately 42.7% of shortages attributed to quality concerns, as reported by the European Association of Pharmaceutical. Furthermore, he emphasized how maintaining stringent quality standards as pharmaceutical products traverse various nodes of the supply chain can affect supply chain. Efforts to bolster regulatory standards, such as those undertaken by the United States Pharmacopeia (USP), play a pivotal role in enhancing the integrity of the health system. He highlighted how USP's initiatives which encompass enhancing drug testing laboratories, elevates international measurement reference standards, and provides technical assistance, thereby fortifying supply chain security.

Pharmaceutical supply chains face critical issues, with 42.7% of shortages due to quality concerns. Maintaining stringent quality standards across the supply chain is challenging. Efforts by organizations like the United States Pharmacopeia (USP) enhance supply chain security through initiatives such as improving drug testing laboratories, elevating international measurement reference standards, and providing technical assistance.

Similarly, Mr. Anthony addressed the issue of supply chain transparency by emphasizing that increased transparency is meaningful only when data is standardized and shared seamlessly. He highlighted that a significant challenge currently lies in the fragmentation and lack of standardization of downstream information, particularly at the retailer, hospital, and clinic levels. To combat this, USP is spearheading efforts to establish a proactive monitoring system that enhances transparency throughout the supply chain, ensuring the quality and safety of medical products.

Moreover, Mr. Anthony Tann advocated for the deployment of Advanced Manufacturing Technologies (AMT), such as continuous manufacturing, to diversify the supply chain and maintain a consistent flow of pharmaceutical products and goods. Ultimately, **the overarching goal of enhancing supply chain resilience is to instill trust among stakeholders. This entails enabling regulators to enforce standards effectively, empowering manufacturers to adhere to stringent guidelines, and fostering patient confidence in the affordability, safety, and quality of their medicines.**

Panel discussion:

Upstream Components of the Supply Chain

Prof. John Lim and Mr. Chris Colwell delved into examining upstream components of the supply chain, identifying vulnerabilities, and implementing quality systems to ensure a steady supply of medical manufacturing.

Examining upstream supply chain components reveals vulnerabilities and the need for quality systems to ensure a steady supply of medical manufacturing materials. Adhering to quality standards builds trust and confidence in pharmaceutical supply, preventing disruptions from quality issues. Ensuring raw materials and components meet stringent quality requirements minimizes the risk of downstream disruptions, enhancing trust among healthcare providers and patients.

Mr. Chris highlighted that it is important to adhere to quality standards which helps build trust and confidence in pharmaceutical material supply and helps to avoid disruptions that

may arise from potential quality issues. Ensuring that raw materials and components meet stringent quality requirements is crucial for minimizing the risk of downstream disruptions caused by quality issues. This commitment to quality not only mitigates potential disruptions but also builds trust and confidence among stakeholders, including healthcare providers and patients who rely on safe and effective pharmaceutical products.

Moreover, a proactive focus on upstream quality systems helps organizations mitigate risks associated with regulatory compliance. Many regulatory bodies impose strict requirements on pharmaceutical manufacturing processes, including the sourcing and quality control of raw materials. By examining and ensuring the quality of upstream components, organizations can comply with these regulations more effectively, reducing regulatory risks and ensuring continued market access for their medical products.

Protocols for supply chain resilience

Mr. Ramesh Raj Kishore focused on how the pandemic has impacted global supply chain and stressed the importance of quickly embracing protocols and systems to ensure that the supply chain is resilient when faced with shocks and to ensure that crucial health supplies are able to reach citizens on the ground. He highlighted that **connectivity is key in addition to collaboration with enforcement agencies to combat counterfeit medicine and illegal procurement, especially during crises like the COVID-19 pandemic.**

Mr. Brett Marshall highlighted that it is pivotal to think of a supply chain as a network with multiple levels of suppliers instead of approaching ut with a linear mindset. This affects

stakeholder management at multiple levels which can have an impact on medicinal supply services. **From a pharmaceutical firm perspective, he emphasized that there is a need to build relationships with governments and regulators to establish a mutually beneficial relationship that allows patients to obtain their medication safely while the business sustains its activities when supply shocks occur.**

Public-private partnerships and multi-stakeholder collaboration

Mr. Anthony Tann further elaborated on the importance of public-private partnerships (PPPs) in supply chains, particularly in low- and middle-income countries. He notes that PPPs have shown promise but also face challenges. In some instances, they have been successful in improving supply chain efficiency, resilience, and access to essential goods and services. However, the effectiveness of PPPs can vary depending on factors such as the local context, the nature of the partnership, and the commitment of involved stakeholders.

Using Asia as a case study, Mr. Brett Marshall highlighted how Cambodia has implemented PPPs involving collaboration between non-governmental organizations (NGOs), private companies, and government agencies to address various issues, including education and supply chain management. These partnerships have helped leverage resources, expertise, and networks from both the public and private sectors to improve service delivery and ensure the availability of essential goods.

Mr. Anthony Tann discussed how US Pharmacopeia serves as an example of a convener in the supply chain context, bringing together multiple stakeholders to discuss and address challenges faced in ensuring the quality, safety, and integrity of pharmaceutical products. This collaborative approach facilitates knowledge sharing, capacity building, and the development of innovative solutions to supply chain issues.

Data use in supply chain management

The integration of artificial intelligence (AI) into supply chain management demands careful consideration and proactive measures to establish effective governance

frameworks. Mr. Tann emphasized the critical nature of standardizing data and implementing strong leadership and AI governance practices as foundational requirements for responsible and ethical AI utilization, especially within intricate supply chain ecosystems.

Prof. John Lim echoed this perspective, stressing the necessity of ongoing dialogues centered on AI governance and the importance of laying a solid groundwork before deploying AI solutions in supply chain management. One key aspect highlighted by both experts is **the establishment of robust governance frameworks. These frameworks are essential to ensure that AI is utilized in a manner that aligns with ethical guidelines and regulatory standards. They encompass policies and protocols that govern the development, deployment, and monitoring of AI systems within supply chain operations. This includes addressing critical concerns such as data privacy, security, transparency, and accountability throughout the AI lifecycle.**

> Ongoing dialogues on AI governance and solid groundwork are essential before deploying AI solutions in supply chain management. Establishing robust governance frameworks ensures AI use aligns with ethical guidelines and regulatory standards. These frameworks govern the development, deployment, and monitoring of AI systems, addressing data privacy, security, transparency, and accountability throughout the AI lifecycle.

Standardizing data is another pivotal prerequisite emphasized by Mr. Anthony. AI algorithms rely heavily on quality and standardized data inputs to generate accurate and reliable insights. Therefore, ensuring data consistency, integrity, and accessibility across the supply chain network is fundamental for maximizing the effectiveness of AI-driven solutions.

Furthermore, both Mr. Anthony and Prof. John Lim underscored the significance of leadership in driving responsible AI adoption. Strong leadership fosters a culture of ethical AI use and accountability within organizations. Leaders play a vital role in championing AI governance practices, facilitating cross-functional collaboration, and advocating for transparency in AI decision-making processes.

Addressing Environmental footprint of supply chains

In addition to the imperative of ensuring quality assurance, there is a growing recognition of the need to decarbonize supply chains to mitigate their environmental impact. **Mr.**

Chris Colwell emphasized the critical importance of evaluating and addressing the environmental footprint of supply chains alongside maintaining stringent quality assurance standards. This involves embracing sustainable practices and adopting eco-friendly technologies aimed at reducing carbon emissions and minimizing environmental degradation associated with supply chain operations.

The emphasis on decarbonizing supply chains underscores a broader shift toward environmentally conscious business practices within the realm of supply chain management. It involves reevaluating traditional approaches to procurement, transportation, and production to align with sustainability goals. By integrating sustainability considerations into supply chain strategies, organizations can enhance operational efficiency while simultaneously reducing their carbon footprint and ecological impact.

Prof. John Lim further emphasized the interconnected nature of supply chain challenges, advocating for a holistic approach to addressing these issues. Rather than treating problems in isolation, Prof. John stressed the necessity of viewing supply chain issues as a continuum and breaking down organizational silos to effectively tackle systemic challenges. This integrated approach entails fostering collaboration among diverse stakeholders and sectors to build sustainable and resilient supply chains.

Mr. Chris and Prof. John Lim's perspectives highlight the need for collective action and collaboration across industries and disciplines to drive meaningful change toward sustainable supply chain practices. This entails embracing innovative solutions, leveraging technological advancements, and fostering partnerships to achieve environmentally responsible supply chains that prioritize both quality assurance and ecological sustainability. By adopting such an integrated approach, organizations can navigate complex supply chain dynamics more effectively and contribute positively to broader environmental stewardship efforts.

In conclusion, the discussion on pharmaceutical supply chains have highlighted various challenges and emphasized the need for teamwork and innovation. From ensuring high-quality standards to improving transparency and embracing new technologies, experts are working together to strengthen these vital chains. Insights from industry leaders stress the importance of adapting to change, adopting eco-friendly practices, and collaborating effectively. Doing so allows resilient and efficient supply chains that prioritize patient safety and global health to be built. As issues like the COVID-19 pandemic and environmental sustainability are addressed, it's clear that a united effort and forward-thinking approach are key to shaping the future of pharmaceutical supply chain management.

Utilizing Innovative Financing to Strengthen Resilient Health Systems

Moderator:

Mr. Stefan Nachuk
Philanthropy Lead,
Morris Brothers LLC

Panelists:

Dr. Chang Liu
Chief Executive Officer,
ASK Health Asia

Dr. Jack Langenbrunner
Advisor,
Social Health Insurance, Indonesia

Dr. Alexo Esperato
Senior Health Specialist,
Asian Development Bank

Dr. Kerri Elgar *(Virtual)*
Senior Policy Analyst (Global Health and Development), OECD DCD

Prof. Jeremy Lim
Director, Leadership Institute for Global Health Transformation, Saw Swee Hock School of Public Health, NUS

Thematic Co-ordinator

Mr. Maulik Chokshi
Deputy Country Director (Technical),
ACCESS Health International

ACCESS health international

Context:

Globally the need of financing healthcare is ever increasing, with the increasing number of aging population, the emergence of new diseases, and the rising cost of care. Shocks like pandemic, conflict, environmental disaster, and similar distress situations put further stress on financing healthcare, not only in terms of increased need of financial resources but also innovative mechanisms through which additional resources can be mobilized.

According to the OECD report, 2023, it is estimated that the current financial gap to achieve Sustainable Development Goal 3 is around 4.3 trillion dollars. Currently, a gap in contribution is witnessed in most of the developed countries post the COVID-19 pandemic. This further merits the need to identify innovative financing mechanisms.

De Ferranti and colleagues in 2008 had an interesting working paper on Innovative Financing for Global Health, as part of the Global Financing Institute, where they mentioned the existence of around 64 innovative financing options being used to finance health. Most of them are still in use but now clubbed under 6-7 different buckets. The Montererry Consensus, Doha Declaration, and Addis Abbaba Declaration also reinforced the need to explore innovative financing to meet domestic and global health financing gaps.

The innovative financing mechanisms that are used widely include Results Based Financing, Catalytic Funding, Impact Investment, Socially Responsible investment, and use of new channels for taxations (OECD 2023). These financing mechanisms are used by different countries in different settings with different objectives and have achieved success to various degrees. Post pandemic most of the countries are still in need of strengthening their capacity to mobilize resources to further strengthen the health systems. This session on Innovative financing for health systems aims to enhance learnings from the currently adapted innovative financing tools.

Objectives

The session aims to improve the understanding of the role innovative financing can play in strengthening health systems and also the approaches that facilitates in enhancing efficiency of innovative financing as a tool.

Panel discussion

Role of innovative financing mechanisms in health system resilience

Mr. Stefan Nachuk initiated the panel discussion by directing a question to Dr. Alexo Esperato regarding the Asian Development Bank's (ADB) initiatives in promoting health system resilience and the pivotal role of innovative financing mechanisms within these initiatives.

Dr. Alexo elaborated on ADB's comprehensive efforts aimed at enhancing health systems resilience, particularly in the context of pandemic preparedness and climate change adaptation. Dr. Alexo highlighted a significant project in the Greater Mekong Subregion (GMS), spanning Vietnam, Thailand, and Laos, which involved a substantial $125 million investment focused on providing technical assistance for health systems. He emphasized that ADB has also committed substantial funding toward climate-health endeavors, with a requirement for health projects to incorporate climate mitigation or adaptation measures to qualify for ADB financing.

In discussing innovative financing mechanisms, Dr. Alexo underscored the role of initiatives like the Insurance Fund for Climate Adaptation in the Pacific (IF-CAP), which not only raises funds but also facilitates knowledge-sharing and partnership-building to bolster health system resilience against climate change impacts. Dr. Alexo further elucidated on ADB's primary financing instruments, including sovereign loans, grants, and technical assistance projects. These instruments undergo thorough preparation and offer favorable terms such as concessionary loans with low interest rates, particularly beneficial for lower-income countries striving to enhance their health infrastructure.

Moreover, Dr. Alexo noted the exploration of additional funding avenues such as green and blue bonds, as well as insurance mechanisms, to further diversify and augment financial resources available for health system resilience projects. However, he highlighted a critical

financing gap within ADB's focus, noting that while climate infrastructure projects receive prioritization, investments in health facilities tend to be relatively overlooked. He illustrated this gap with a case study from Laos PDR, where there is a strong interest in developing environmentally friendly and climate-resilient hospital infrastructure but faces constraints due to limited borrowing capabilities. Dr. Esperato proposed that the utilization of bond mechanisms could potentially bridge this financing gap, enabling local authorities to access essential funds for hospital refurbishments and other critical health infrastructure enhancements.

While climate infrastructure projects often receive prioritization, health facility investments are relatively overlooked. A case study from Laos PDR highlights the need for environmentally friendly and climate-resilient hospital infrastructure, but limited borrowing capabilities pose a challenge. Utilizing bond mechanisms could bridge this financing gap, enabling local authorities to fund critical health infrastructure enhancements.

Public-private partnerships in health financing

Collaboration between the public and private sectors is essential for optimizing healthcare funding and service delivery. Integrating private sector resources into the public framework, using mechanisms like capitation payment and volume-based purchasing, enhances cost-efficiency and quality. A case study from Shanghai demonstrates successful integration through private commercial health insurance, improving coverage and affordability via government channels.

Dr. Chang Liu delved into China's progress in healthcare financing, emphasizing the implementation of a supplementary model built upon existing health financing schemes. China has achieved significant strides by establishing universal social insurance covering its entire population, thereby promoting equity in healthcare access. Two additional layers of insurance, namely charitable insurance and private health insurance have been introduced to ensure broader coverage.

In exploring the role of the private sector in innovative financing, Dr. Chang advocated for collaboration between the public and private sectors to optimize funding and service delivery. Instead of creating a dual system, efforts are made to integrate private sector funding and products into the public sector framework. Mechanisms such as capitation payment and volume-based purchasing are employed to maximize cost-efficiency while ensuring quality healthcare provision. A case study from Shanghai illustrates how a significant portion of the population subscribes to private commercial health insurance, facilitated by government channels to enhance coverage and affordability.

Dr. Chang addressed common misconceptions surrounding the private sector's involvement in health financing, emphasizing the need to understand their aims and goals beyond profit motives. Effective regulations and oversight are deemed crucial in mitigating risks and ensuring equitable healthcare access. Additionally, charitable organizations are identified as potential partners to expand coverage, as evidenced by initiatives such as the provision of specialized healthcare services with external funding.

Utilization of various mechanisms to raise funds for healthcare financing

Prof. Jeremy Lim's discussion on the mobilization and utilization of funds in healthcare emphasized significant initiatives such as the XPRIZE for advancements in longevity. He highlighted Singapore's effective use of funds for health promotion and primary care, citing it as a model for integrating market mechanisms rather than creating new ones. For instance, the implementation of MediShield allows private providers to offer integrated plans, thereby alleviating the burden on public financing. Additionally, he proposed offering matching funds or channels to attract philanthropic contributions, encouraging broader regional conversations on aging and retirement costs.

Dr. John C. Langenbrunner touched upon various innovative financing methods, including results-based financing, catalytic funding, impact investing, and socially responsible investing through new taxation channels. He referenced Indonesia's financing reforms, such as increased taxes on tobacco and sugary beverages, as examples of innovative financing elements, underscoring the importance of strong leadership in driving such reforms. However, he cautioned against potential downsides such as inefficiencies in funding mechanisms and emphasized the necessity of transparency in spending to ensure accountability.

Innovative financing methods like results-based financing, catalytic funding, impact investing, and socially responsible investing through new taxation channels were discussed. Indonesia's financing reforms, including increased taxes on tobacco and sugary beverages, were highlighted. Strong leadership is crucial for such reforms, but potential inefficiencies in funding mechanisms must be addressed, emphasizing the need for transparency and accountability in spending.

Dr. Kerri Elgar discussed taxation as a mechanism for raising solidarity funds in healthcare, acknowledging the challenges associated with engaging the private sector and highlighting the mixed success of innovative financing approaches. She emphasized the critical link between health system resilience and innovative financing, stressing the need for balanced funding priorities and innovative mechanisms in less economically endowed countries undergoing health reforms. Examples included initiatives like GAVI and the Global Fund, as well as air ticket levy schemes adopted by countries addressing global sustainability challenges.

Taxation can raise solidarity funds for healthcare, but private sector engagement remains challenging, and innovative financing has seen mixed success. Linking health system resilience to innovative financing is crucial, especially in less economically endowed countries. Examples include GAVI, the Global Fund, and air ticket levy schemes addressing global sustainability challenges.

Together, these perspectives underscore the multifaceted approaches to mobilizing and utilizing funds in healthcare, ranging from market integration strategies to innovative financing methods like results-based funding and taxation. The discussions highlighted the importance of strong leadership, transparency in funding allocation, and the role of innovative financing mechanisms in strengthening health systems and addressing healthcare challenges in diverse contexts around the world.

CVD care resilience in APAC

Moderator:

Dr. N. Krishna Reddy
Chief Executive Officer,
ACCESS Health International

Panelists:

Dr. Chaiyos Kunanusont
Senior Advisor,
National Health Security Office, Thailand

Dr. Doreen Tan
Associate Professor,
National University of Singapore

Dr. Christian Verdicchio
Chief Executive Officer,
Heart Support Australia

Dr. Raja Ezman Raja Shariff
Head, Heart Failure Centre,
Universiti Teknologi MARA Faculty of Medicine

Thematic Co-ordinator:

Mr. Timothy Fang
Senior Consultant,
ACCESS Health International

Presentations:

Dr. Chaiyos Kunanusont
Quality, Value Based CVD Care

ACCESS health international

Context:

Cardiovascular disease (CVD) – which refers to several conditions affecting the heart and blood vessels – is the leading killer among chronic diseases in Asia, with 6 in 10 global deaths resulting from CVD alone. CVD is especially lethal because it can go undetected until an acute, life-threatening incident requires hospitalization – a heart attack, stroke, or cardiac arrest.

CVD is an important variable for adverse outcomes with COVID-19 infections. Infections of any etiology and any severity are a trigger for heart attacks and strokes. Hence, CVD control becomes essential to reduce excess mortality during pandemics. In addition, many treatments for CVD like antiplatelets, anticoagulants, and heart failure medicines are highly essential and continuation of these treatments is vital during healthcare disruptions. Lastly, ensuring emergency cardiac services during disruptions is vital. Hence, an effective CVD control and response system becomes a component of resilient health systems.

CVD is a complex health problem with multiple risks, causes, types, and broader trends that favour an upswing in the CVD burden in the Asia-Pacific. However, we have yet to see concerted action to address specific gaps in CVD prevention and control. Public and policy awareness of the CVD burden on health systems is also low.

The Asia-Pacific Cardiovascular Disease Alliance (APAC CVD Alliance), established by ACCESS Health International, is a multisectoral coalition launched in June 2023 comprising patients, health professionals, academia, global health think-tanks, corporate partners, and policymakers, and intends to inspire policy change by elevating public and policy awareness of the urgent need to tackle CVD. The Alliance launched a report examining CVD policy in nine APAC countries and the need for cohesive national CVD strategies at a webinar in November 2023. A multistakeholder dialogue with patients, professionals, and nonprofit organizations was held in Thailand in January 2024. More engagements are scheduled in the region.

Objectives

- To consolidate multistakeholder perspectives from patients, professionals, private sector and policymakers on the gaps and solutions for better cardiovascular care.
- To generate increased awareness and support for CVD control in the region.

Panel Discussion

Political commitment in CVD

Dr. N. Krishna Reddy emphasized that political commitment to effectively control CVD involves strong government leadership and advocacy. He drew attention to the link between infectious diseases and acute cardiovascular events, advocating for comprehensive health policies that address both immediate triggers and long-term management of cardiovascular conditions. By posing critical questions about the adequacy of healthcare services in managing chronic conditions like heart failure, acute myocardial infarction (MI), stroke, and limb ischemia, Dr. Reddy highlighted the urgency of prioritizing CVD prevention and treatment within national health agendas.

Dr. Christian Verdicchio's account of challenges faced in Australia reflected the consequences of inadequate political commitment to combatting CVD. Despite ongoing discussions and advocacy efforts, there remains a prevailing reluctance to take decisive action. This hesitance is concerning given the substantial toll cardiovascular diseases exact on Australia's population and healthcare system. Dr. Verdicchio highlighted the current challenges – shortages of primary care physicians and alarmingly high rates of rehospitalization as tangible impacts of insufficient political commitment in tackling CVD.

Dr. Christian's exploration of peer support groups as a potential strategy to mitigate healthcare costs and enhance patient outcomes underscores the need for innovative approaches in the absence of robust political support. Peer support groups can provide valuable emotional and practical assistance to individuals living with CVD, potentially alleviating some of the strain on healthcare resources.

There is a need for government leadership in controlling CVD and addressing the link between infectious diseases and cardiovascular events. Ensuring healthcare adequacy for conditions like heart failure, MI, stroke, and limb ischemia highlight the importance of prioritizing CVD in national health agendas. Challenges due to insufficient political commitment, including physician shortages and high rehospitalization rates, underscore the advocacy for peer support groups to improve outcomes.

Multidisciplinary approach in addressing CVD

The perspectives shared by Dr. Chaiyos Kunanusont, Dr. Doreen Tan, and Dr. Raja Ezman Raja Shariff collectively highlight the importance of adopting a comprehensive and multidisciplinary approach to tackle cardiovascular diseases (CVD) effectively.

Dr. Chaiyos Kunanusont emphasized the necessity of effective governance structures and a multidisciplinary approach in addressing CVD comprehensively. He outlined a governance triangle that integrates community perspectives, healthcare providers, and systemic disease control approaches. Dr. Chaiyos stressed the importance of standardizing service quality, enhancing public education, fostering patient participation, and advocating for policies that support sustainable resources and high-quality services. This approach facilitates the transition toward value-based care, emphasizing outcomes and patient satisfaction as key metrics.

Dr. Doreen Tan expanded on this approach by proposing a multifaceted strategy focusing on secondary prevention and patient education, drawing from innovative initiatives in Singapore. She highlighted the role of digital health programs in delivering personalized care and promoting patient adherence to treatment regimens. Dr. Doreen underscored the significance of patient education in overcoming barriers to treatment adherence, emphasizing the need for healthcare professionals to undergo training that prioritizes patient values and beliefs to optimize treatment outcomes.

> The importance of a multidisciplinary approach to tackle cardiovascular diseases (CVD) requires effective governance structures, standardizing service quality, enhancing public education, fostering patient participation, and advocating for supportive policies. Personalized care plays a crucial role in secondary prevention and promoting patient adherence. Training healthcare professionals to prioritize patient values is essential for transitioning towards value-based care that emphasizes outcomes and patient satisfaction

Dr. Raja Ezman Raja Shariff further emphasized the importance of continuity of care beyond hospital settings, particularly in addressing clinician inertia and leveraging technology for remote patient monitoring and timely interventions. He shared insights from Malaysia's implementation of virtual clinics, highlighting the transformative potential of technology in enhancing healthcare delivery and improving patient outcomes in CVD management. Dr. Raja Ezman's narrative underscores the critical role of multidisciplinary teams and technological advancements in ensuring seamless healthcare transitions and optimizing patient care.

Together, these perspectives advocate for a holistic approach that integrates governance, patient education, technology, and multidisciplinary collaboration to effectively address the complex challenges posed by cardiovascular diseases. By fostering innovative strategies and leveraging advancements in healthcare delivery, practitioners and policymakers can enhance the quality of care, improve patient outcomes, and ultimately reduce the burden of CVD on individuals and healthcare systems globally.

Emphasizing continuity of care beyond hospitals, addressing clinician inertia, and leveraging technology for remote monitoring are critical in CVD management. Insights from virtual clinics highlight technology's transformative potential in enhancing healthcare delivery. The role of multidisciplinary teams and technological advancements is crucial for seamless healthcare transitions and optimized patient care.

In conclusion, the panel discussion co-hosted by the **Asia-Pacific Cardiovascular Disease Alliance** has shed light on the multifaceted challenges facing the effective management of cardiovascular diseases. Their insights underscore the urgent need for political commitment, multidisciplinary approaches, and innovative solutions to address the intricate interplay between infectious and cardiovascular diseases. From advocating for standardized service quality and patient education to leveraging digital health initiatives and technological advancements, the discourse emphasizes a holistic strategy aimed at enhancing healthcare systems' capacity to combat cardiovascular diseases. It is evident that fostering collaboration among healthcare stakeholders and implementing comprehensive governance structures are essential steps towards achieving sustainable improvements in patient outcomes and reducing the burden of cardiovascular diseases on global health systems.

Ensuring Preparedness and Building Resilience of *Healthcare Provision During Public Health Emergencies*

Moderator:

Mr. Girish Bommakanti
Director, Operations and Growth Strategy,
ACCESS Health International

Panelists:

Dr. Chawisar Janekrongtham
Head of Secretariat, Asia-Pacific Action Alliance on Human resource for health (AAAH)

Dr. GSP Ranasinghe
Director, Primary Care Service,
Ministry of Health, Sri Lanka

Dr. Vikash R. Keshri *(Virtual)*
Executive Director, State Health Resource Center, Chhattisgarh, India

Ms. Diah Satyani Saminarsih
Founder and CEO, Center for Indonesia's Strategic Development Initiatives

Dr. Sanjay Sarin
Vice President,
FIND - Diagnosis for All

Thematic Co-ordinator:

Dr. Shweta Singh
Senior Technical Specialist (Research and Public Health), ACCESS Health International

Presentations:

Mr. Manoj Jhalani
(Keynote) -
The role of primary healthcare in building health systems resilience

ACCESS health international

Context:

Effective healthcare provision relies on several components: infrastructure functioning, availability of trained Human Resources for Health (HRH), access to medicines, diagnostics, labs, medical supplies and communications. Service delivery or provisioning is an immediate output of the abovementioned inputs into the health system. Although there are no universal models for good service delivery, some familiar, well-established traits exist in the literature, such as coordination, comprehensiveness, accessibility, coverage, continuity, quality, person-centerednes, accountability, and efficiency.

Delivering routine healthcare services and additional emergency health needs can be highly challenging during an emergency. Public Health emergencies induce acute surges in demand for healthcare services. Throughout the COVID-19 pandemic, numerous nations have reported significant disruptions in the regular provision of services, particularly essential health services. The decline in the provision of critical health services resulted from lack of policies aimed at accommodating surge capacity during COVID-19. These measures included reducing health workers at the primary healthcare level to expand capacity for the acute COVID-19 response and directing facilities to close due to a lack of guidelines, operational standards, and infection prevention and control mechanisms.

Resilient health systems should meet these surges without affecting essential healthcare services. The COVID-19 pandemic induced unique demands on health systems across the world. Different systems responded differently to these demands. Understanding how systems respond effectively will offer unique learnings that can be incorporated into health systems as they aim to become more resilient. Therefore, countries must strengthen their health systems to prepare, prevent, detect, and respond to future health emergencies improvised through increased investment, resource mobilization and better collaboration, including advocacy. A few standard healthcare provision system elements are vital for effective public health emergency preparedness:

1. Laboratory and Diagnosis

Strategic diagnostic laboratory testing is one of the cornerstones of managing public health emergencies. While developing and deploying diagnostic tests for a public health emergency, few countries could develop and implement effective diagnostic tests and screening strategies. For example, South Korea and Singapore were able to contain the recent COVID-19 pandemic through strict isolation, contact tracing and aggressive testing. However, during the recent pandemic, clinical uncertainty and care fragmentation remained one of the challenges. However, the challenges varied from pre-analytical and analytical errors and false test results to supply chain difficulties. The false test results were also

rampant during the recent pandemic due to asymptomatic cases and sampling errors, leading to inconsistencies in the actual burden of cases. The lack of personal protective equipment and diagnostic screening tests were some of the issues in many clinical settings. Countries faced challenges setting up the necessary lab infrastructure to handle extensive testing, particularly in low-resource countries. Diagnosis is hindered by resource constraints and the urgency to deploy effective testing strategies.

2. Human Resources for Health

One of the pillars of healthcare provisioning is human resources for health, supporting the delivery of quality care. Dedicated HRH is required for emergency prevention, preparedness, and response. Meanwhile, key challenges emerged during the recent pandemic, including staff shortages, increasing burnout, fear of contracting diseases, etc. It is essential to look at the mental health status of the health workers and provide mental support during a crisis. Flexible working hours and implementing effective recruitment strategies can be adapted to overcome some of these challenges. Bridging the current skill and knowledge gaps will be essential for better managing future health emergencies and challenges. Similarly, implementing robust safety measures and offering training on mitigating the risk of infection can boost their confidence to work during a high workload.,

3. Digital Interventions

Digital interventions are pivotal in public health emergencies by facilitating rapid communication, contact tracing, and data management. Mobile apps, telehealth platforms, and digital surveillance tools enhance real-time monitoring of outbreaks, enabling quick response and resource allocation. E-health and telemedicine were effective modes of service delivery during the recent pandemic. However, there were many challenges for its implementation. Technical barriers such as poor internet connection and lack of access to technology were barriers to its adoption. Patient privacy, data confidentiality, and data security are a few more issues that need to be addressed for the secure exchange of medical information. The traditional service methods were replaced by virtual communication affecting the doctor-patient relationship. Thus, searching for ways to strengthen this relationship during virtual communications is necessary. Similarly, the use of telemedicine requires training for both healthcare professionals and patients. Inadequate training can hinder the implementation of such services and can discourage its adoption.

4. Resource Management

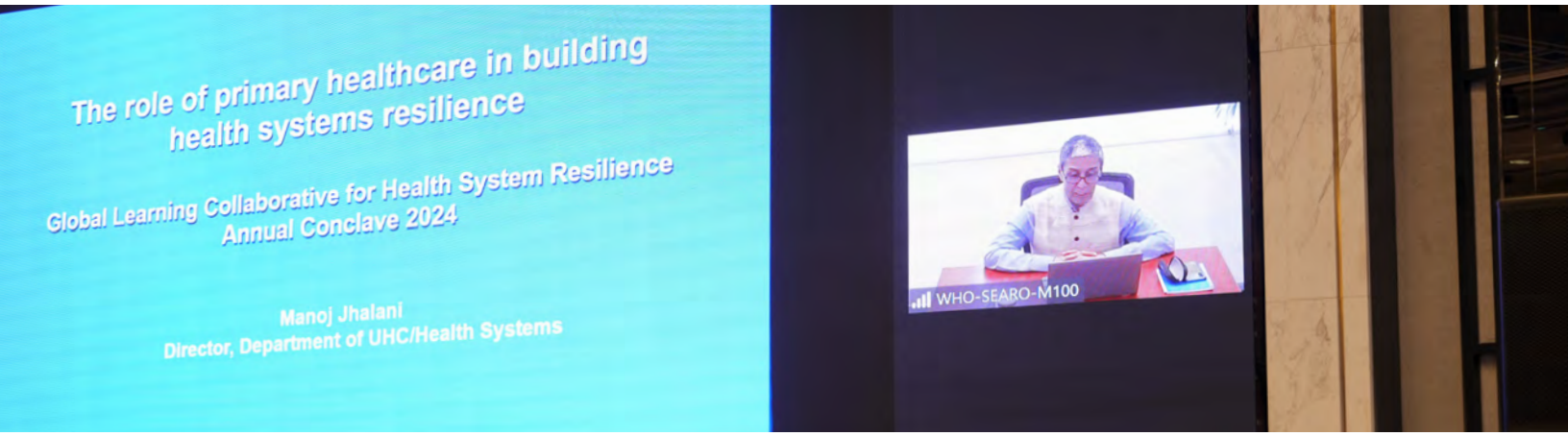
Building a robust public health provision system involves careful consideration of various factors, including bed capacity, equipment availability, investments, and drug supplies. This consists of optimizing logistics, securing medical equipment, and strategically deploying personnel. Efficient stockpiling, streamlined supply chains, and international collaboration ensure timely access to critical resources. Financial investments support healthcare infrastructure, staffing, and research for effective response. Coordination between government, NGOs, and global entities is crucial to mobilize resources swiftly, addressing challenges like shortages and ensuring a robust, well-prepared healthcare system during emergencies.

Objectives:

- How do we measure that we are effectively prepared for any public health emergency? What systematic checks should be in place?
- To discuss how to build effective resilience and preparedness for the healthcare provision during public health emergencies
- To understand the key critical steps to strengthen healthcare provision in testing, diagnosis, workforce, capacity building, organizing resources (Drugs and Equipment) and technology in the given resource constraints setting in various countries.
- To review the steps that have been undertaken, progress post-pandemic and broad time frames to be looked at in building resilience and preparedness.

Session Keynote

Mr. Manoj Jhalani's keynote address gave comprehensive insight into the importance of primary healthcare, community empowerment, and multisectoral action as indispensable pillars for advancing both Universal Health Coverage (UHC) and ensuring health security and well-being. These components play a vital role in navigating turbulent times marked by economic, technological, geopolitical, and environmental threats.



He highlighted that it is imperative to take proactive measures to address existing gaps, as the cost of inaction far outweighs the cost of action. He pointed out how political commitment emerges as a key driver in fostering resilience and spearheading transformative changes, especially in the aftermath of the COVID-19 pandemic. To pave the way for a robust post-pandemic recovery and facilitate the transformation of primary healthcare systems, it is crucial to establish a strong foundation in primary healthcare. This entails not only enhancing access to essential health services but also fostering community trust and engagement. Additionally, creating and promoting enabling environments for research, innovation, and continuous learning are essential to adapt to evolving healthcare needs and challenges. By prioritizing these efforts, this allows for health systems to build back better, ensuring equitable access to quality healthcare for all, and fortify healthcare systems against future crises.

Primary healthcare, community empowerment, and multisectoral action are essential for advancing Universal Health Coverage and ensuring health security. Proactive measures, political commitment, and fostering trust are crucial for resilience and transformative changes post-pandemic. Enhancing access, promoting research, and continuous learning are key to building robust health systems.

Panel Discussion

Community as the backbone of health resilience

Dr. Chawisar Janekrongtham highlighted how the Resilient Health Workforce Framework (RED) delves into the intricate strategies required to build and sustain a resilient health workforce, particularly in the context of mobilizing resources swiftly and effectively during health crises. The RED framework draws inspiration from successful models like Thailand's utilization of village health volunteers to enhance Universal Health Coverage (UHC), especially in underserved and remote areas lacking traditional healthcare infrastructure. Key to the RED framework is the deployment of village health volunteers across districts and villages, positioning them as crucial pillars of healthcare accessibility. These volunteers play a pivotal role in bridging gaps in healthcare delivery by providing basic services and health education to communities that may otherwise struggle to access medical care.

Dr. Chawisar underscored the importance of establishing robust emergency operations systems within the RED framework. This includes the formation of preventive and Critical Administrative and Therapeutic Hospital (CATH) teams, essential for setting up emergency

facilities swiftly in response to pandemics or natural disasters. These systems are critical for managing escalating healthcare demands during crises, ensuring prompt and effective responses to emergent health challenges. Moreover, essential public health skills are emphasized as a cornerstone of the RED framework.

Dr. Chawisar stressed the necessity for all healthcare professionals to possess fundamental skills, such as local risk assessment and crisis management, enabling them to address a diverse range of threats effectively. By empowering healthcare workers with these skills, communities are better equipped to mitigate risks and respond proactively to emerging health challenges.

Healthcare professionals must possess fundamental skills, such as local risk assessment and crisis management, enabling them to address diverse threats effectively. By empowering healthcare workers with these skills, communities can better mitigate risks and respond proactively to emerging health challenges.

Dr. Chawisar highlighted the comprehensive approach encapsulated in the Resilient Health Workforce Framework (RED). This framework emphasizes leveraging community-based resources, establishing robust emergency response systems, and equipping healthcare professionals with essential public health skills to build resilience and enhance healthcare accessibility, particularly in resource-constrained settings prone to health crises. By implementing the RED framework, countries can strengthen their health systems, improve emergency preparedness, and ultimately enhance the overall resilience of their healthcare workforce to address evolving health threats effectively.

Digital technology for resilience

The topic on the integration of digital technology into the health workforce also emerged during the panel discussion with a focus on how digital technology has emerged as a critical strategy for ensuring resilience in healthcare systems.

Telemedicine has been highlighted for its ability to provide equitable access to healthcare services while alleviating burnout among healthcare providers. By leveraging telemedicine platforms, healthcare professionals can deliver care remotely, reaching underserved populations and reducing the strain on in-person healthcare services.

Additionally, real-time monitoring dashboards for health workforce management have been identified as indispensable tools for assessing competency levels and facilitating efficient resource mobilization during emergencies. These systems enable authorities to monitor and optimize workforce distribution, ensuring that healthcare personnel are deployed effectively to meet evolving demands, especially in crisis situations.

Primary care and pandemic response

When it comes to the intersection of primary care and pandemic response efforts, Mr. Girish Bommakanti engaged Ms. Diah Satyani Saminarsih on her experience with primary care during the COVID-19 pandemic, particularly within the context of the CISDI PHC initiative in Indonesia. Ms. Saminarsih emphasized the interconnected nature of health system strengthening and emergency response efforts. In Indonesia, efforts to strengthen primary healthcare infrastructure have been integrated with pandemic response initiatives, fortifying the overall healthcare system and enhancing community resilience. Investments in diagnostic and laboratory capacities have supported more robust testing and surveillance capabilities, crucial for effective pandemic management.

> There is a need to emphasize the interconnected nature of health system strengthening and emergency response efforts. Integrating primary healthcare infrastructure with pandemic response initiatives enhances community resilience. Investments in diagnostic and laboratory capacities support robust testing and surveillance, crucial for effective pandemic management.

Key Factors of healthcare resilience

Innovative financing mechanisms have been employed to support primary healthcare centers and community-based initiatives, ensuring sustained support for essential healthcare services. By leveraging these integrated approaches, Indonesia has been able to adapt and strengthen its healthcare infrastructure in response to the COVID-19 pandemic, fostering a more resilient and responsive healthcare system. The integration of digital technologies combined with a strategic alignment of primary healthcare strengthening

with pandemic response efforts exemplify innovative approaches to enhancing healthcare resilience. These efforts underscore the importance of leveraging technology, investing in healthcare infrastructure, and implementing holistic strategies that prioritize community well-being and healthcare system preparedness in the face of evolving health challenges.

Strategic planning and adaptive leadership proved to be key factors in ensuring healthcare resilience during shocks. Dr. GSP Ranasinghe elaborated on Sri Lanka's experience when Mr. Girish Bommakanti asked about his learnings from the COVID-19 pandemic. Dr. GSP Ranasinghe highlighted the importance of adaptive leadership and strategic planning in navigating the COVID-19 pandemic. Sri Lanka's response strategy involved adapting healthcare settings according to the severity of patient influx during different waves of the pandemic, alongside initiatives to bolster diagnostic capacity and ensure the provision of personal protective equipment. Collaborative efforts between the central and provincial governments were crucial in coordinating response measures, while telemedicine played a vital role in optimizing patient care delivery.

There is a need for adaptive leadership and strategic planning in navigating health crises. Adaptive strategies can include adjusting healthcare settings based on patient influx, enhancing diagnostic capacity, and ensuring sufficient personal protective equipment. Collaborative efforts between central and provincial governments and leveraging telemedicine can optimize patient care delivery during pandemics.

Collaboration between public and private entities is another key factor in ensuring healthcare resilience during shocks. Dr. Sanjay Sarin emphasized the significance of private sector engagement in diagnostics during public health emergencies, underscoring the need for collaboration between public and private entities to augment testing capacity. Lessons from South Africa highlighted the importance of diversifying diagnostic supply chains and investing in indigenous manufacturing capabilities to enhance resilience. Real-time data sharing platforms like GISAID were identified as essential for facilitating global collaboration and information exchange on infectious diseases.

Lastly, Dr. Vikash R. Keshri stressed the importance of real-time monitoring in planning for public health emergencies, particularly in resource-constrained settings. Continuous monitoring of key indicators and preparedness measures is critical for bolstering health system resilience and optimizing resource allocation. Community health workers play a pivotal role in providing real-time monitoring and data collection at the grassroots level, ensuring that response efforts are tailored to local needs and circumstances.

In conclusion, addressing healthcare challenges, particularly during emergencies, demands a multifaceted approach that integrates resilient infrastructure, skilled human resources, effective diagnostics, and strategic resource management. The COVID-19

pandemic highlighted the need for adaptable health systems that can handle surges without compromising essential services. Key components include strategic diagnostic capabilities, robust human resource support, innovative digital interventions, and efficient resource management. Lessons from the pandemic underscore the importance of proactive measures, political commitment, and community empowerment in strengthening health systems.

The session demonstrated that successful health responses involve not only immediate crisis management but also long-term investments in healthcare infrastructure, workforce training, and technology integration. Collaborative efforts between public and private sectors, along with innovative financing mechanisms and real-time data utilization, are crucial for building resilient health systems. As countries continue to navigate evolving health threats, prioritizing these strategies will enhance preparedness, ensure effective service delivery, and foster robust, adaptable healthcare systems capable of withstanding future challenges.

Equity in Healthcare Careers for *Health Systems Resilience*

(A Conversation Curated by Women in Global Health Singapore)

Moderator:

Ms. Lindsay Davis
Founder,
FemTech Association Asia

Opening Address:

Dr. Uma Aysola
Director (Global),
Communications and Partner Engagement,
ACCESS Health International

Session Keynote:

Ms. Moutushi Sengupta
Chief of Capital Mobilisation,
Asian Venture
Philanthropy Network

Panelists:

Dr. Alice Chu
Senior Director Market Access & Medical Affairs, Glaukos

Dr. Hsien-Hsien Lei
Chief Executive Officer,
American Chamber of Commerce

Dr. Hishamuddin Badaruddin
Founder & Chief Executive Officer,
Noviu Health

Dr. Jenny Low Guek Hong
Professor,
Duke-NUS Medical School

Ms. Marion Neubronner
Associate Director, Singapore Management University Institute of Innovation and Entrepreneurship

Thematic Co-ordinator:

Dr. Marie Lamy
Director - Partnerships Development,
ACCESS Health International

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Context:

As a topic of common interest to the WGH Singapore members, this first WGH Singapore event of the year focused on leadership and careers for women in health, in Singapore. A resilient health system requires a resilient health workforce. This cannot be achieved without gender equity. All genders should have equal opportunity to contribute and deliver timely, quality healthcare services.

The session explored barriers to equitable careers in healthcare, by hearing the personal journeys of women working in health in Singapore. It discussed the pathways and solutions identified to push for greater equity in healthcare careers, and why this matters to build stronger, more resilient health systems.

This event, held during the annual conclave of the GLC4HSR, was a first opportunity this year for WGH network members in Singapore to meet in person. Other interested parties in the GLC4HSR, as well as participants of the conclave got to know more about the WGH movement and its commitments. The panel, as a side event, offered a chance to network and continue to build connections with the broader health community in Singapore.

Objectives:

- Explore barriers to equitable careers in healthcare by hearing the personal journeys of women working in health in Singapore.
- Identify pathways and solutions advocated by these women to promote greater equity in healthcare careers.
- Highlight the significance of achieving equity in healthcare careers for building stronger and more resilient health systems.

Opening Address:

Dr. Uma Aysola kicked off the panel discussion by shedding light on the multifaceted challenges faced by women, particularly in navigating through societal structures entrenched with gender bias. She emphasized the uphill battle women encounter when striving to access opportunities commensurate with their skills and abilities. One significant hurdle highlighted was the pervasive gender bias that permeates various aspects of life, from educational and professional settings to personal interactions.

Dr. Uma underscored the struggle of women in overcoming systemic barriers that restrict their access to resources and mentorship opportunities essential for personal and

professional growth. She highlighted the importance of personal narratives in shaping women's experiences and perceptions of their capabilities. She emphasized the need for women to share their stories and support one another, as personal narratives can serve as powerful tools for empowerment and advocacy. By amplifying diverse voices and experiences, women can challenge stereotypes, break down barriers, and pave the way for greater gender equality and inclusivity.

> Women face significant barriers due to entrenched gender bias, affecting their access to opportunities. Overcoming these challenges involves not only addressing biases but also sharing personal narratives to empower women, challenge stereotypes, and advocate for greater gender equality and inclusivity.

Keynote Address:

Ms. Moutushi Sengupta articulated a poignant perspective on the imperative for effective systems change and scalable transformation, emphasizing the indispensable role of prioritizing equality and inclusion. She underscored the necessity for initiatives to explicitly address and dismantle discrimination and barriers rooted in gender, class, race, ethnicity, sexual identity, disability, and other markers of exclusion. True progress, she emphasized, can only be achieved when marginalized communities are uplifted and empowered.

Ms. Moutushi underscored the pivotal role of women in responding to health crises, emphasizing that most health workers are women. In times of crisis, it is predominantly women who step forward to provide essential care and support, often facing the brunt of the challenges arising from broader global issues. Her insights underscore the urgent need for comprehensive and inclusive approaches to address systemic inequalities and empower

marginalized communities, particularly women. Only through concerted efforts to dismantle discriminatory barriers and prioritize equality can meaningful progress be achieved, both in healthcare and across society.

Highlighting the harsh realities faced by many women, Ms. Moutushi Sengupta shed light on the prevalence of informal work characterized by low pay and productivity. She drew attention to the vulnerability of women in the face of broader global shifts, including the looming threat of climate change. Women, she noted, are disproportionately impacted by these changes, facing heightened risks and challenges due to their precarious employment situations.

> Effective systems change is crucial to tackle discrimination based on gender, class, race, and other factors. True progress requires uplifting marginalized communities and addressing barriers to ensure equality and inclusion, especially in contexts where women play a pivotal role, such as during health crises.

Panel discussion

Challenges identified by each panelist in their respective field was brought to attention by Ms. Lindsay Davis during the panel discussion.

Gender inequalities

Dr. Hishanmuddin Badaruddin delved into the enduring inequalities rooted in gender within healthcare, particularly underscoring their exacerbation during times of crisis. He narrated a poignant story, illustrating the stark reality that gender differences persist, even in crucial

roles vital for upholding the healthcare system. He stressed the imperative for ensuring equity across the health workforce, advocating for comprehensive measures aimed at dismantling barriers and promoting gender parity in all aspects of healthcare delivery.

Dr. Hsien-Hsien Lei provided invaluable insights into the importance of inclusive caregiving discussions, emphasizing the need to acknowledge and support fathers in caregiving roles. She underscored the significance of prioritizing patient outcomes in healthcare delivery and rallying support for marginalized populations, such as migrant workers. Her advocacy for inclusive healthcare practices resonated deeply, emphasizing the pivotal role of equity in fostering resilient and compassionate healthcare systems.

Dr. Jenny Low reflected on her journey in the medical profession, recounting her experiences grappling with gender disparities and stereotypes. She recounted facing sexist questions during specialist interviews and navigating through a profession historically dominated by men. She highlighted the evolution towards greater gender parity in medical education, noting a shift towards a more balanced gender ratio among medical students. She emphasized the importance of mentorship and support networks in empowering women to overcome obstacles and succeed in their careers.

Challenges faced by women

Dr. Alice Chu brought attention to the prevalent tendency among women in Asia to downplay their achievements and the lack of solidarity in supporting each other's advancement. She emphasized the critical need for advocacy and collective action in promoting gender equality within the healthcare sector. Her impassioned call for women to uplift and empower one another resonated as a powerful catalyst for fostering positive change and dismantling barriers to gender equity in healthcare.

Imposter bias

Ms. Lindsay Davis facilitated the insightful discussion on how challenges have been encountered by women in healthcare industries to an illustrious panel of speakers. During which, Dr. Alice Chu articulated the multifaceted challenges encountered by women within her sector. She shed light on prevalent biases such as performance bias and affinity bias, elucidating how these biases often hinder women's career advancement opportunities.

Dr. Alice also brought attention to a prevailing stereotype that women overseeing regional teams are predominantly unmarried and without children, indicating a pervasive misconception that family responsibilities may impede women's leadership capabilities. Urging for systemic change, she emphasized the necessity of implementing robust policies, structures, and governance frameworks within organizations to foster a culture of gender equality and inclusivity.

> Advocacy and collective action are essential to support women's advancement in various fields. Addressing issues like imposter syndrome and stereotypes about leadership capabilities can drive systemic changes, promote gender equality, and dismantle barriers to leadership opportunities.

Ms. Marion Neubronner passionately addressed the phenomenon of imposter syndrome prevalent among women in healthcare professions. She delved into the deeply ingrained attitudes of inferiority that often undermine the confidence of accomplished women, hindering their advancement into leadership roles. She also highlighted the pressing challenges faced by healthcare workers, including burnout and cognitive fog, emphasizing the urgent need for advocating for better support structures and recognition for their invaluable contributions to healthcare delivery.

Collectively, the discussions underscored the multifaceted challenges and inequalities persisting within the healthcare sector, while also highlighting the transformative potential of concerted efforts aimed at promoting gender equality and inclusivity.

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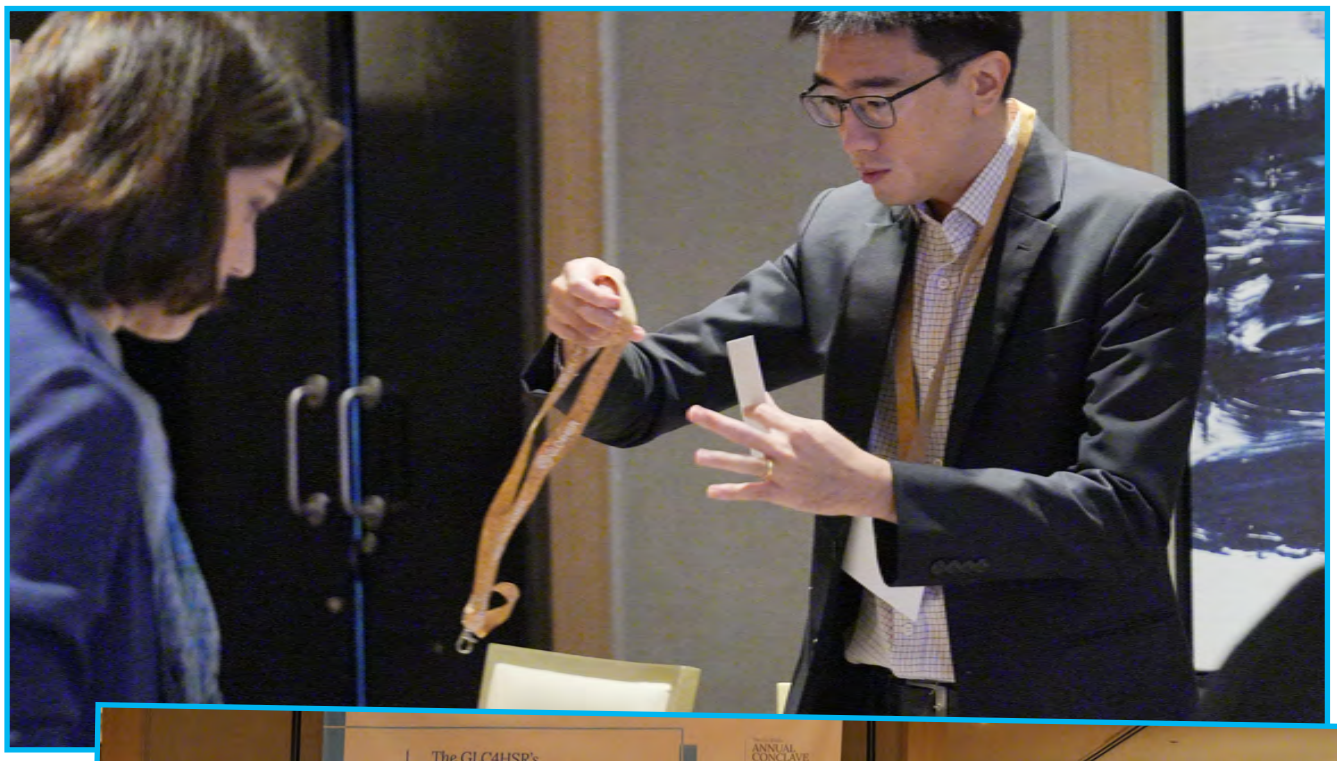


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