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FOR HEALTH SYSTEMS RESILIENCE

The GLC4HSR's
ANNUAL CONCLAVE 2023
March 10-11, 2023, New Delhi

A Compendium of Dialogues and Insights

THE PROCEEDINGS

GLC4HSR ANNUAL CONCLAVE 2023

March 10-11, 2023
India Habitat Centre, New Delhi

ACCESS health international

Supported by The Rockefeller Foundation

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INSIGHTS SUMMARY

The first Annual Conclave of the Global Learning Collaborative for Health Systems Resilience (GLC4HSR) was held on the 10th and 11th of March 2023 in New Delhi, India. Over 40 speakers from 18 countries participated in the two-day conclave. The speakers represented global UN agencies, national governments, the private sector, civil society organizations, donors, and academia.

With close to 150 health systems stakeholders in physical attendance and over 400 online attendees from across 20 countries, the event showcased the latest thinking involved in building resilient health systems. Being the first in the series, the conclave was designed to better understand the concept of health systems resilience and its assessment. The sessions were organized around people and their health as the central purpose of health systems, four core functions (provisioning, supplying, financing, and governing), and three cross-linking functions (information, communication, and relations), to reflect the new health systems framework that evolved as part of the learning journey undertaken by the GLC4HSR during its first year.

The deliberations over two days yielded rich insights from various stakeholders with different perspectives. These are summarized below:

Health Systems Performance Assessment:

Existing health systems and their performance assessment frameworks and health security assessment frameworks could not reliably predict the performance of various health systems in the face of the COVID-19 pandemic. Hence, there is a need to evolve health systems resilience assessment frameworks based on the lessons learned during the pandemic.

People and their Health:

Community health literacy, engagement, and participation in governance are important for building resilience, starting at the local level and spreading to higher levels.

Provisioning:

While strengthening conventional surveillance systems is paramount, there is also a need to explore the pros and cons of integrating digital and genomic surveillance systems into traditional systems.

There is an urgent need to build the capacities of public health professionals who are required to manage increasingly complex health systems.

Strong primary healthcare systems are critical to ensure the continuity of essential services during health crises

Robust assessment and monitoring systems to identify demand-supply gaps in healthcare services and goods coupled with simulation systems that test various health shock scenarios are critical to prepare provider systems.

As a majority of health systems evolve into mixed healthcare provider systems, proactive private sector engagement in preparedness and response is necessary.

Adaptive innovations in healthcare delivery witnessed during the pandemic need reevaluation for their integration into the new normal.

Unlike infrastructure and health goods, a health workforce cannot be created overnight. Hence, health systems should plan for surplus capacity in human resources to respond to and absorb the shocks.

Financing:

The concept of pooling, priority setting, and allocation used in health financing should be applied to healthcare infrastructure, health workforce, and health goods during crises situations.

While the pandemic fund may address financial needs to some extent, countries should drive efficiency in public health financial management systems. Purchasing low-value services can unlock additional funds, given the limited fiscal space for increasing public health budgets.

Phasing out detrimental subsidies and levying pro-health taxes are some of the means to mobilize additional financial resources.

Ensuring broader social protection is essential to absorbing health shocks.

Supplying:

Supply chain resilience is most vital for overall health systems resilience as witnessed during the pandemic.

Supply chain resilience requires bilateral, multilateral, or global collaboration in research, development, standards, regulations, manufacturing, storing, procuring, and distribution among others.

Supply chain resilience implies having sufficient reserves of essential health goods.

Equitable access to essential medicines and tests can be ensured by further strengthening the concept of global public goods.

Governing:

Strong institutions enable resilience in governance.

Evidence-informed policies are essential for formulating appropriate responses.

Enacting suitable laws is necessary to ensure preparedness and facilitate effective responses during public health emergencies.

Relations:

Nurturing vertical and horizontal relations is crucial to integrating complex systems.

Trust and transparency between key actors (government, private sector, and community) and participatory governance are essential for resilience.

Communications:

Reliable communication from trusted sources is vital to addressing the infodemic stemming from social media and the internet.

Information Systems:

As the digital transformation of health systems becomes increasingly inevitable, prioritizing inclusive digital transformation is essential for bridging the digital divide.

Digital transformation will enhance the agility, efficiency, and effectiveness of health systems in addressing people's health and financing needs consistently and comprehensively.

Investing in an interoperable and integrated national health information system goes a long way in building resilience.

While the Conclave offered profound insights, it is crucial to distill them further into actionable insights. These actionable insights can then be utilized to transform key learnings into impactful action. It is important to recognize that certain insights are applicable at the global level, while others are more relevant at national, subnational, or even local levels.

Global Level:

- Increase financing to strengthen weak national public health systems, enabling them to effectively prevent, prepare for, and respond to public health emergencies.
- Establish mechanisms to ensure equitable and timely access to essential health goods, particularly for underserved populations.
- Foster the harmonization of standards and regulations across countries to expedite access to medical countermeasures during emergencies.
- Promote the development and sharing of digital public goods to facilitate inclusive digital health transformation.

National and Subnational Level:

- Strengthen public health financial management systems.
- Eliminate detrimental subsidies and introduce pro-health taxes.
- Build the capacity for health systems assessment, performance monitoring, disease surveillance, and simulation.
- Make greater investments in the health workforce, including training, recruitment, and retention, to enhance resilience.
- Institutionalize participatory governance by involving communities, civil society organizations, and stakeholders in decision-making processes.
- Develop and implement a National Digital Health Policy to leverage digital technologies to develop interoperable health information systems.
- Increase investments in comprehensive primary healthcare systems, emphasizing preventive care, early detection, and community-based services.

Local Level:

- Promote health and digital literacy at the community level, empowering individuals to make informed decisions about their health.
- Encourage community participation in governance processes and in decision-making related to healthcare policies and programs.
- Ensure equity, dignity, and inclusivity in healthcare delivery, addressing disparities in access, treatment, and outcomes among different populations.
- Support the formation and strengthening of self-help groups within the community towards collective action for better health and well-being.
- Promote community engagement through trained health volunteers who can serve as liaisons between healthcare providers and the community.

In conclusion, the 1st Annual Conclave of the GLC4HSR brought out several key actionable insights for building resilient health systems. These include strengthening public health financial management, eliminating detrimental subsidies, investing in health workforce capacity, institutionalizing participatory governance, developing national digital health policies, and prioritizing comprehensive primary healthcare, among others. At the global level, there is a need for increased financing, equitable access to essential health goods, harmonized standards, and digital public goods. At the local level, promoting health literacy, community participation, equity, and community engagement are crucial. By implementing these insights, health systems can strengthen their capacity to better respond to health crises while ensuring inclusive and efficient healthcare delivery.

Note: The thematic learning areas are at different stages of maturity in terms of understanding and collaboration among the involved stakeholders. Work around some of the newer areas of research such as communications and relations have been undertaken, more recently, alongside the larger thematic areas.

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Proceedings of the Annual Conclave 2023:
INAUGURAL PLENARY

Executive Summary

The Inaugural plenary of the GLC4HSR's Annual Conclave 2023, brought together health systems experts and thought leaders from five countries, to open the proceedings for the Conclave. They discussed the challenges and opportunities in building a culture of collaboration and collective learning and action as part of global attempts to build more resilient health systems.

Dr. Uma Aysola, Director of Communications, Relations, & Partnerships at ACCESS Health International, delivered the welcome address, setting the stage for the conference. Dr. Krishna Reddy Nallamalla, President (Asia), ACCESS Health International, provided an overview of the GLC4HSR's progress over the past year and its future direction. He emphasized the need for collaboration and shared purpose.

Dr. Reddy also emphasized the need for a self-organizing and self-sustainable GLC4HSR that evolves organically around themes and geographies. He suggested a self-governing model to champion the cause of health system strengthening and to complement global bodies like the WHO in knowledge generation and transformation. Further, he highlighted the Collaborative's objective of sharing knowledge and learning from global to local levels, as well as from grassroots to higher levels. He expressed gratitude to the technical advisors and announced plans for country chapters in Indonesia, Bangladesh, and potentially Thailand.

The keynote address was given by Mr. Manoj Jhalani, Director, of Health System Development, at WHO SEARO, who emphasized the importance of collaboration and shared best practices in building resilient health systems. He commended the GLC4HSR for its timely efforts in this regard and highlighted the lessons learned from the COVID-19 pandemic. He recommended investing in essential public health functions, strengthening primary healthcare foundations, and fostering whole-of-society engagement.

His recommendations also included improving leadership and governance, bridging gaps in service delivery and infrastructure, and enhancing health information systems and financing for health systems. He also highlighted the alignment between GLC4HSR's efforts and WHO's focus on building resilient health systems. Mr. Jhalani acknowledged the relevance of the GLC4HSR discussions to the WHO SEA Regional Primary Healthcare Forum, which aims to capture learning, drive action, and address bottlenecks in delivering effective primary healthcare. Mr. Jhalani applauded ACCESS Health and The Rockefeller Foundation for their approach to building the GLC4HSR in Asia, with plans for global expansion.

The plenary session also featured special addresses from distinguished speakers. Dr. William Haseltine, Chair and CEO of ACCESS Health International, highlighted the importance of systematically applying health technology to develop breakthrough drugs and therapies to make health innovations accessible to all. Ms. Diah Satyani Saminarsih, Founder and CEO, Center for Indonesia's Strategic Development Initiatives emphasized the need to build strong primary healthcare systems and actively involve civil society in delivering solutions.

Ms. Deepali Khanna, Vice President, Asia Region Office, The Rockefeller Foundation called for the translation of learnings from the conference into actionable ideas and results, underlining the importance of implementing the recommendations generated from the discussions.

Overall, the Inaugural plenary paved the way for deliberations at the GLC4HSR's Annual Conclave, emphasizing the importance of collaboration, collective learning, and translating insights into actionable ideas to build resilient health systems globally.

In conclusion, the GLC4HSR highlighted the critical need to invest in health system strengthening and resilience-building efforts. The recommendations put forth by the speakers encompassed various aspects, including self-organization, self-sustainability, primary healthcare, innovation, community participation, and accessible health technology. By implementing these recommendations, countries can work towards building resilient health systems that are better prepared to handle future challenges and promote equitable healthcare for all.

The Inaugural plenary concluded with the felicitation of the technical advisors of the GLC4HSR. The Collaborative currently has twelve technical advisors, of which seven were present at the Conclave. They were felicitated for their valuable contribution to the GLC4HSR through their time and expertise.

Key Highlights

Dr. Krishna Reddy Nallamalla, President (Asia), ACCESS Health International, delivered the opening address where he set the context for the discussions to follow. He reminded the audience that the Conclave is designed to be an open dialogue with minimum presentations.

He began by talking about the idea and the purpose behind the inception of the GLC4HSR by ACCESS Health International and The Rockefeller Foundation. He spoke about the progress made by the Collaborative over the past twelve months and the journey that it will take in the time to come.

“The shared purpose of everyone associated with the GLC4HSR is to ensure health for all, at all times, even as we take different approaches and routes to achieve this goal. Many times, our paths do not meet. The key objective of the GLC4HSR is to bring people and organizations together to make their paths meet. It is like a journey that we together take. It does not belong to anyone alone but to everyone together,” Dr. Reddy said.

Dr. Reddy shared the key hypothesis of the GLC4HSR which is rooted in the belief that knowledge and learning are powerful tools that can help transform systems. The GLC4HSR tries to pool knowledge from different sources and curates this knowledge into actionable insights and converts these insights into real action.

This virtuous cycle of "KNOWLEDGE TO ACTION AND ACTION TO KNOWLEDGE" is the premise on which the GLC4HSR is built.

Dr. Reddy spoke about the three guiding principles of the Collaborative:

- The GLC4HSR should be self-organizing around themes and geographies. It should evolve organically and iteratively on its own.
- The GLC4HSR should follow a self-governing model.
- The GLC4HSR should be self-sustainable.

Stating the purpose and approach of the Collaborative, Dr. Reddy said "The objective of the GLC4HSR is to take learnings from the global to the local level and from the local, grassroots level, up to the global level. High-level learnings should be applied at local levels to policies that directly benefit people, while the rich and diverse learnings coming out of the grassroots level should be studied further at higher levels. The GLC4HSR strives to achieve this as it expands to national and subnational level chapters."

Dr. Reddy thanked Ms. Saminarsih and Prof Mushtaque for taking the lead on the Indonesia and Bangladesh country chapters of the GLC4HSR.

Dr. Reddy concluded by reiterating that the GLC4HSR will succeed when individual and institutional members can champion its cause in their respective regions. In this effort, the GLC4HSR can complement and support some of the global bodies like the WHO in their knowledge generation and other efforts towards transforming global health systems. Members of the GLC4HSR can complement the WHO's efforts in translating these knowledge resources and applying its key tools at the grassroots level and the discussions into actionable ideas.

In his keynote address, **Mr. Manoj Jhalani, Director, Health System Development, WHO SEARO,** spoke about the numerous learning opportunities that have emerged out of the global COVID-19 experience and highlighted some of the key pieces of work undertaken by the WHO in building resilient health systems as a part of building back better.

"Globally, the pandemic response has provided useful lessons, experiences, and innovations to prepare for future pandemics. This is a moment when countries should be looking for answers and sharing best practices to build resilient health systems for the future. In this context, the setting up of the GLC4HSR and its first annual conclave comes at the right time, when the imperative to learn and work together is greater than ever. The purpose, vision, and mission of the GLC4HSR are timely, given the significant political commitment across countries to building resilient health systems," Mr. Jhalani said, reiterating that the efforts of the GLC4HSR are well aligned with the WHO perspective at both global and regional levels.

Highlights from Mr. Jhalani's address:

- COVID-19 demonstrated that health systems across countries, including rich countries that ranked high on International Health Regulations 2005, were poorly prepared for a pandemic of this scale.

- The WHO estimated "all-cause" mortality to be 14.83 million in the years 2020 and 2021, which is 2.7 times more than the reported COVID-19 mortality. Possibly, the indirect deaths associated with the health and social service disruptions and economic breakdown could have surpassed those directly caused by the virus. This highlights the importance of resilience and maintaining essential health service functions in any health system.

- COVID-19 has proven that the cost of action is far smaller than the price of inaction. Given the massive return on preventing future losses, investing in resilient health systems will be the foundation of social, economic, and political stability.

- The WHO Council on the Economics of Health for All estimated that addressing gaps in pandemic preparedness and response represents just one percent of the price of inaction. Therefore, collective action for building resilience is imperative and this is what the GLC4HSR and WHO among other bodies are trying to facilitate.

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- There is a real danger that the cycle of panic and neglect may be repeated. Geopolitical crises, fiscal stress, and decreasing COVID-19 infections and mortality are pushing this critical priority to the backdrop.

- WHO HQ released a position paper from October 2021 on building health systems resilience for universal health coverage and health security during the COVID-19 pandemic and beyond. The seven inter-related policy recommendations were as below:

    - Leverage the current response to strengthen both pandemic preparedness and health systems.

    - Invest in essential public health functions including those needed for all-hazards emergency risk management.

    - Bring a strong primary healthcare foundation.

    - Invest in institutional mechanisms for the whole of society engagements.

- Create and promote enabling environments for research, innovation, and learning.
- Increase domestic and global investment in health systems foundations and all-hazards emergency risk management.
- Address pre-existing inequities and the disproportionate impact of COVID-19 on marginalized and vulnerable populations.

- All WHO region offices released their publications focused on building resilient health systems. The APAC and Euro Observatories launched the Health Systems Response Monitor, to capture the health systems response of different countries globally to COVID-19 to provide useful learnings on what worked and what did not.

- With respect to the Southeast Asia Region, the GLC4HSR is closely aligned to the WHO SEARO's two strategic documents that resulted from deliberations on learnings from COVID-19 and decisions of ministries of health in the region. These include the SEAR PHC strategy with its seven values and twelve strategic actions. The second document is the Regional Strategic Roadmap on Health Security and Health Systems Resilience for Emergencies, 2023-2027 in which a thorough "lessons learned" exercise from the emergencies faced in the recent past was carried out.

- WHO's six building blocks of health systems include leadership and governance, service delivery, health workforce, medical products, vaccines and technologies, health information systems, and health financing. Across these pillars, people and communities are and must remain in the center. A few reflections on the importance of investments, concurrently in all the health systems pillars to pandemic preparedness and building resilience, are as follows:

Leadership and governance:

Countries that had strong leadership and well-established mechanisms to work across sectors and engage with communities at both national and subnational levels were better positioned to mobilize the "whole of government" and "whole of society" response to the pandemic. Of similar importance, community trust was the key factor for effective risk communication and public compliance. Government stewardship is critical to building sustainable partnerships with the private sector, particularly to drive innovations. By further improving governance and government stewardship, we can optimize available resources for better health outcomes and pandemic preparedness.

Service delivery:

Major gaps and under-investment in service delivery were exposed by the pandemic, particularly during the Delta wave. Gaps in health infrastructure, hospital beds, laboratory capacities, medical equipment including ventilators and oxygen supplies, and health workforce were evident across countries. At the same time, we saw countries with sustained investments in primary healthcare bringing health systems closer to the communities were able to identify cases quicker and mount an effective public health response. For example, the recent WHO Universal Health Preparedness Review identified that decades of sustained investment in a PHC-focused model is central to Thailand's effective COVID-19 response. The last two years saw a leapfrogging in the use of digital technologies to further strengthen service delivery including telemedicine, tele-diagnostics, and doorstep delivery of medical products which hold great potential for the future.

Health workforce:

The role of the health workforce, especially community health workers, was crucial during the pandemic and was at the heart of the pandemic response. Lessons for mobilizing surge capacities for clinical care and public health functions need to be institutionalized.

Medical products, vaccines, and technologies:

During the pandemic, supply chain disruptions and stockouts in essential diagnostics, therapeutics, and devices negatively impacted the emergency response and essential health services.Countries with robust systems for demand forecasting, procurement quality assurance, and supply chain resilience were better able to procure medical products at affordable prices and distribute them equitably.

There is a need for global collaboration in the research and development and manufacturing of medical counter-measures that is vaccines, therapeutics, and diagnostics. The pandemic also brought the world's attention to inequities in access to financing of COVID-19 tools. There is a need to drive longer-term investment and partnerships in this area.Countries with robust systems for demand forecasting, procurement quality assurance, and supply chain resilience were better able to procure medical products at affordable prices and distribute them equitably.

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Health information systems:

The pandemic has shown us the criticality of reliable and timely information on health determinants, health systems performance, and health status for an effective, timely, and calibrated response. This is only possible with robust information systems that generate, analyze, and utilize actionable health information. The pandemic exposed the fragmentation of health information systems. Moving forward, improving the quality of routine health information including surveillance capacities and strengthening processes for evidence-informed use of data at the local, sub-national, and national levels of decision-making is critical. Effective use of digital technologies and interoperable data systems is needed to overcome the challenges. We need to strengthen the transparent and trusted mechanisms to share data and information across borders which become critical during a pandemic.

Financing:
Without financing, there can be no health system. Even before the pandemic, the estimated annual financing gaps in primary healthcare for 67 LMICs were estimated to cost USD 134 billion annually, rising to USD 371 billion by 2030. Countries in the Southeast Asia Region have the lowest public spending on health, contributing to the highest OOPE among all WHO regions. COVID-19 and subsequent economic shocks, compounded further by the recent geopolitical crises, have led to rising debt levels and inflationary pressures, reducing fiscal space, and hampering recovery. Decades of progress in service delivery, emergency preparedness, and poverty reduction have either been stalled or reversed. Despite the challenges of fiscal space, additional domestic resources for health, including through pro-health taxes are needed. At the same time, now more than ever, it is important to enhance the efficiency and equity-focused targeting of health budgets. The crisis presents an opportunity to undertake difficult health financing reforms to improve the efficiency and equity of government funding.

> *Public health is ultimately a political choice. Political leaders need to make resilient health systems central to their thinking about the future.*

- One critical learning is that the health systems suitable to advance UHC sustainably are also suitable for health security. WHO strongly advocates for the reorientation of health systems towards primary healthcare because that will advance sustainable UHC, health systems resilience, promote well-being and help achieve health-related and even non-health-related SDGs in the most cost effective and equitable manner.

Mr. Jhalani thanked ACCESS Health and The Rockefeller Foundation for helping in the conceptualization and launch of the WHO SEA Regional Primary Healthcare Forum. The Forum is bringing together a variety of development, implementation, and knowledge partners under the leadership of the ministries of health of different governments to collectively capture learning, enable cross synergies, and drive action on bottlenecks identified in delivering effective primary healthcare. The discussions at the GLC4HSR Annual Conclave are therefore highly relevant to the PHC Forum, Mr. Jhalani said.

In conclusion, Mr. Jhalani applauded the efforts and approach adopted by ACCESS Health and The Rockefeller Foundation to build the GLC4HSR in Asia first, with an aim to expand it the global level, as opposed to the usual practice of building in the West and later directing the efforts to Asia and LMICs for use. He congratulated the GLC4HSR for the strong representation in its agenda from across Asian countries. “I am sure that this Conclave will provide a collective opportunity to advance collaborative learning and action for building resilient health systems through PHC-oriented transformation,” Mr. Jhalani said in his final remarks.

The next address was made by **Dr. William Haseltine, Chair and CEO, ACCESS Health International.** Dr. Haseltine spoke about the purpose behind setting up ACCESS Health International, with a vision to make the advances in modern medicine and healthcare innovations available and accessible to the world's most vulnerable populations and overcoming health inequities throughout the world."This is an age of maximum opportunity for learning and sharing knowledge towards improving and advancing human health. The way technology and science are moving forward, we have enormous opportunities to treat diseases. What also stands out is the opportunity to make these advancements affordable and accessible.

The way technology and science are moving forward, we have enormous opportunities to treat diseases. What also stands out is the opportunity to make these advancements affordable and accessible.

The technology exists today to make these innovations and breakthroughs easily affordable. And a group like the GLC4HSR can play an important role in facilitating this exchange and transfer of knowledge in furthering this cause," Dr. Haseltine said.

He illustrated this point by giving the example of the recently developed CAR-T-cell therapy which involves using your own cells to fight cancer. The catch is that it is very expensive, estimated to cost up to one million USD per patient. According to Dr. Haseltine, the role of the health system is to look for ways to make these solutions affordable. Dr. Haseltine also spoke about the systematic application of existing drugs and health systems and the role of a healthy and long collaboration between academia, governments, and international organizations, in eliminating public health problems. An example of this is the elimination of HIV from countries like Botswana.

"Knowledge exists. But it is not always easy to translate and adopt knowledge in a different context. Even if we do share the knowledge, we need to ask if it is actionable. The knowledge-to-action and action-to-knowledge cycle does not happen very often and the GLC4HSR must aim at achieving this as much as possible," Dr. Haseltine said.

Dr. Haseltine then spoke about the successful "100 Million Healthy Lives" program in Egypt to eliminate Hepatitis C. Community participation was a major contributor to the success of the program. It was able to make the Hepatitis C treatment affordable at 35 USD per treatment for the 4 million people who were found to have Hep C in Egypt and were treated under this program.

"Can other countries replicate a process such as this to eliminate public health challenges? The question to ask is whether we have the government leadership, the organization, and the will to do this," Dr. Haseltine said.

Finally, Dr. Haseltine spoke about the important role of communication. When governments undertake successful programs, they must talk adequately about them and create awareness. The 108 ambulatory services in India are an example. "Points of excellence exist all over the world. This group can play a significant role in raising awareness about these," he concluded.

Next to address the audience was **Ms. Diah Satyani Saminarsih, Founder and CEO, Centre for Indonesia's Strategic Development Initiatives (CISDI)**, a leading civil society organization that will lead the GLC4HSR's Indonesia chapter. In her address, Ms. Saminarsih put great emphasis on the importance of robust primary healthcare systems in building health systems resilience.

"We have been echoing the importance of intervention in primary health care and believe that it is not just a set of activities or a level of care, but a strategy for organizing and permeating the entire healthcare system. Primary healthcare is a critical component enabling high-quality health services to meet people's diverse health needs at every stage of life," Ms. Saminarsih said.

Ms. Saminarsih went on to talk about the work of and the challenges faced by non-profit organizations and community-centric organizations like CISDI. As a civil society organization, CISDI positions itself as the thinking partner for our governments, policymakers, and academicians. "All our actions are based on what impact they will have on the communities. This approach, however, has not been easy. We have worked for many years without the full support from our partners in the government, business sector, and the donor community but this is slowly changing," she said.

Research, policy advocacy, and behavior change communications are the focus of CISDI's work. It pilots, upscales, and replicates solutions for service integration, driving equity, scaling up interventions, and assisting local governments, community health workers, and the community itself to sustain and make constant improvements. Efforts of CISDI that started with seven pilots to strengthen and transform primary care have been scaled up into a national-level program for primary healthcare transformation by the Indonesian government.

Ms. Saminarsih said that while leading the efforts of the GLC4HSR's country chapter in Indonesia, CISDI will try to further strengthen its holistic and integrated approach towards strengthening health systems with a focus on improving the delivery of primary healthcare and ensuring community participation at all times. The learning-to-action and the action-to-learning approach is being followed for years in Indonesia and will continue as a part of the efforts taken under the GLC4HSR.

In conclusion, Ms. Saminarsih spoke about CISDI's latest alliance that assesses how well countries are doing with their primary healthcare improvements. "It will be important to reflect on the successes and failures and we hope to deliberate on these learnings at the Primary Health Forum to be held in Jakarta in November 2023," Ms. Saminarsih said, inviting all those associated with the GLC4HSR to participate in this Forum.

Prof Mushtaque Chowdhury, Adviser, James P. Grant School of Public Health, BRAC University, Bangladesh was the next speaker. Among many things, Prof Chowdhury spoke extensively on the need for community participation and implementation research as a part of the larger effort to generate evidence and convert it into action. He spoke about successful public health interventions in Bangladesh such as improving the uptake of Oral Rehydration Therapy (ORT) and Family Planning methods and the use of the approach of knowledge to action to knowledge.

Prof Chowdhury spoke about the example of ORT, the use of which was perfected in Bangladesh in the late 1960s. Despite teaching women to prepare ORS at home, an implementation study to understand the uptake of ORT found that less than 10 percent of patients with diarrhea were using ORT.

The assumption that the transfer of knowledge and technology was enough to drive change was proven wrong. The innovation and course correction undertaken as a result of the implementation research helped Bangladesh achieve the highest rate of use of ORT in the world at over 80 percent of all diarrhea cases.

"A lot of research has been done to study how Bangladesh improved its health and other social sector outcomes. A reason that has been identified repeatedly is the public health actions such as the ORT, Essential Program for Immunization (EPI), and family planning and the focus on the overall improvement in the human development indicators. The role of NGOs and the private sector has also been integral to the success of these programs," Prof Chowdhury said.

Prof Chowdhury said that despite all the initial progress, there is a sense of complacency in the policy arena. For example, MMR fell rapidly from 600 in the nineties to 200 in 2010, the progress has stalled ever since. While Bangladesh has been able to make the most of the low-hanging fruits, to progress further, it needs to identify and try to achieve the higher-hanging fruits such as the issues of health systems resilience.

Other highlights from Prof Chowdhury's address are as below:

- Bangladesh's investment in health is the second lowest in the world at less than 1 percent of the GDP. Moreover, there is a huge neglect of primary healthcare with only 25 percent of the total budget being spent on it. This is primarily the reason why during COVID-19, despite having the physical health infrastructure, people from remote areas had to come to urban centers for treatment.
- There is a lack of a robust platform at the national level by the government that ensures community participation in decision-making. Centre for Policy Dialogue and the Bangladesh Health Watch are some civil society organizations that have organized platforms for community participation in policymaking.
- Bangladesh needs to make progress in the area of One Health and for this, it needs to adopt a multi-sectoral approach to strengthening health systems.
- NGOs are in danger as Bangladesh is transitioning into a middle-income country and donor support is going to reduce with time.

- Brexit, the war in Ukraine, and COVID-19 are some factors that have had a negative impact globally on NGOs receiving donor support.

- Government's attitude towards NGOs has changed and this was reflected in the inadequate community-level work done by NGOs during the COVID-19 pandemic.

In his concluding remarks, Prof Chowdhury reiterated that Bangladesh, like many other countries, needs to do a lot more towards building resilient health systems. "In such a context, there is a huge need for an initiative like the GLC4HSR to drive collective action," Prof Chowdhury said.

The inaugural session was wrapped up by **Ms. Deepali Khanna, Vice President, Asia Region Office, The Rockefeller Foundation**, who delivered the closing remarks. Like the previous speakers, Ms. Khanna emphasized the importance of global cooperation and collaboration in the face of rising threats that transcend national borders. She spoke about the vision of The Rockefeller Foundation in supporting various pieces of work in this regard.

"Since before COVID-19, we have known that our health systems are weak. The Rockefeller Foundation has been working towards strengthening it by seeding some of the work in the public health area. The GLC4HSR is one such work, and it has managed to make good progress in a limited time," Ms. Khanna said.

Ms. Khanna drew attention to the COVID-19 research done by the ACCESS Health team, especially in China, which resulted in the genesis of the idea of setting up the GLC4HSR. "It is not easy to set up a Collaborative and I congratulate the ACCESS Health International team for building the GLC4HSR and bringing it to where it is today," she said.

Ms. Khanna spoke about the need to learn and act in a nimble and agile way. With the kind of complexities faced by the world today, acting quickly in the need of the hour. "It is not just about learning together but also about how we can grow together. We must all understand that we are not competing. We are trying to bring a real impact in people's lives. Coming together and bringing something to the table, whether it is expertise, resources, or networks, is important."

> *There is a need to learn and grow together, not by competing, but by striving to make a genuine impact in people's lives. Collaborating by contributing expertise, resources, and networks are crucial for collective success.*

Ms. Khanna reiterated the fact that health systems are very fragile at present, and the global community is not being able to make the intersections between health and issues such as climate change. As a Collaborative, the GLC4HSR must not just be talking about the challenges alone but seize the opportunity to try and find solutions that can be applied to make health systems resilient for the most vulnerable population, she said in her closing remarks.

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The GLC4HSR's ANNUAL CONCLAVE 2023

Proceedings of the Annual Conclave 2023:

LEARNING SESSION 1

Reframing health systems and their assessment: Reflecting on country-specific responses to COVID-19

Learning Session 1 :

Reframing health systems and their assessment:
Reflecting on country-specific responses to COVID-19

Context Setting:	**Dr. Krishna Reddy Nallamalla** President (Asia), ACCESS Health International
Moderator:	**Mr. Maulik Chokshi** Deputy Country Director (Technical), ACCESS Health International
Panelists:	*Global:* **Dr. Sohel Saikat** (Remote) Lead and Technical Specialist, Health System Resilience and Essential Public Health Functions, WHO HQ. *South Korea:* **Dr. Soonman Kwon** (Remote) Professor and former dean of the School of Public Health, Seoul National University *Indonesia:* **Ms. Diah Satyani Saminarsih** Founder and CEO, Center for Indonesia's Strategic Development Initiatives *Sri Lanka:* **Dr. G.S.P. Ranasinghe** Director, Ministry of Health , Government of Sri Lanka *Sri Lanka:* **Dr. Lal Panapitiya** Deputy Director General- Medical Service, Ministry of Health, Government of Sri Lanka
Theme coordinator:	**Dr. Anuradha Katyal** Technical Head (Research & Data Analytics), ACCESS Health International

Executive Summary

The ability of health systems to respond to and recover from a public health emergency, caused by varying circumstances, defines their resilience. Well-functioning health systems are capable of preventing future health threats. In case of a failure to prevent them, they are prepared to fight threats.

The core component of building resilience is creating structures during non-emergency time to be able to learn and adapt. The COVID-19 pandemic was a shock that generated different responses from different countries toward mitigating its negative impact. Being severely affected by COVID-19, most countries in the world began assessing their response to the pandemic and identifying areas that need strengthening to be able to better respond to future pandemics, by preventing and reducing infections, hospitalizations, disabilities, and deaths.

The key points of the panel discussion included the following:

- Reimagining the health systems framework given the gaps in present models
- Assessment of resilience of health systems
- Review of emerging assessment models
- Country representatives' assessment of their national health systems given the experience with the ongoing COVID-19 pandemic and other crises arising out of geopolitical and environmental developments.
- Understanding the role and effect the global community has on health systems resilience at a country level.

Session Introduction

The session revisited the conceptual understanding of health systems in the context of research and actual experience. Moreover, there was a discussion about resilient health systems. A potential alternative framework that emerged out of the learning journey undertaken by the GLC4HSR was presented for discussion among the experts and the audience. The primary areas covered during the talks include country maturity in the context of resilience, challenges in terms of stressors and demands on health systems, primary health care systems, WHO indicators on health system resilience, and country-level learnings from pandemics.

Dr. Sohel Saikat, Lead and Technical Specialist, Health System Resilience and Essential Public Health Functions, WHO HQ, brought in the global perspective, speaking about the lessons learned from COVID-19, the approach used to develop health system resilience indicators, the difference between health systems assessment and health systems resilience assessment, country maturity, the current global perspective on countries' performance during COVID-19, and WHO's next steps in developing HSR indicators.

Dr. Soonman Kwon, Professor and former dean of the School of Public Health, Seoul National University, described the current healthcare system components using COVID-19, as well as reflections from the Korean experience. Dr. Kwon identified key components such as adopting HS mitigation strategies, learnings from Korea's MERS and COVID experiences, rapid response capacity, agility in policymaking, and evidence-based policymaking.

Ms. Diah Satyani Saminarsih Founder and CEO, Centre for Indonesia's Strategic Development Initiatives is a public health advocate. She discussed the community response to COVID-19 in Indonesia, as well as the innovations used to combat the pandemic.

Dr. Lal Panapitiya, a primary healthcare expert, and Deputy Director General- Medical Service at the Ministry of Health Sri Lanka, discussed the government's response to economic and health disruptions; approaches used by the government to strengthen the resilience of their systems or ensure that people can continue to receive services. He also discussed the strategic management of COVID-19 patients during the third wave and public empowerment to fight COVID-19.

Dr. G S P Ranasinghe, primary health care expert, and Director of Primary Care Services and Director of Training, Ministry of Health, Sri Lanka discussed Sri Lanka's strong primary care and mitigation strategies, as well as the response of primary healthcare when health systems were under shock.

Panel Discussion Overview

The context for the discussion was set by Dr. Krishna Reddy Nallamalla, President (Asia), ACCESS Health International. He discussed the various aspects of the health systems assessment framework and the process of developing the framework. He emphasized the importance of designing and developing frameworks that are capable of tackling health systems challenges and assessing the resilience of health systems. He went on to emphasize the importance of strengthening health system resilience and its vital role in policy development.

Dr. Reddy defined health system resilience and emphasized that resilience is an intrinsic attribute of health systems. The definition is as below: Health system resilience is the ability of a health system to ensure that access to high-quality and affordable healthcare is safeguarded and guaranteed irrespective of the shock. In order to achieve such a state, the system needs to prepare during normalcy, absorb shocks during crises, transform, and learn from past crises.

He described the key components of the health system resilience framework, including provisioning, supplying, financing, and governing, and population health versus individual health. The framework also includes the cross-cutting components of information, communication (local to central level), and relationships (across institutions). In addition, the consequences of miscommunication were addressed.

Health system resilience is the ability of a health system to ensure that access to high-quality and affordable healthcare is safeguarded and guaranteed irrespective of the shock. In order to achieve such a state, the system needs to prepare during normalcy, absorb shocks during crises, transform, and learn from past crises.

Mr. Maulik Chokshi, Deputy Country Director (Technical), ACCESS Health International, moderated the session and began the conversation by discussing WHO's work on a resilience toolkit and a framework for assessing the resilience of health systems.

Mr. Chokshi requested Dr. Saikat to explain how one can understand the maturity of countries in the context of resilience and challenges. He also enquired about the difference between health systems assessment and health system resilience assessment.

Dr. Saikat outlined the difference between health system assessment and health system resilience assessment and the need for differential inputs based on the existing capacity of the countries to measure health systems. He added that health systems assessment and health system resilience assessment are related, but the need for resilience-specific indicators brings together two sides of the coin. This will allow health systems to measure progress and maintain health services, and be prepared to manage a disruptive emergency. As a result, the WHO indicators may have a dual purpose.

At the global level, the movement on Health Emergency Preparedness and Response has been fragmented and operating in siloes. Several investments have been made in the humanitarian context of health systems in many countries, but there is a lack of coordination and integration among different investment programs in the health systems.

Dr. Saikat explained the need to take a holistic approach that addresses both the health systems and the social determinants of health. This will require collaboration across sectors, such as health, education, housing, and transportation, as well as engagement with communities and civil society. By working together, more resilient, and equitable health systems that promote health and well-being for all, can be built.

Further, he presented facts on financial and geographical barriers to accessing healthcare. It was concluded that there is no correlation between the countries' standing on the global health security index and their success in reducing mortality and morbidity during COVID-19.

Mr. Chokshi asked Dr. Kwon a similar question about the difference between health systems assessment and health system resilience assessment. He also asked for some important lessons learned in terms of systems evolution toward resilience in South Korea.

Dr. Kwon described the South Korean Middle East Respiratory Syndrome (MERS) experience, which led the government to strengthen the Centre for Disease Control and improve collaboration between central and local governments. Furthermore, he described that collaboration with private healthcare providers is still a challenge. He explained that for adequate preparedness, we need to build a quick response capacity. The major component is educating policymakers, and an evidence-based policymaking system is required.

He highlighted that a more comprehensive policy perspective is essential, emphasizing not only mortality, morbidity, or health impact, but also the broader socioeconomic impact because livelihood or economy have a long-term impact on health.

Mr. Chokshi asked Ms. Saminarsih about Indonesia's experience with its COVID-19 response and the ranking of Indonesian health systems in terms of performance.

Ms. Saminarsih emphasized that no one was prepared for a pandemic of this scale and magnitude. In Indonesia when the pandemic first struck, health workers especially the primary healthcare workers were not prepared. There were no SoPs. Preserving livelihoods was not the focus. Efforts were focused on saving lives, but saving livelihoods were not given priority during the COVID-19 pandemic. Ms. Saminarsih stated that if Indonesia's primary healthcare services had been strong, many lives could have been saved. Furthermore, she pointed out that Indonesia was ranked 63 in the joint external evaluation (JEE), but when an actual pandemic struck, the health system's performance was not in alignment with its ranking. She explained that policymakers play a vital role in saving lives.

Furthermore, it is also difficult for policymakers to deal with such pandemics. Ms. Saminarsih went on to speak about the Center for Indonesia's Strategic Development Initiative which is focused on strengthening the community and community health workers.

Mr. Chokshi asked Dr. Saikat about obtaining indicators and tools on social protection, including livelihoods and how should those indicators be measured as part of financial or societal protection.

Dr. Saikat explained why many countries failed in their response to COVID-19. He emphasized that a majority of countries follow a hospital-centric capitalistic model, with little focus on strengthening primary care. As a result, hospitals became overburdened. Even when there was a primary healthcare approach, systems collapsed due to a lack of public health orientation.

He also discussed WHO's efforts toward the Universal Health and Preparedness Review (UHPR). The UHPR looks at the social protection aspect and how it may be institutionalized as a starting point for future pandemics. Furthermore, multiculturalism must be institutionalized so that it can be built on during an emergency. He gave the example of financial protection, a contingency fund, addressing issues around labor protection, refugees, and migrants, and ensuring that they have access to healthcare, among other things.

> *There is a need to develop resilient health systems that can achieve self-sufficiency. The current approach is costly for countries successfully reducing mortality and morbidity, making future replication challenging. Instead, a strategic model must be developed, involving significant investment in public health to empower health systems.*

Dr. Saikat discussed that there is an urgent need to develop systems for constructing resilient health systems on the route to self-sufficiency. The current method comes at a significant economic cost in countries that are doing well in reducing mortality and morbidity. As a result, replicating the same model of response in the future will be challenging. Instead, we must develop a more strategic model. This technique involves substantial investment in a health system from a public health standpoint so that the same health systems are capable of handling their own concerns before involving the government.

Mr. Chokshi posed the next question to Dr. Panapatiya about the Sri Lankan government's response to the recent health, climate, and economic shocks faced by the country. How does the government respond to such shocks to make health systems resilient and accessible to people?

Dr. Panapatiya spoke about Sri Lanka's response to COVID-19. The medical supply shortfall in Sri Lanka was managed with the help of development organizations and other assisting entities. Sri Lanka decreased the cost by reducing needless lab testing and updating the list of essential medications. They also focused on expanding primary healthcare because it was underutilized. Following the initial treatment, they referred patients to primary health care centers in order to reduce overcrowding in tertiary and secondary care facilities.

Mr. Chokshi asked Dr. Ranasinghe about the need for strong primary health care and what happens to primary health care when it is put under stress.Dr. Ranasinghe emphasized that in Sri Lanka, primary care hospitals were used extensively during COVID-19. Other services were delayed, but the provisioning of routine healthcare services was ensured. In Sri Lanka, there are 1042 primary care hospitals, of which only a few were used for COVID-19 and the rest provided routine healthcare services. Primary care hospitals were classified as Type A, B, or C based on the number of beds. Type A hospitals were used for COVID-19, whereas Type B and C hospitals were used for routine healthcare services.

Dr. Ranasinghe spoke about the post-pandemic phase that involves strengthening primary care and setting up systems for a future pandemic, including mapping apex hospitals, where people will be enrolled. These hospitals will be granted access to screen the population. Furthermore, he discussed the need to strengthen the supply chain systems in Sri Lanka.

As a member of the audience, Prof. Mala Rao, Director, Ethnicity and Health Unit, Imperial College London posed a question to Dr. Kwon on where one must begin the assessment when looking beyond health systems, as multiple layers are involved.

Dr. Kwon discussed that the boundaries of health systems are always a starting point in health systems assessment. The greater socioeconomic structure influences all health policies. COVID-19 had a direct impact on this structure. In other cases, assessment starts with a targeted health area and is further expanded to others. With COVID-19, there was a need to take both approaches simultaneously to be able to retain the full picture. The approach focused solely on health systems does not receive full support from other sectors and good performance of health systems cannot be achieved.

A question was posed to Ms. Saminarsih about how systems can ensure resilience while keeping health expenditure at the current levels.

Ms. Saminarsih explained that reforming primary healthcare can help minimize and manage healthcare costs to keep them affordable. This, however, requires a recap of the whole national health expenditure. Moreover, there is a need to develop and promote technology assessment in order to make life-saving goods and medical devices accessible and affordable at the primary healthcare level. She added that there is a need for committed, long-term investment in primary healthcare that can help keep healthcare costs down in the long run.

> *The socioeconomic structure influences all health policies, and COVID-19 directly impacted this structure. Assessments typically begin with a targeted health area but, with COVID-19, both approaches were necessary to grasp the full picture. Solely focusing on health systems without support from other sectors impedes their performance.*

Dr. Panapatiya spoke about the importance of empowering people during emergency situations. Sri Lanka initiated public empowerment during COVID-19. He explained that the identification and pre-planning of healthcare systems are important to combat emergencies.

As a member of the audience, Mr. Sainath Banerji from Population Services International asked Dr. Saikat about the sources of data for the 76 indicators of health system resilience and how data sources are kept consistent. What is the measuring unit, including the level of measurement? He also stated that multiple models, particularly for urban and rural contexts, are required to achieve uniformity.

Responding on behalf of Dr. Saikat, Mr. Chokshi said that for each indicator, data sources have been mentioned. He added that the variability of data, as stated by Dr. Saikat, is a result of different countries being at different maturity levels in terms of reporting data. He further added that the rural-urban divide needs to be taken into consideration and the tweaking of tools for different contexts is important.

Mr. Chokshi concluded the discussion by outlining the major takeaways. He explained that the discussion began with a definition of resilience and then went on to cover WHO's work on mapping health system resilience indicators. He reiterated that it is critical to invest in primary health care in our effort to build health systems resilience. Furthermore, he stated that the Global Learning Collaborative for Health Systems Resilience is working towards measuring health system resilience through the development of indicators.

Key Findings

Resilience is a construct of what countries do during peacetime. Countries need strong technical support and differential capacities to ensure that they can measure their resilience.

Universal health coverage cannot be accomplished if countries continue to be impacted by disruptive catastrophes, and health security cannot be achieved if a significant population remains unable to access health services.

Agile policymaking and a focus on political economy ensure a better response to pandemics, saving lives as well as livelihoods.

Collaboration with private providers is imperative; yet remains a challenge even in insurance-driven nations like South Korea.

A strong primary healthcare system is imperative to recovering faster from a pandemic, as opposed to health systems that are more driven by hospital-based care. A primary care approach and a public health orientation are lacking in most countries. The hospital-based approach is expensive and a non-sustainable model of response. A strong primary care system helps to empower the community, especially in case of emergencies.

Sri Lanka strengthened their underutilized primary healthcare systems and strengthened their supply chains to develop family health clinics and this helped in gatekeeping and sending back patients from higher levels of care.

Moving from the current state to the ideal state of resilience, many countries face their own economic barrier therefore there is a need for broader health system resilience measures.

Recommendations

- There are different perspectives on health systems depending on the context and issue being addressed. However, it is important to recognize that all these perspectives are interconnected and that a One Health approach is necessary to strengthen the health
- The existing method of assessing and monitoring the performance of health systems reveals inadequacies in the country's capabilities. Furthermore, it suggests that the investment and programming to develop those capacities are most likely failing to develop enough public health orientation and coordination.
- A strong governance system that is based on evidence and is responsive to change is essential for effective crisis management and emergency response.

- There is a need for an evidence-based policymaking process, as well as a learning-by-doing approach.
- Policymaking agility is a critical component that is frequently overlooked, particularly in the healthcare sector where most conversations are highly technical.
- Investing in primary health care is essential to reduce long-term healthcare costs and to respond to health emergencies in an efficient manner.

Conclusion

The session highlighted the facts about the mapping of indicators and sources for health system resilience. Furthermore, the maturity of countries in terms of resilience depends on complex and evolving stressors and demands on health systems. Evidence-based policymaking was discussed and experts highlighted that policies should achieve a good mix of saving lives while also protecting livelihoods. Community participation, strengthening the communities, and the importance of public health orientation during public health emergencies were some of the key components discussed in the session. Experts delineated that investment in primary care is crucial for building resilient health systems.

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The GLC4HSR's ANNUAL CONCLAVE 2023

Proceedings of the Annual Conclave 2023:

LEARNING SESSION 2

People's Health: Understanding its determinants, identifying vulnerabilities, and mitigating threats.

Learning Session 2:

People's Health: Understanding its determinants, identifying vulnerabilities, and mitigating threats.

Context Setting:	**Dr. Krishna Reddy Nallamalla** President (Asia), ACCESS Health International
Moderator:	**Ms. Deepali Khanna** Vice President, Asia Region Office, The Rockefeller Foundation, Bangkok
Panelists:	**Dr. Aida Karazhanova** Economic Affairs Officer, UN Economic and Social Commission for Asia and the Pacific **Ms. Eloise Todd** Co-founder, Pandemic Action Network, Brussels **Prof. Mushtaque Chowdhury** Adviser to the James P. Grant School of Public Health, BRAC University, Bangladesh **Dr. Jeremy Lim** (Remote) Assoc Professor & Director, Leadership Institute for Global Health Transformation, NUS Saw Swee Hock School of Public Health, Singapore **Prof. Shalini Bharat** Director/Vice Chancellor, Tata Institute of Social Sciences, Mumbai
Theme coordinator:	**Dr. Shrikant Kalaskar** Senior Technical Specialist (Public Health & Capacity Building) ACCESS Health International

Executive Summary

The session covered a broad range of topics related to people's health and the role of the people at the center of health systems, in promoting resilience. Health literacy and digital literacy were identified as key factors in promoting resilient health systems, as were understanding the determinants of health and investing in communities.

Community health workers were highlighted as an important resource for promoting health and addressing health concerns at the local level. The discussion also touched on issues related to pandemic response, research ethics, and community engagement, with a focus on how people can play a role in shaping resilient health systems. The importance of participatory governance, trust, and accountability in both the private and public sectors was emphasized as being crucial for building resilient health systems.

Overall, the session aimed to identify strategies for improving health systems and promoting health equity, with a focus on learning from the pandemic and working towards a common goal of achieving resilient health systems on a global scale.

Session Introduction

Population health is determined by many factors beyond health systems, including social and environmental determinants. Disease burden and demographics explain people's health and their vulnerability to external health threats like epidemics and pandemics, natural disasters, industrial accidents, terrorism, mass displacements, war, and strife among others. The panel was represented by experts from diverse backgrounds and areas of expertise within public health. Their main areas of interest include various aspects of pandemic prevention and response, disaster risk reduction, Information, Communication and Technology (ICT), global health, and health equity. The panelists' interests align with improving access to care and addressing issues related to reproductive and women's health, HIV and TB, and social determinants of health. Their work on equity and access issues, including stigma, discrimination, and human rights, suggests a commitment to ensuring that all individuals receive good quality care that is affordable and accessible.

Overall, the panelists brought a wealth of knowledge and experience to the session and a wide range of perspectives on the determinants of people's health, identifying vulnerabilities, and mitigating threats. The key actionable points center around promoting population literacy specifically in the context of improving health literacy and digital literacy. These key factors are nowadays becoming the determinants of health, to address the issues related to people's health, along with appreciating the people's importance at the center of health systems. How individuals can contribute to improving healthcare and health systems was a further topic of discussion during the panel.

Panel Discussion Overview

Dr. Krishna Reddy, President (Asia), ACCESS Health International, set the context and gave a brief overview of the session to follow. He emphasized on the importance of keeping people at the center of health systems. While building resilient health systems, the focus should be on the specific vulnerabilities and needs of the people. Health systems can become resilient, both in normal times and during crises, by conducting vulnerability assessments and addressing unique challenges. Assessing the health status of a population involves multiple aspects. These include looking at a range of social, economic, commercial, and environmental factors that impact health outcomes. It is important to consider the different roles that people play in healthcare, including self-care, infection prevention, and control. People's participation in governance, through awareness and health literacy is essential, in addition to the accountability of both the public and the private sector. After this brief background, Dr. Reddy invited Ms. Deepali Khanna to initiate and moderate the panel discussion.

People's participation in governance, through awareness and health literacy is essential, in addition to the accountability of both the public and the private sector.

Ms. Deepali Khanna Vice President, Asia Region Office, The Rockefeller Foundation, talked about the importance of various health determinants when improving the resilience of health systems. These determinants have an impact on how well the country can harness resources in order to support health responses, including engaging community health volunteers, resolving socioeconomic disparities, controlling disruptors like misinformation on social media, and even geopolitical issues. She also spoke about The Rockefeller Foundation's efforts to enable equitable and fair access to affordable testing and vaccines and enhance pandemic surveillance capabilities. The goal was to strengthen the ability of national health systems to rapidly detect emerging threats and eliminate barriers to vaccinations among marginalized communities.

While looking at the future public health determinants, we must include the intersections of climate and health. The effects of climate change are already manifesting, having a direct influence on how future health systems should be designed, to be able to meet the requirements for building resilience. Some recent causes of concern are the rise of infectious diseases, heat-aggravated NCDs, and climate-induced migration and displacement. Climate change will continue to have an influence on the healthcare systems for decades to come and it is crucial to ensure that there is access to quality healthcare. It is essential to understand the existing assessment frameworks and whether these health determinants are factored in, for use by the governments to design and develop policies.

Dr. Jeremy Lim is an Associate Professor & Director of the Leadership Institute for Global Health Transformation, NUS Saw Swee Hock School of Public Health, Singapore. He mentioned that composite indicators such as the Human Development Index are quite mature. However, the use case of such indices has been disappointing. Other indicators, including the corruption index and scoring by The World Bank, are given greater weightage by the government because they have an impact on the economy. Dr. Jeremy spoke about the need to draw learnings from pandemics and the need for indicators in the system that can draw the attention of policymakers.

The effects of climate change are already manifesting, having a direct influence on how future health systems should be designed, to be able to meet the requirements for building resilience. Some recent causes of concern are the rise of infectious diseases, heat-aggravated NCDs, and climate-induced migration and displacement.

Ms. Khanna mentioned that regarding climate change and health, the assessment tools used in the global south and the global north are currently the same. Policymakers in the South are therefore unable to accept and implement the findings of such assessments. It is critical to comprehend whether there are any assessments where the global south is actively involved or where they have greater ownership and whether policymakers are taking these into consideration.

Dr. Lim expressed concern over the lack of indicators or tools that have emerged out of the global south and are accepted universally. He insisted that instead of concentrating on lessons from the global north, the intellectual potential of the global south should be unleashed.

Ms. Khanna mentioned that health and digital literacy are now widely acknowledged as two additional social determinants of people's health. It is important to focus on these two aspects and to identify any gaps or inadequacies in understanding them.

Prof. Mushtaque Chowdhury Adviser, James P. Grant School of Public Health, BRAC University, Bangladesh, concurred with the earlier remarks about the importance of digital literacy, health literacy, and financial literacy as sources of empowerment. He insisted that it is crucial for us to look at literacy as an enabler that motivates individuals to take action. In addition to providing knowledge about diseases and their solutions, literacy efforts should also focus on educating communities about their rights. They must help and encourage people to seek healthcare services and participate actively in the implementation and monitoring of health systems.

Ms. Khanna concurred with Prof. Chowdhury's comments regarding demand generation. Communities should be able to request the services they require and have them delivered in the best manner feasible. She also discussed the need for accountability, in order to provide quality health services.

Prof. Shalini Bharat Director/Vice Chancellor, Tata Institute of Social Sciences, added that understanding how and why people become vulnerable is the most important aspect of understanding social drivers and social determinants of health. This can take on a variety of more granular forms, such as societal norms, gender, poverty, disabilities, and challenges faced by refugees and migrants, among other things. To comprehend the concepts of vulnerability, several layers must be examined while conducting the vulnerability mapping or assessment.

The COVID-19 pandemic showed how the spread of the virus could be slowed down when other factors such as poverty, gender inequality, wealth inequity, and other issues, were taken into consideration and addressed accordingly. Similarly, in the fight against HIV and TB, investments in local communities, counseling, and community peers have proven effective in reducing the spread of these diseases. Moreover, elements like stigma, discrimination, and other societal challenges must be addressed. Adequate emphasis should be laid on health literacy as an empowering tool essential for tackling information asymmetry. With the increasing availability and use of digital health platforms, investments must also focus on improving the digital literacy of people.

Ms. Khanna acknowledged that it was necessary to carry out vulnerability assessments and share its findings with wider networks. She also emphasized the need to create an inventory of the research and learnings that have been conducted previously, indicating what worked and what did not. Further, she drew attention to how public health issues become deeply politicized during an epidemic/pandemic. The role of elected representatives in these situations is critical because they must serve the needs of the public, while also managing a complex web of misinformation and disinformation.In cases where public trust in the government and public health institutions is low, it is crucial to enhance trust in leadership and promote public participation to effectively prepare for future health shocks.

Ms. Eloise Todd, Co-founder, Pandemic Action Network, discussed her experiences at the Pandemic Action Network and expressed her concerns about misinformation concerning COVID-19 and its vaccinations. She spoke about the need to foster behavior change communications and create a collaborative space for experts to gather and share their research and learn from one another. She reiterated that many elements such as the social, cultural, political, and religious backgrounds are crucial. Hence, involving community leaders and getting the right people to act as messengers can be helpful. She also mentioned the need to maintain and sustain the interfacing, especially the intersectionality and connectivity which were effectively leveraged during the crisis.

Ms. Todd added that it is crucial to place the needs of the people at the center of the public health system and communicate effectively to draw people into healthcare facilities. Healthcare systems and providers should organize themselves in a way that facilitates clear interactions and resulting uptake of interventions. It is crucial to determine how this might be institutionalized and what can be the versions of the political leadership of such interactions. As the crisis ends, pandemic preparedness and prevention have dropped off from the political agendas. However, we need an ongoing piece of it to sustain the "whole of government", and "whole of society" approach, which proved effective during times of crisis.

Ms. Todd added that the health imperative versus the economic cost of an action is often presented in terms of the developing bioeconomy and the costs of human development. Although these are challenging issues, leaders and the public at large should consider and invest in them. It is crucial to set up a permanent establishment for intersectionalities, cross-government, and cross-society approaches, such as the Global Health Effects Council at the international level or its equivalents even at the national and sub-national levels.

Dr. Aida Karazhanova Economic Affairs Officer, UN Economic and Social Commission for Asia and the Pacific, spoke on UN ESCAP's efforts to facilitate the creation of different frameworks and knowledge products on various platforms. The group focused on a variety of issues on macroeconomic impact, social vulnerability, environment, health nexus, and other areas during the pandemic. Having expertise in the areas of Information, communication, and technology (ICT) and disaster risk reduction, Dr. Karazhanova also spoke about the various reports that point to trends such as system degradation and issues regarding climate change.

The first of the three works listed is a report from the Division of Environment and Development that connects the environmental and health sectors. The second is a disaster risk reduction portal that aids in identifying hotspots and the relationship between the environment and health. The third is an e-resilience framework and the report on digital transformation. She mentioned that the major goal is to bring about systems thinking and connectivity mechanisms. Hence, while dealing with systems, it is crucial to comprehend the leverage points of various impacts and assessments as well as understand what needs to be done from a strategic, environmental, and health perspective. Dr. Karazhanova also spoke on their efforts in relation to digital technology and connectivity, allowing stakeholders to accelerate the deployment of technology and data and making them usable and interoperable.

Ms. Khanna highlighted that health determinants such as political, cultural, and religious systems are deeply entrenched and challenging to modify. It is vital to consider these factors when comparing healthcare systems.

Prof. Bharat added that in managing the pandemic, political leadership unquestionably has a significant impact. Many other variables, including gender inequality and decision-making power, have an influence on rights to reproductive and sexual health. As a part of investing in the human side, it is essential to identify and collaborate with community leaders. It will also support the knowledge-to-action feedback loop in addition to community health workers' involvement in regular data collection. It is crucial to share lessons learned from the pandemic in terms of what worked and what did not, as well as how the response may be adjusted and improved for better health systems performance in the future. During the COVID-19 crisis, components of preventive health, including social listening, were crucial. One recommendation is to encourage social listening and to develop a continuous feedback loop of information. It is critical to maintain the focus and work towards changing the words into actions. Understanding the best practices for what has succeeded, where, and why, is essential. Best practice champions can come from any place, including municipalities, cities, and sub-regions.

During the COVID-19 crisis, components of preventive health, including social listening, were crucial. We must encourage social listening to develop a continuous feedback loop of information.

Ms. Khanna stressed the importance of learning from failures since it saves others from having to experiment on their own with ideas that have already been attempted but failed. Ms. Khanna emphasized how crucial it is for various networks, including the Pandemic Action Network, Joint Learning Network, and GLC4HSR, to converge on similar action points in order to communicate more effectively with policymakers. Understanding what is being done and what needs to be done within these networks and other initiatives such as the Pandemic Prevention Fund is essential. It is, therefore, important to work towards the leadership potential and the intersectionality of synergies among various collaboratives such as the G20, G7, COP 28, and others.

Ms. Khanna mentioned that it is crucial to build a connection between communities and health systems since social organizations are ingrained in cultures. And yet, governments are not always able to realize their full potential. The focus should be on setting up government policies and initiatives to foster community health volunteerism and on building strategies that could result in a significant change for frontline healthcare workers.

Prof. Bharat stressed the significance of taking proactive steps to establish and maintain community networks and groups during times of normalcy. One cannot expect the communities that are suddenly formed during a crisis to function well as a team and work towards a common objective. Pre-established community action groups and networks that have existed for a long time have a soul and a culture where members are aware of what needs to be done in times of crisis. Hence, it will be beneficial to invest in establishing communities, training them, and developing their capacity.

Prof. Chowdhury alluded to the lack of qualified medical personnel in rural areas, and the need for Community Health Workers (CHW) in this context. CHWs are more accessible to the local population as they live in the villages themselves. However, many of them are underprivileged and need incentives to keep them motivated. These incentives should not just be financial in nature. They must be appointed formally to the current healthcare systems.

Dr. Lim made a reference to the significance of power dynamics. Since vulnerable communities lack the power and a voice, they definitely tend to suffer more from any given crisis. These difficult problems strike at the very core of our modern capitalist society.

There was a query from the audience regarding data gathering and asymmetries in data sharing in the context of vulnerable and poor communities. The question raised was, “What methods does the GLC4HSR intend to use to disseminate information within the larger ecosystem, including with governments, policymakers, and the community?”

In response to the question, Prof. Bharat spoke about the need to push for qualitative research. On data collection and research, she said that researchers should respect the responders for their time and effort and in return share the knowledge and information generated. HIV eradication is one such example wherein many initiatives were driven by communities themselves. Disseminating the study findings, returning to the communities, and informing the people from whom data were obtained are crucial components of health ethics. Moreover, the dissemination of knowledge through academic institutions is another method of sharing research findings.

In addition to journal articles, Prof. Chowdhury mentioned about distributing research findings in local languages, particularly through local newspapers, which are more accessible to communities.

Ms. Khanna talked about the use of technology for frontline workers. She focused on easing the workload for front-line workers by moving them from paper-based reporting to electronic reporting systems such as using apps and other tools.

As a member of the audience, Dr. John C. Langenbrunner, a global health financing expert discussed the significance of trust and accountability concerns in relation to reports and data. The information provided is not always delivered in a completely transparent manner, which breeds mistrust among local authorities, community leaders, community health workers, and individuals. Thus, it is crucial to understand how to start with more accountability at the top.

Ms. Khanna drew attention to the reality that although frontline employees are willing to share accurate data, their trustworthiness is often called into doubt when they report the actual results.

A participant from the audience spoke about the importance of the family as an important determinant of health. Everyone working in the health field, regardless of the sector they are in, must strengthen the family's capacity to sustainably improve health. The comment was well received by the panel.

Ensuring trust and accountability in reports and data is challenging because although frontline employees are willing to share accurate data, their trustworthiness is often called into doubt when they report the actual results.

Prof. Bharat concurred that families as a unit are an important social determinant. This is presuming that all families are functioning well, as many members inside families may experience neglect due to ageism, sexism, and gender bias. However, there is a need to unpack this concept and study it further. Undoubtedly, the family is one of the most significant institutions that can serve as the fulcrum that drives social and individual behavior.

Ms. Khanna pointed to the need to identify and comprehend the threats and determinants that have a significant impact on people's health and choose which among these can be taken up for further research and action by the GLC4HSR.

Prof. Chowdhury highlighted that while focusing on Universal Health Coverage (UHC) countries should consider both short-term and long-term actionable goals, such as resolving the challenge of OOPE. This is because different countries are at different phases of implementing universal health coverage programs.

Dr. Karazhanova suggested taking the local-to-global approach in terms of taking learnings from actions and their implementation, while simultaneously taking into account the health components, digital components, interoperable usage of case studies, and real-time-based use of data via websites.

Prof. Bharat outlined two key takeaways.

- To concentrate on data mining to determine what is effective and ineffective from a local or community perspective.
- To understand the qualitative attributes of the indicators.

Key Findings

The panelists discussed that a comprehensive assessment of an individual's health status should take into account various factors beyond just physical health. These include social, commercial, economic, and environmental factors.

The intersections of climate and health are becoming increasingly important as a future public health determinant.

The panelists also mentioned the need to draw learnings from the pandemic to improve our preparedness and response for future outbreaks and to draw the attention of policymakers to the importance of pandemic preparedness and to guide investments in the healthcare system.

It is crucial for health literacy to be acted upon as an active process that motivates individuals to take action for their health. Additionally, recognizing and addressing social drivers and social determinants is crucial for promoting health equity and ensuring that everyone can achieve optimal health outcomes, especially the vulnerable population.

Effective communication is also crucial for maintaining trust and ensuring that the public is informed and engaged throughout the crisis. The panelists also emphasized the importance of bringing systems thinking to connectivity mechanisms, adopting a holistic and integrated approach that considers the various components and factors within the system, and identifying leverage points for making positive changes.

The panelists also mentioned that past experiences with diseases such as HIV and TB have proven that it is possible to create positive change in public health by working together with community leaders and investing in the human side of the community. Similarly, encouraging social listening and developing a continuous feedback loop in the system are indeed essential components of disease prevention strategies.

Additionally, to have resilient health systems, leveraging the skills and expertise of Community Health Workers is essential, which can help to improve health outcomes in rural communities and reduce healthcare disparities.

Furthermore, the panelists also discussed the importance of qualitative research, which significantly contributes to addressing different challenges in healthcare. Academic institutions and other platforms such as local newspapers can be used for disseminating knowledge products and research findings to the local communities.

Recommendations

- To identify and prioritize people's role in healthcare, including self-care and infection prevention and control.
- It is important to promote health literacy and digital health literacy for people's participation in healthcare.
- There is a wealth of knowledge and expertise in the global south that can be harnessed to address global health challenges and build assessment tools.
- Investing in local communities, counseling, and community peers is an impactful way to reduce the spread of infectious diseases and improve health outcomes.
- Creating an inventory of research and learnings on the lessons learned during the pandemic and best practices is essential for informing future policies and interventions
- Maintaining intersectionality and connectivity across governments and networks is indeed crucial for sustaining and achieving common goals beyond the COVID-19 crisis.
- There is a need to take proactive steps to establish and maintain community networks and groups during times of normalcy.

Conclusion

The determinants of people's health are complex and multifaceted, and addressing them requires a comprehensive and collaborative approach that involves individuals, communities, and policymakers at all levels. Investing in community involvement and participation is crucial for understanding the unique needs and challenges of different communities. Community health workers can play a critical role in facilitating communication and trust between healthcare providers and the communities they serve.

The policies should be informed by data and insights from the ground, including the perspectives and experiences of individuals and communities. This can help to ensure that policies are responsive to the needs and priorities of the populations they are intended to serve. Global leadership and networking are also essential for sharing knowledge and best practices, and for building collaborative partnerships that can help to address global health challenges. By working together and learning from each other, we can develop more effective and sustainable solutions to improve the health and well-being of individuals and communities around the world.

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The GLC4HSR's ANNUAL CONCLAVE 2023

Proceedings of the Annual Conclave 2023:

LEARNING SESSION 3

Improving the preparedness of public health systems to pre-empt, prevent, and respond to shocks

Learning Session 3:

Improving the preparedness of public health systems to pre-empt, prevent, and respond to shocks

Moderator:	**Prof. K. Srinath Reddy** Honorary Distinguished Professor, Public Health Foundation of India.
Panelists:	**Dr. Samiran Panda** Head, Epidemiology & Infectious Diseases Division, Indian Council of Medical Research **Ms. Eloise Todd** Co-founder, Pandemic Action Network, Brussels **Dr. Habib Hasan Farooqui** Additional Professor, Indian Institute of Public Health- Delhi **Dr. Vijay Yeldandi** Head Infectious Diseases and Public Health, SHARE India **Dr. Fujie Xu** (Remote) Deputy Director, Health, Country Office (China), Bill & Melinda Gates Foundation
Theme coordinator:	**Dr. Shrikant Kalaskar** Senior Technical Specialist (Public Health & Capacity Building) ACCESS Health International

Executive Summary

The purpose of the discussion was to deliberate upon ways to prepare public health systems for future pandemics and to pre-empt, prevent, and respond to health shocks. A strong and resilient public health system requires an adequately trained and skilled health workforce. Investing in the training and development of health workers is crucial to ensuring that they are equipped to respond to health crises effectively.

Additionally, investing in surge capacities, such as additional hospital beds, equipment, and medical supplies, can help meet the increased demand during health crises.

Community engagement is also a crucial component of pandemic preparedness and response. Engaging communities can help improve disease surveillance and early detection, as well as enable effective communication of public health messages.

Additionally, global funds are essential for addressing global health threats and enabling low- and middle-income countries (LMICs) and resource-constrained countries to fill the gaps in their health systems. This requires a collaborative effort from all countries to ensure that global health security is prioritized and that resources are allocated effectively.

The availability of health workforce for the future is a significant concern, particularly in countries with shrinking younger populations. Countries with younger demographics can contribute to the global health workforce, but this must be done without depleting their own national resources.

Finally, there is a need for people-centered and fit-for-purpose health systems that can do more than one thing at a time during a public health emergency. This requires a holistic approach to health systems that prioritizes the needs of patients and communities and is adaptable to changing circumstances.

Session Introduction

The public health system plays a critical role in disease prevention and health promotion. It must establish an effective surveillance and alert system, based on the One Health concept, to be ready to mitigate potential threats and maintain people's health in the future. Additionally, it must be prepared to implement efficient disease control measures in response to any alert, while also maintaining the continuity of key health services.

During the current COVID-19 pandemic, outcomes were better in countries with better public health systems. Thus, to improve their public health systems, including the physical infrastructure and the public health workforce, many low-income and middle-income countries must invest in strengthening health systems.

The session explored the challenges involved in pandemic preparedness, how some countries have been able to succeed despite limited finances, and what is needed to strengthen weak health systems. The panel had representation from health systems experts from diverse areas such as infectious diseases, policy advocacy, health economics, and strategy specialists. The panel included a public health researcher from government institutions, academicians, and a public health physician. The session was moderated by Prof. K. Srinath Reddy.

Panel Discussion Overview

Prof. K Srinath Reddy, Honorary Distinguished Professor, Public Health Foundation of India, gave a brief overview of the preparedness of public health systems. In order to mount a swift, strong, and sustained surge response in a public health emergency, it is essential to have an efficient, equitable, and empathetic health system which is able to perform reliably in the normal state. Thus, it is essential to build health systems that can respond well to shocks and at the same time continue to perform all the functions that are routinely expected from the system. The public health system needs to identify the determinants of health and address them at the population and individual levels. This can be achieved through community engagement in program and policy formulation.

Public health systems are not only complex but frequently changing in terms of the challenges faced across countries and regions. Resources for health systems are finite. Public health systems must strive to make the most efficient use of their limited resources by optimizing the allocation of resources, especially through the public financing system, which is the foundation of public health systems. Additionally, other stakeholders such as the private sector, academia, and the community should also be involved to strengthen the resources. Public health professionals must have the competencies required to manage these complex features and functions of the public health system.

Prof. Reddy highlighted that within public health systems, especially in the Indian context, there is a dearth of skilled public health professionals. There is a need to re-assess current public health training programs, identify the gaps, and address them, to be able to impart the required competencies to ensure adequate availability of skilled public health professionals.

Dr. Samiran Panda Distinguished Scientist - Indian Council of Medical Research, Former Additional Director General, ICMR & Ex-Head ECD, ICMR, concurred that there is definitely a need for a higher number of trained human resources, who are competent to deal with public health challenges and shocks. Hence, the training of public health professionals must not stay limited to the classical method of analyzing an event to understand what went wrong. It should also include lessons on understanding what went right in the response to minor shocks, and on the effectiveness of local-level innovations.

Dr. Panda added that in addition to quantitative indicators for resilience, the qualitative aspect should also be considered through case studies on successful examples of handling shocks. He also stressed the need to include contextualized learning as different geographical locations face their own unique challenges. Trainees must also have an opportunity to learn from different aspects of public health within the social, technical, and economic context, in addition to the centralized institutional curriculums. A good way to improve the preparedness and skills of public health professionals would therefore be to include teaching and learning coming directly from the community or from the most vulnerable population.

Prof. Reddy also mentioned that public health education has always been considered to be multidisciplinary and, therefore, enabling multi-sectoral applications and approaches in different contextual settings is important. It is also important to understand how much more multidisciplinary and multisectoral it needs to become in the fast-evolving context of the present times.

Dr. Panda said that public health systems will continue to face unpredictable shocks. For systems to be resilient, the response to these shocks will require efforts that go beyond the biomedical model. This not only requires multi-sectoral involvement but also the participation of community groups where a lot of the wisdom lies. Dr Panda reiterated that translating knowledge into action requires wisdom and this wisdom is present among the community. Thus, this local wisdom needs to be incorporated into the public health response. Active engagement with different community groups and sectors will be key to achieving this.

Prof. Reddy mentioned that mindsets at the levels of both the policymakers and the public are heavily preoccupied and influenced by the notion of fighting pandemics and improving the preparedness of health systems to recognize and respond to challenges. As a result, we may be neglecting the routine functions that an efficient public health system is expected to perform. We may be diverting both financial and human resources into pandemic preparedness and response at the cost of taking inadequate measures needed to strengthen the overall public health system to enable it to perform efficiently during both normal and surge times.

Ms. Eloise Todd, Co-founder, Pandemic Action Network, mentioned that during the COVID-19 crisis, a large chunk of the resources was diverted toward COVID-19 response measures. In many instances, this led to a rise in maternal deaths, particularly affecting sexual and reproductive health services. There is now a push to mobilize finances for pandemic prevention and preparedness outside the allocated health budget, because of its impact on the entire population. She mentioned that there is a need to invest more in health systems. At the same time, there is a need for completely rebooting and reframing how resources are allocated and transferred. The Pandemic Action Network is trying to reshape how we perceive and respond to these global threats and challenges.

Ms. Todd reiterated that countries need to acknowledge the fact that pandemics do not recognize international borders. She spoke about the global models of investment and fiscal cooperation such as the Global Public Investment Network, to which everyone contributes and everyone benefits from. She also mentioned the Pandemic Fund, which will be attempting to fill country-level gaps in specific areas of pandemic preparedness, prevention, and response readiness. Such international systems are essential to fill in the gaps for LMICs. All these aspects are linked at the global and national levels, and the interfacing between them is important. She also emphasized on the need to unlock funds through multilateral development bank reforms. Furthermore, she alluded that the Pandemic Action Network is trying to focus on primary healthcare for overall health systems strengthening and for improving pandemic preparedness and response.

Prof. Reddy highlighted that in the context of pandemic preparedness and response, the efficiency of surveillance systems is critical for both speedy recognition of threats and for timely response. In recent times, the use of digital molecular technologies, genomic testing, and wastewater surveillance has played an important role in tracking and responding to the COVID-19 pandemic. It is important to comprehend how surveillance systems are set to evolve and transform in the future and whether “shoe leather epidemiology”, will still continue to hold relevance.

Dr. Habib Hasan Farooqui Additional Professor, Public Health Foundation of India, mentioned that the function of surveillance is not just to identify the right signals that can help in the early detection of an outbreak, but also to identify signals that hint towards the emergence of new pathogens. Furthermore, in addition, to routinely performing active, passive, or sentinel surveillance, the pathogen can be tracked directly in the wastewater and other places. With the emergence of the One Health concept, it can be understood that many of those newly emerging pathogens may have spillovers from animal health. Hence, it is of utmost importance to undertake routine surveillance and keep track of animal health too. Dr. Hasan also spoke about tackling the emerging global challenge of antimicrobial resistance.

With the emergence of the One Health concept, it can be understood that many of those newly emerging pathogens may have spillovers from animal health. Hence, it is of utmost importance to undertake routine surveillance and keep track of animal health too.

With regards to global and regional cooperation in sharing surveillance data, Dr. Hasan said that a balance should be maintained between ensuring the protection of privacy and confidentiality and at the same facilitating the sharing of data across disciplines, systems, and across countries. Surveillance acts as a tool that can open pathways for research and innovation. However, there are gaps in ensuring access to technologies across regions. Hence, when regions or institutions share data that can aid the development of technologies, they must also be given an assurance of receiving equal benefits gained from this technology. This can help achieve a balance in responding to emerging threats. It is also essential to understand whether data-sharing systems are in place to enable the sharing of information between the public and private sectors or between countries. Thus, stakeholders can come together and identify focus areas for the development of policies and legal frameworks.

Dr. Hasan also spoke about the use of public and private sector data during a pandemic to build models that can predict future trends in disease outbreaks. Similarly, the use of digital technologies to carry out real-time tracking of search words and keywords specific to symptoms used on the internet and social media can also help in further understanding disease trends. Tracking the sales of pharmaceuticals can also help to understand the developments in a specific zone. In countries like India with significant levels of digital literacy and deep penetration of technology, the use of these technologies can be tremendously beneficial for surveillance. However, despite the numerous advantages, digital technology is a double-edged sword as it is often used for wrongful purposes. Social media platforms can be used for spreading misinformation and disinformation. Given this, the role of decision-makers and policymakers becomes even more important with regard to the use of digital technologies, especially while dealing with sensitive issues like pandemic control and vaccine hesitancy.

Prof. Reddy enquired whether the areas of infection prevention and control should become an essential part of training for all health professionals, including both doctors and other personnel involved in the health sector, along with the expansion of this knowledge beyond the boundaries of public health institutions.

Dr. Vijay Yeldandi Head, Infectious Diseases and Public Health, SHARE India, remarked upon the importance of engaging with the community at large, as a participatory action strategy to combat the problems of today.

This approach must identify the desired outcomes that allow people to lead a purposeful life with autonomy and dignity. It is important to ensure that both the medical and non-medical needs of the people are met. Infectious diseases, whether drug-susceptible or drug-resistant, should be addressed by considering the entire system as a complex adaptive system in a One Health One Planet approach.

Infectious diseases, whether drug-susceptible or drug-resistant, should be addressed by considering the entire system as a complex adaptive system in a One Health One Planet approach.

Prof. Reddy said that there is a need for a reinforced public health system that can handle shocks effectively. However, certain pandemics are unfolding and spreading gradually. Examples of this include the rising burden of non-communicable diseases, climate change, and the rising prevalence of obesity. It is essential to explore how public health can be strengthened using the best scientific evidence to serve and benefit society.

Dr. Fujie Xu Deputy Director, Health, Country Office (China) at Bill & Melinda Gates Foundation, spoke about the changing narratives around pandemics and other global public health challenges. In the context of China, Dr. Xu spoke about having limited public health professionals who are dedicated fully to disease prevention and control. It is essential to make the necessary resources available and train public health professionals for quality and competence. Furthermore, there is a need for multidisciplinary teams, where different members can respond to different challenges such as identifying and controlling outbreaks, understanding animal health, economic implications, and human behavior.

As a member of the audience, Dr. William Haseltine (Chair and CEO, ACCESS Health International) mentioned the example of the Massachusetts Consortium on Pathogen Readiness (MassCPR) in which knowledge was shared among people from many countries such as South Africa and China. The initiative also included case studies on how to deal with the problems. It included formal frameworks on how you share patient information, how you share patient samples, and how you handle intellectual contributions. He emphasized that there should be a higher degree of cohesion and formality of exchange.

Audience member Prof. Mala Rao (Director, Ethnicity and Health Unit, Imperial College London) also lauded the fraternity of health and medical professionals and others within the larger health workforce for coming together during the pandemic and building channels for information exchange, especially with regard to the efficacy of treatment regimens in use and speeding up of approvals by ethical committees for recovery trials.

Prof. Reddy spoke about the need to train public health professionals to counter anti-science emotions, fake news, misinformation, and disinformation that emerge during a pandemic and how communities can be engaged so that they do not fall prey to these campaigns.

Ms. Todd alluded to the skepticism shown by a section of healthcare workers towards the COVID-19 vaccines and how this can significantly dent the government's efforts at mass vaccination. Healthcare workers also belong to different communities and often carry beliefs and preconceived notions. They have to be communicated with clearly and educated correctly on scientifically proven treatments for disease control.

> *Skepticism among some healthcare workers towards COVID-19 vaccines hinders mass vaccination efforts. Clear communication and accurate education on proven treatments are vital to address their concerns and promote disease control.*

Dr. Yeldandi added that it is important to articulate the science properly so that it is understood by the public. It is important that we learn how to gain the trust of people by communicating more effectively.

Prof. Reddy mentioned that primary care physicians and frontline workers are expected to function well and be in close and continuous contact with the public. Also, in a well-functioning primary healthcare system, people draw comfort from what is communicated by a trusted messenger. Due to this, the top-down approach in healthcare systems is usually unable to produce the desired impact.

As a member of the audience, Dr. GVS Murthy (Director, Indian Institute of Public Health, Hyderabad) explained that most of the health workforce at the primary level, comes from local communities, and they have their own set of beliefs. In order to provide the services effectively, there is a need to look at the cultural context and work towards educating frontline health workers.

Audience member Prof Shalini Bharat (Director/Vice Chancellor, Tata Institute of Social Sciences) concurred on the need to allocate non-health funds to pandemic preparedness apart from the regular funding.

Prof. Reddy mentioned that there is a need to focus on creating health systems that can do more than one thing at a time during a public health emergency. For this, we require a strong, well-resourced health system that is capable of absorbing and utilizing the additional resources to meet the demands during a public health emergency. The demand should be for a "fit for purpose" health system.

Dr. Haseltine made a remark about building systematic surge capacities, that may not be used all the time but can be used at the time of health crisis.

As a part of the audience, Prof. Dennis Streveler (Professor of Medical Informatics, University of Hawaii) shared the experience of Hawaii during the pandemic. Hawaii was well-resourced in terms of physical infrastructure and information but faced a major manpower shortage during the pandemic.

> *A major challenge in combating future pandemics is building a global health workforce without exhausting national capacities. Thus, countries with younger populations must strive to meet global health workforce needs while preserving their national capacities.*

Prof. Reddy pointed out that one of the biggest challenges in fighting future pandemics would be the creation of a global health workforce without depleting national capacities. He mentioned that many countries such as Japan are seeing their younger populations shrinking, as is their health workforce. Hence, countries such as India and Africa which have demographically younger populations will have to try and meet the global health workforce requirements without depleting national capacities.

Prof. Reddy concluded that if we have to meet public health emergencies competently, we need people-partnered public health systems and make the best use of science to advance digitally enabled decentralized decision-making at the district level.

Key Findings

Lessons learned from minor shocks, especially methods, strategies, or innovations that were used during minor health shocks should be included in the public health training and curriculum.

Additionally, while attempting to strengthen the health system, the qualitative component of resilience should also be given primary consideration.

Multi-stakeholder participation and community groups' involvement are also necessary for resilient health systems.

With respect to surveillance, the "One Health" concept is essential, because newly emerging viruses may spill over from animals. Hence, tracking animal health is a crucial part of public health surveillance.

Furthermore, building public trust in healthcare institutions is crucial for clear and effective communication.

For health systems to be resilient, there is a need for people to partner with public health systems, in addition to advancing towards digitally enabled decision-making, even at the subnational levels.

Health systems must be strong enough at the onset of any health crisis to take in and make use of the extra resources available, as well as to handle the increasing demands.

Recommendations

- Global models of public health investment are crucial for overcoming national gaps in pandemic preparedness, particularly in LMICs.
- The focus should be on strengthening primary healthcare and community participation.
- International frameworks or policies are required to promote data-sharing and benefit-sharing of innovations such as vaccines.
- Public health systems are complex adaptive systems and should be addressed using the One Health and One Planet approach.
- In the case of investments for pandemic prevention and preparedness, the push should be to spend outside of designated health budgets.
- There is a need to work towards creating a global health workforce that can cater to global needs without depleting national resources.

Conclusion

Pandemic preparedness requires a comprehensive and multi-disciplinary approach. Investing in resources, training, and creating public health professionals from various areas of expertise are essential. It is also important to recognize that health threats are a global challenge, and investing in global funds can help fill the gaps in resource-constrained countries.

Communities can also play a significant role in surveillance activities by working closely with public health authorities. Pandemic preparedness requires a coordinated effort that involves the collaboration of different sectors, including public health, government, and communities. Investing in resources, training, and creating a global fund can help fill the gaps in resource-constrained countries. Developing fit-for-purpose health systems is crucial to respond to public health emergencies without compromising routine health services.

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The GLC4HSR's ANNUAL CONCLAVE 2023

Proceedings of the Annual Conclave 2023:

LEARNING SESSION 4

Strengthening healthcare provider systems to mount effective response to shocks while maintaining core functions.

Learning Session 4:

Strengthening healthcare provider systems to mount an effective response to shocks while maintaining core functions/sustaining essential needs

Moderator:	**Dr. GVS Murthy** Director, Indian Institute of Public Health, Hyderabad
Panelists:	**Dr. Krishna Reddy Nallamalla** President (Asia), ACCESS Health International
	Ms. Diah Satyani Saminarsih Founder and CEO, Center for Indonesia's Strategic Development Initiatives
	Prof. Mala Rao Director, Ethnicity and Health Unit, Imperial College London
	Dr. Fujie Xu (Remote) Deputy Director, Health, Country Office (China), Bill & Melinda Gates Foundation
Theme coordinators:	**Dr. Anuradha Katyal** Technical Head (Research & Data Analytics), ACCESS Health International
	Ms. Kavita Jha Technical Specialist (Healthcare Operations) ACCESS Health International

Executive Summary

Strengthening the healthcare provider system is pivotal to ensuring an effective response to shocks such as natural disasters, pandemics, and public health emergencies. Health systems should not only safeguard their capacity to meet routine demands but also focus on building resilience in peacetime. Healthcare systems around the world face various challenges that can disrupt their ability to provide quality healthcare services. Therefore, there is a need to build resilient health systems.

The COVID-19 pandemic is a paramount example that exposed various shortcomings of the healthcare system globally. It highlighted the importance of building a resilient health system in peacetime that responds effectively during surges. It is important to understand the type and the proportion of healthcare providers and facilities in a region to be able to identify the areas facing a shortage in terms of healthcare professionals and medical supplies. This enables health systems to prioritize resources to respond effectively.

Whether a health system is able to mount an effective response to a health crisis can be assessed only if current and accurate data on the capacities in infrastructure, people, technology, and the capacity utilization rate is available from both public and private healthcare providers and is shared with the governance management system.

Along with it, a real-time information system on the status of the health system will empower a healthcare provider system to build a simulation model enabling the health system to prepare itself for sudden disruption in demand or supply.

The creation of core competencies through collaboration and partnership between different healthcare providers, academic institutions, international agencies, and countries during peacetime is required. Furthermore, the co-creation of a framework for competencies, where everyone can come together to capture learnings while continuing to engage in the workforce, will help strengthen health systems globally.

Preparedness towards building resilience in the health system requires surplus resources and capacities to put them to use. This may require additional investment in infrastructure, equipment, and human resources. Therefore, cost-effectiveness along with a fine balance between surplus capacity and efficiency is a must. This is possible only if information on resource capacity and its utilization rate is available with the health system.

Globally, health systems evidenced a sudden disruption in demand and supply due to the COVID-19 pandemic. This resulted in a push for innovation, higher consideration towards environmental impact, mainstreaming of teleconsultation, digitization of education, use of virtual platforms for better sharing of knowledge across the globe, and speedy vaccine production.

Some of the newer areas that came under focus during the COVID-19 pandemic include the lowered population immunity post-pandemic, high rates of employee burnout, mental health, and the need for a forum on public health.

The rise in mental health issues post the COVID-19 pandemic is a public health challenge that needs to be tackled by the state and central governments.

An example of this is the work done by governments in the Philippines and Bangladesh. The Philippines has trained its lay public in mental first aid and the early identification and management of mental illness. Similarly, the Bangladesh government adopted a Mental Health Policy that reflects a shift from a medical to a psychosocial treatment model. It emphasized decentralization, community-based services, and support for persons living with mental illness.

India has a mixed healthcare provider system wherein the public health system focuses on providing basic service delivery through primary healthcare facilities and extending limited secondary and tertiary care through hospitals[1] located mostly in urban areas. This leaves many health needs of the population unmet. This gives rise to the need for private healthcare providers to emerge and meet these needs. The prompt response of the private healthcare sector in meeting people's unmet healthcare needs, its agile nature, and its efficiency which is driven by the nature of its business ethics have made it a major stakeholder in the Indian health systems.

Building trust with the private healthcare provider system by understanding and accepting the very nature of its business ethics is important for successful collaboration between the public and the private sectors. Exploring differential capital funding instead of the current method of private equity funding, strategic purchasing of services from the private sector that is not available with public healthcare providers, and involving private healthcare provider systems and civil society in decision-making are a few actionable policy changes.

Different health systems have different models of engagement between private and public healthcare providers. Strengthening primary healthcare by engaging and empowering community health workers should be among the main focus areas of any health system.

Session Introduction

Healthcare provisioning is the fundamental function of a health system. The session delved into the role of healthcare providers, service delivery systems, and the community in ensuring the effective provisioning of healthcare. It also focused on the learnings from the various adaptions that emerged during the COVID-19 pandemic. Panelists spoke about scaling up these learnings for use in routine healthcare delivery as well as during future emergencies.

Monitoring mechanisms are needed to bring together different sectors and domains for the benefit of all. The Indian healthcare system is a complex admixture of public and private providers, where the bulk of the healthcare workforce is within the private sector. The community's preference, for meeting their health needs, is skewed towards the private sector[2]. How health needs are met at an individual and population level and how communities interface with healthcare providers, formed the basis of the panel discussion.

The discussion began with, the importance of having a real-time dashboard on healthcare capacity, adopted by many Indian states during COVID-19, and how that can be formalized. Potential mechanisms to facilitate the facility register, such that real-time information is available to both healthcare providers and the community, were explored.

The session was moderated by Dr GVS Murthy Director, Indian Institute of Public Health, Hyderabad, a distinguished public health professional, professor, and researcher who has made significant contributions to community ophthalmology, disability-inclusive development, and global health initiatives.

Dr. Krishna Reddy, President (Asia), ACCESS Health International, highlighted the importance of having information on the status of the existing capacity, of both private and public healthcare providers. He mentioned that the current capacity utilization within health system management is an important component of preparedness. The Ayushman Bharat Digital Mission initiated by the Government of India is an example of such an attempt at having real-time information on facilities, healthcare professionals, diagnostic centers, and supplies.

Prof Mala Rao, Director of the Ethnicity and Health Unit, Imperial College London, stressed the need to build the core competency of providers for appropriate care delivery. For example, to meet the COVID-19 surge, ramping up of physical capacity and infrastructure such as beds, oxygen supply, and ventilators was seen in most countries. However, the competency to effectively operate and utilize this ramped-up capacity was lacking. Prof Rao spoke about the need to build competencies that can enable providers to deliver the appropriate care.

This was followed by a discussion around the co-creation of a framework for competencies that can help identify solutions as per the local context.

Panelist Ms. Diah Satyani Saminarsih, Founder and CEO of Centre for Indonesia's Strategic Development Initiatives, informed the panel and the audience about Indonesia's strategy to build the healthcare workforce reserve by recruiting young health professionals to join primary healthcare for a short period. This is done by providing them with the required training, better remuneration, and long-term engagement. This was piloted in the country ten years back and was widely used to meet the surge in demand during the COVID-19 pandemic.

Several interventions and innovations that emerged during the COVID-19 pandemic were granted emergency use authorization. Dr. Fujie Xu Deputy Director of Health, China Country Office at the Bill & Melinda Gates Foundation shared her suggestions for bringing these interventions and innovations into mainstream health practice. Whether to invest the fund in long-term preparedness or capacity building or meeting current requirements such as ongoing immunization programs or reproductive health issues are some questions that were posed by Dr. Xu for the speakers and the audience to reflect upon. She brings over twenty years of experience in public health research and program implementation with a focus on infectious diseases.

Panel Discussion Overview

The panel discussion began with identifying ways to formalize the learnings and best practices that emerged during the COVID-19 pandemic. A noteworthy innovation initiated by some state governments in India was the creation of dashboards for real-time information on the availability of resources such as vacant beds, ventilator beds, and oxygen supply among others. However, this learning through adaption has not been formalized or used extensively. Some of the questions that were brought up and discussed were:

- Can there be a similar mechanism that would help the community and the other providers to know about the resources available at a facility?
- How can this be formalized?
- Will there be an objection from the healthcare providers especially within the private sector to providing this information?
- Can a forecasting mechanism and a central supply line help in allocating surplus capacity, if available within the system, to the place where it is needed?

There is a need for simulation models that use real-time accurate data in a given geography to predict the sudden increase in demand or a deficit in supply due to shocks or disruptions. They can help health systems prepare for surges in demand and shortfalls in supply.

A notable innovation by certain state governments in India was the development of real-time dashboards providing information on resource availability, including vacant beds, ventilator beds, and oxygen supply. However, this adaptive learning approach has not been widely formalized or extensively utilized.

It is crucial to prepare for a surge during peacetime by understanding the very definition and scope of shock and simultaneously building and managing the cross-functional, core competency of teams with different specialties, to meet future surges.

There is a need to create volunteers or reservists to meet future surges in demand without creating excess capacity in the system. This can help ensure efficiency and cost-effectiveness while building workforce resilience. The involvement of the young health workforce by providing them with tangible incentives and better remuneration would facilitate long-term engagement. This will help create a workforce reserve that can be deployed during a sudden disruption of supplies. There is a need to invest in building the human capital and improving the quality of providers, thereby strengthening, and building a comprehensive primary healthcare system that is integrated with private provisioning.

Engaging the young health workforce with incentives and better remuneration would facilitate long-term commitment, enabling the creation of a reserve workforce that can be deployed during a sudden disruption of supplies.

Building trust by understanding and accepting the very nature of the private sector is crucial. Exploring a different engagement model of service delivery between the public and the private sector will leverage the strengthening of the healthcare provider system. Are there any breakthroughs or innovations that were provided emergency use authorization during the COVID-19 pandemic but were later withdrawn in the absence of evidence? The panel discussed these issues among others.

To build trust, it is crucial to understand and accept the nature of the private sector. By exploring alternative service delivery models between the public and private sectors, we can strengthen the healthcare provider system.

Key Findings

There is a need to create and formalize a facility-level dashboard for real-time information on the availability of health providers, their competencies, and the availability of physical infrastructure and supplies such as beds, oxygen, etc. The dashboard must be used extensively to monitor the demand and supply of resources. There is a need to identify the mechanisms to formalize the process of instituting the dashboard.

There is a need to assess and collect data on the health needs of the population. The data should be utilized to gain a better understanding of the current capacity utilization, to plan for the coming times, and to effectively prioritize resources to meet the sudden demand surge during a crisis. Health systems should strive to achieve a balance between efficiency and surplus capacity.

Timely identification of various types of shocks is important to respond to and prepare for a resilient health system. Medical students must be roped in and trained for crisis response to build workforce capacity. An efficient way of creating surplus human capacity for crisis situations is to train existing resources from other similar and allied fields. Primary healthcare workers must be regularly incentivized.

Strengthening healthcare provisioning requires building the capacity of the health workforce to deal with acute cases. Community workers have a critical role to play. Recreating the future of community health workers by increasing their remuneration, providing certification, improving their capacity for screening, and equipping them digitally are important. Solutions need to be contextual, and their adoption should be aligned with the local context.

There is a need to build a culture of collaborative learning among countries, hospitals, academia, and development agencies. Civil society should be invited to partake in the decision-making process.

Teleconsultations and virtual learning were widely used during COVID-19. Younger health professionals were able to access learnings that they could put into practice. This practice should continue. Moreover, younger health professionals should be involved in the decision-making process too.

The private sector holds a decentralized autonomy at an operations level, compared to the public sector. Effective public-private engagement can be achieved by accepting the differences in the way the two sectors operate. There should be tangible incentives for the private sector.

Recommendations

- Instituting live dashboards for real-time information on the provider system's capacity and utilization rates is pivotal to preparing for and mounting a rapid response to public health emergencies.
- There is a need to bridge the trust deficit between private and public health sectors for effective healthcare provision. Active steps must be taken in this direction.
- Designing comprehensive primary healthcare must keep people's needs at the center and not rely on providers' perceptions alone.
- There is a need to bridge the tech divide to ensure equitable access to healthcare innovations, both during emergencies and during normal times.

Conclusion

Healthcare provider systems are complex, spanning different levels of care, and encompassing diverse providers and resources including human and material resources. Uninterrupted healthcare provision during normal times and during emergencies is a central feature of a resilient health system.

To achieve this, real-time dashboards that can identify current capacities within the provider systems and a central supply line that ensures health needs are met, are top items in the wish list. The proactive approach versus the reactive approach of preparedness must be adequately explored.

Building health systems resilience demands the generation of surplus capacity which comes at a cost. Achieving a balance between efficiency and surplus in order to be cost-effective is critical.

Effective engagement of the private sector can be achieved through appropriate policy change. Health systems must invest in human capital and in building a reserve health workforce through cross-functional skills training and incentivization. Strengthening primary healthcare for integrated healthcare provisioning continues to be a priority for strengthening overall healthcare provisioning.

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The GLC4HSR's ANNUAL CONCLAVE 2023

Proceedings of the Annual Conclave 2023:

LEARNING SESSION 5

Good Governance: The prerequisite to building and achieving systemic resilience.

Learning Session 5:

Good governance: The prerequisite to building and achieving systemic resilience.

Context Setting:	**Dr. Krishna Reddy Nallamalla** President (Asia), ACCESS Health International
Moderator:	**Mr. Manoj Jhalani** Director, Health System Development, WHO SEARO
Panelists:	**Ms. Preeti Sudan** Former Union Health Secretary, Government of India **Ms. Sangeeta Singh** CEO, SACHIS, Govt of Uttar Pradesh, India **Dr. K. Madan Gopal** Senior Consultant (Health), NITI Aayog, India **Dr. Harsh Mahajan** Chief Radiologist, Mahajan Imaging **Ms. Rehana Riyawala** Vice President of Self-Employed Women's Association
Theme coordinator:	**Ms. Latika Rewaria** Project Manager – GLC4HSR

Executive Summary

The session on governance in health systems highlighted the importance of all actors, including state and non-state actors, and keeping people at the center, in the efforts to build resilient health systems. The session emphasized the complexity of governance and the importance of clear goals, accountability, transparency, and participation from all actors involved. Examples of successful participatory governance were discussed.

Collaboration between private and public sectors was discussed, and the issue of trust deficit was identified as a barrier to better collaboration. Transparency in the costs of healthcare services was suggested to overcome this trust deficit. Finally, the importance of civil society in advocating for peoples' rights in the health domain was highlighted. The panel concluded that integrating all three partners – public sector, private sector, and people – within the governance triangle, and making everyone accountable and responsible for their roles is essential for building resilient health systems.

Session Introduction

Governance at the global, national, and sub-national levels has come under intense scrutiny during the COVID-19 pandemic. Decisions made by global and national leaders have been analyzed and evaluated. Research is being conducted to identify the key attributes of effective governance during a crisis. However, governance is not limited to the government alone. Governance involves multiple actors, each having their respective roles and responsibilities. Good governance requires collaboration among and engagement from all actors, including government, the private sector, civil society, and individuals.

Governments have a crucial role in designing policies and enforcing laws that protect the interests and needs of their citizens. The private sector, on the other hand, is primarily focused on maximizing profits for shareholders, but can also bring agility, innovation, and efficiency to the table. People, as the third component of governance, have the right to access healthcare and at the same time, are also responsible for ensuring good health for themselves and others by practicing appropriate behavior and making the right choices. Health and digital literacy empower people to make informed decisions about their health. However, information asymmetry can put them at a disadvantage in the governance process.

The expert panel had representation from each pillar of governance - Ms. Sangeeta Singh, Ms. Preeti Sudan, Dr. K. Madan Gopal from the government sector, Dr. Harsh Mahajan from the private sector, and Ms. Rehana Riyawala representing the civil society. The moderator, Mr. Manoj Jhalani, represents the development sector and the World Health Organization. Together, they shared their perspectives on the role of each actor in good governance and discussed ways to leverage the strengths of each sector for the benefit of society.

Panel Discussion Overview

Dr. Krishna Reddy Nallamalla, President (Asia), ACCESS Health International, set the context for the discussion to follow, talking about how governance is being perceived by most of the people within and outside the system. Many high-level reports on pandemic preparedness and assessment, have identified leadership and governance as a critical component having overwhelming implications on pandemic response and health outcomes, even in the most developed healthcare systems across the world. Many developed countries faced poor health outcomes because of weak leadership and governance, among other factors.

Dr. Reddy highlighted that there is a lot of ambiguity in understanding the basic concept of governance, it is often equated with government alone. Government is just one actor within the larger governance ecosystem. Governance includes the roles and responsibilities of people working within the healthcare system and non-state actors like the private health sector, civil society, and people at large. All these actors have an important role to play.

Accountability of the private sector is an important area that is often neglected when it comes to governance. The triangle of governance has three important players. These are the public sector, the private sector, and the people. A continuous flow of information among these players and a balance of power are prerequisites for good governance.

Moderator **Mr. Manoj Jhalani, Director, Health System Development, WHO SEARO,** opened the discussion by emphasizing the significant and intricate role that governance plays in building resilient health systems. He explained that governance comprises several functions, features, and elements that make it complex. These include the following:

- Policy
- Strategy
- Institutional capacity
- Transparency
- Accountability
- Law and regulation
- Community empowerment
- Coordination
- Decision-making
- Translating evidence into action
- Monitoring
- Communication
- Trust
- Controlling corruption
- Information systems
- Multiple stakeholders with their own roles and responsibilities

> *The triangle of governance consists of three key players: the public sector, the private sector, and the people. Maintaining a continuous flow of information among these players and ensuring a balance of power are essential for good governance. The accountability of the private sector is often overlooked in governance.*

He further elaborated that governance is one of the six building blocks of the health systems defined by WHO, and it has both technical and political functions. While other building blocks are easy to measure, measuring governance is challenging. However, it is crucial for ensuring the effective implementation of strategic policies.

Mr. Jhalani opened the discussion by posing a question to **Ms. Preeti Sudan, Former Health Secretary, Government of India,** about the need for participatory governance involving state and non-state actors in the health system.

In response, Ms. Sudan highlighted the complexity of health governance, which requires clear goals, accountability, transparency, and participation from all actors involved. She emphasized the importance of building institutional processes that are not influenced by individuals working in those institutions.

Health governance is a complex construct that necessitates clear goals, accountability, transparency, and participation from all actors involved. It is crucial to establish institutional processes that remain uninfluenced by individuals working within them.

She provided examples of successful participatory governance, including the "Beti Bachao, Beti Padhao" (Save and Educate the Girl Child) scheme launched by the Government of India in 2015, which involved coordinated action between three ministries (Women and Child Development, Health & Family Welfare, and Education) and local champions from the community advocating for the program. These local champions were a part of the local community, who helped generate awareness and promote behavior change communication at the grassroots level. A minimal budget was mobilized for this scheme, and context-specific approaches were used to generate awareness using local self-government platforms such as Gram Sabhas and Khap Panchayats and community-based social events.

Ms. Sudan alluded to the need for institutional surveillance and coordinated action to facilitate participatory governance. This can be achieved through:

- Institutionalized public-private partnership (PPP) processes to encourage collaboration and participation of all stakeholders.
- Real-time information sharing among all stakeholders.
- Building trust among all parties involved.
- Routine monitoring to ensure institutional mechanisms are functioning effectively.

During the COVID-19 management response, the Government of India adopted the approach of collaborative leadership, whereby 11 empowered groups were created to assign different tasks among different ministries. These empowered groups were headed by secretaries of only two ministries, with the intention of working toward the common good.

Mr. Jhalani posed the second question to **Dr. Harsh Mahajan, Founder & Chairman, Mahajan Imaging & Labs,** emphasizing the importance of collaboration between the private and public sectors. He enquired about the existing barriers to collaboration and how they can be overcome to enhance collaboration between the two sectors.

In response, Dr. Mahajan addressed the issue of trust deficit, calling it a major challenge to effective collaboration between the two sectors. He mentioned that the private sector is often perceived as being solely driven by profit-making, which results in mistrust.

Dr. Mahajan emphasized that mutual trust is essential for any partnership. However, he also pointed out that most decisions regarding the private healthcare sector are usually taken unilaterally by the public sector often without involving the private sector. Unilateral decision-making then leads to a lack of collaboration and trust between the two sectors.

He cited an example from the past where the private sector faced strict rules and regulations, such as a hefty customs duty of up to 204% to import MRI machines into India in 1988. This kind of restriction hampered the private sector's ability to provide quality services.

To overcome the trust deficit, transparency in the costs of healthcare services is necessary. Dr. Mahajan suggested that instead of forcing the private sector to lower the prices of healthcare services, the government should monitor and compare the quality of services provided by private players. This way, the government can distinguish between good and bad private players and give appropriate opportunities to good private stakeholders.

To overcome the trust deficit, transparency in healthcare services cost is necessary. Rather than imposing price reductions on the private sector, the government should monitor and compare the quality of services provided by private players. This way, the government can differentiate between reputable and subpar private players.

Mr. Jhalani then turned to **Ms. Rehana Riyawala, the Vice President of the Self-Employed Women's Association.** He asked her about how civil society engages with the public and private sectors in advocating for gender rights in the health domain.

Ms. Riyawala, representing 2.5 million women across 18 states in India, highlighted the close relationship between civil society and the community, allowing them to better understand their needs. During and after the pandemic, digital platforms enabled them to maintain this connection. She expressed pride in SEWA's recommendations being acknowledged and incorporated into policies by the government and the NITI Aayog, including public distribution services during lockdowns, cash transfers, and representation on health committees. Civil society organizations are trusted by communities due to their strong networking and local presence and because they are not seen as profit-driven entities. Civil societies are mostly self-reliant with limited or no interest in monetary profit.

Mr. Jhalani directed his question to **Dr. K. Madan Gopal, Senior Consultant (Health), NITI Aayog.** He enquired how NITI Aayog generates evidence to inform health policies, especially since health is a state subject in India. He asked whether the states have the capability to generate relevant evidence to inform policies and whether NITI Aayog also relies on data from non-state players.

Dr. Madan Gopal pointed out that the missing link in good governance is the inadequate consideration of the "common good." He emphasized that policies should prioritize the well-being of people as a common good and should be formulated around this principle. NITI Aayog has developed a state health index that includes quantitative indicators to measure good governance at the central and state levels. For example, the continuity in tenure of a district magistrate in high-priority districts is an indicator of good governance. Governance has the potential to generate positive health outcomes.

> *The inadequate consideration of the common good is the missing link in good governance. Policies should prioritize the well-being of people as a shared benefit and be formulated based on this principle.*

Previously, India's health data was fragmented and scattered across various programs like the Integrated Disease Surveillance Programme, Integrated Health Information Platform, and vertical programs. To address this issue, a common platform called the "National Digital Health Mission" was created to consolidate all data on a single platform, enabling the identification of a "common identifier" for any particular health intervention.

Mr. Jhalani posed the final question to **Ms. Sangeeta Singh (IAS), CEO, State Agency for Comprehensive Health and Integrated Services, Government of Uttar Pradesh.** He requested her to share her experience with implementing the Ayushman Bharat- Pradhan Mantri Jan Aarogya Yojana (AB-PMJAY) scheme in Uttar Pradesh and how the State Health Agency collaborates with both government and non-government departments to ensure the successful adoption and implementation of the program in the state.

Ms. Singh explained that interdepartmental coordination has been a key aspect of the AB-PMJAY scheme in Uttar Pradesh. Initially, the roll-out was preceded by a socio-economic survey to determine the eligibility for this insurance scheme. However, it was realized that many vulnerable communities in the state were left out of the scheme. To address this, a supplementary scheme was launched by the state government under the Chief Minister's name, which covered an additional two million families. Requests were also received from the press, information department, and e-Shram portal to include more families that were entitled under the insurance scheme.

The success of any policy depends on implementing it at the right time and in the right way. Therefore, renaming the AB-PMJAY scheme helped to increase its uptake among beneficiaries in Uttar Pradesh. Other departments also collaborated with external organizations to prepare insurance cards, and Panchayat Sahayaks of mini Sachivalyas (local self-government bodies) were tapped to assist with this process.

Collaboration between the public and private sectors is crucial, not only during times of crisis but also during peacetime. For example, the involvement of the private sector in the deployment of RT-PCR COVID-19 testing helped to reduce its overall cost and improve its access and availability.

Key Findings

Leadership and governance are crucial in healthcare systems globally, and all three partners of governance - government, public, and civil society - need to work together for accountability and responsibility.

The key elements of health systems governance include policy, strategy, institutions, transparency, accountability, law and regulation, empowering communities in civil societies, coordination, decision making, monitoring, communication, trust, controlling corruption, appropriate role and responsibility of different stakeholders, and information systems.

Participatory governance with clear goals, accountability, transparency, and participation from all actors involved can lead to successful health outcomes, as seen in examples like the "Beti Bachao, Beti Padhao" scheme and immunization drives.

Trust between private and public sectors is crucial for collaboration, and transparency in the costs of healthcare services can help overcome trust deficits.

Civil society plays an important role in advocating for gender rights in the health domain and engaging with the public and private sectors to address health governance issues.

Overall, the discussion highlighted the complexity of health systems governance and the need for strong leadership, accountability, transparency, and trust among all stakeholders to improve healthcare outcomes and ensure effective governance in the health sector.

Recommendations

- Governance systems must actively engage multiple stakeholders including government, private sector, and civil society with people at the center.
- Interconnected governance will promote collaboration, coordination, and accountability among all key stakeholders in the healthcare system.
- There is a need to develop a framework that allows all stakeholders to collaborate as partners, leveraging their respective capacities to contribute to the public good. This applies particularly to the realm of innovation where the private sector often brings valuable ideas to the table.
- To overcome the trust deficit between the public and private sectors, transparency in the costs of healthcare services is necessary.
- The government should monitor and compare the quality of services provided by the private sector and give opportunities to those players who provide high-quality, cost-effective services.
- Civil society can engage with the public and private sectors in advocating for peoples' rights in the health domain by building institutional arrangements and processes that are not influenced by individuals working in those institutions.

Conclusion

The concept of governance is complex. It involves multiple actors such as the government, private sector, civil societies, and the larger community. Its many functions such as government stewardship, policymaking, strategizing, interdepartmental coordination, monitoring, communication, ensuring clean administration, and assigning appropriate roles and responsibilities make it a multi-level, multi-layered concept. Furthermore, governance mechanisms work to ensure transparency, accountability, and trust to effectively discharge the above functions. The COVID-19 pandemic has highlighted the significance of governance at the global, national, and sub-national levels.

Good governance requires the active participation of all three sectors including the government, private sector, and people. It involves designing and implementing policies that safeguard the essential needs and interests of the people. Leveraging the strengths of the actors, while having oversight on their functioning is integral to good governance. As one of the building blocks of the health system, governance has both technical and political functions, and measuring its impact is a challenge.

Moving forward, it is essential to focus on creating robust institutions and infrastructure, promoting collaborative leadership, and coordinating action across various actors. Emphasizing the "people connect", along with self-regulation and transparency in disclosing outcomes are essential to achieving good governance.

Civil society has significant trust among communities owing to its strong networking, local presence, and not-for-profit orientation. Civil societies are mostly self-reliant with limited or no interest in monetary profit.

It is imperative that policies prioritize the well-being of people as a common good and are designed with this principle in mind. The public and private sectors should work together not only during times of crisis but also during normal times.

The private sector is often perceived as being driven solely by profits. This creates a trust deficit between the government and the private sector. To overcome this trust deficit, transparency in the costs of healthcare services is necessary. Overall, transparency and monitoring will help to build trust between the public and private sectors, ultimately benefiting society as a whole.

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- Singapore's Pandemic Preparedness: An Overview of the First Wave of COVID-19

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The GLC4HSR's ANNUAL CONCLAVE 2023

Proceedings of the Annual Conclave 2023:

LEARNING SESSION 6

Building Financial Resilience: Ensuring the fiscal space to fund preventive and responsive measures to counter shocks and safeguard people against financial distress.

Learning Session 6:

Building Financial Resilience: Ensuring the fiscal space to fund preventive and responsive measures to counter shocks and safeguard people against financial distress.

Context Setting:	**Mr. Maulik Chokshi** Deputy Country Director (Technical), ACCESS Health International
Moderator:	**Dr. John C. Langenbrunner** Expert Advisor, Social Health Insurance, Indonesia
Panelists:	**Dr. Christoph Benn** Director, Global Health Diplomacy, Geneva **Ms. Diah Satyani Saminarsih** Founder and CEO, Center for Indonesia's Strategic Development Initiatives **Dr. Grace Achungura** Technical Officer (Health Financing for UHC-HCF) World Health Organization Country Office for India **Mr. HSD Srinivas** Project Director, Health Systems, Tata Trusts **Mr. Chang Liu** Founder and CEO, ASK Health Asia **Mr. Gautam Chakraborty** Senior Health Finance Specialist, USAID
Theme coordinator:	**Mr. Arun Nair** Technical Head (Health Finance), ACCESS Health International

Executive Summary

In the session on building financial resilience, panelists discussed the role of health financing as a critical lever for creating resilient health systems and ensuring fiscal space for countering economic and financial shocks. The discussions highlighted the role of multilateral institutions and the pooling resources of national governments and the private sector for pandemic preparedness. The session also emphasized the role of Public Financial Management (PFM) systems in ensuring health security, enhancing intersectoral collaboration, efficient utilization of funds, and engagement with the private sector during economic and health shocks. The panel also discussed various ways to bring in new revenues for healthcare financing, including private sector participation and pooling at a national level.

In a nutshell, the session highlighted the importance of ensuring sufficient monetary resources in the system and the flexibility to reallocate and inject extra funds. This can ensure the stability of health system funding through countercyclical health financing mechanisms and reserves, flexibility in purchasing arrangements, and ensuring comprehensive health coverage during a crisis.

Session Introduction

Health crises (like COVID-19) or economic crises trigger exogenous shocks to the national economy, resulting in a slowing down of economic activity, rising unemployment, and budgets being struck. Such crises often lead to tightening and curtailing the budget, owing to limited fiscal space. This typically affects core health system functions and activities. Economic recession, disasters, and health shocks lead to a slowing down of economic activity, thereby affecting both the demand and supply sides of the economy. A robust health financing policy plays a vital role in establishing resilient health systems by ensuring they are well-prepared in advance and equipped to respond effectively.

Within a country, given the fiscal constraints and ever-increasing need for financing, the ability of a government to mobilize, restructure, and absorb available resources is crucial to enhance the efficiency of healthcare financing. The session focused on understanding how the current global health financing system can be strengthened to achieve financial resilience. In addition to this, the session also discussed the strategies required for economic and financial resilience and the capacity of Public Financing Management Systems (PFMS) at national and sub-national levels.

Panel Discussion Overview

In his opening remarks, **Mr. Maulik Chokshi, Deputy Country Director (Technical), ACCESS Health International** focused on the importance of financial resilience, especially in the context of the acute economic shock caused by COVID-19. COVID-19 was the global economy's most significant financial shock after the economic recession in 2009. In retrospect, evidence suggests that very little was done after the economic crises of 2009, and if the system had learned from that crisis, countries could have handled the COVID-19 shock better.

The post-COVID era has seen contractions in GDP across all countries. It has also seen learnings on mobilizing financial resources for tackling disasters. Much effort is now put into making those systems more robust to protect against health risks or financial risks in health outcomes and at a livelihood level. Public expenditure on health and overall social protection programs has decreased across countries. Hence, we need to think proactively about reducing financial barriers to accessing healthcare services.

International financial institutions played an important part and mobilized around USD 38 billion as part of the COVID-19 response strategy. There has been a stronger appreciation for more public spending toward strengthening the health system. The discourse also stresses the importance of private spending for public goods. It makes a stronger case for learning and analyzing how to make financial systems resilient and absorb the impact of shocks like the COVID-19 pandemic.

Dr. John C. Langenbrunner, Expert Advisor, Social Health Insurance, Indonesia, moderated the session and set the broad contours of the panel discussion.

In his opening remarks, Dr. Langenbrunner mentioned that healthcare spending must be countercyclical to enable substituting the private sector for public healthcare services. During a crisis, there is a need to maintain and improve access to essential services for the population, especially the poor and the vulnerable. There is also a need to preserve health sector spending and employment, which may also provide economic benefits. With this perspective, there are three levels where health financing is significant during a crisis.

> *Healthcare spending should be countercyclical to facilitate substituting private sector healthcare services for public sector ones. During a crisis, it is crucial to maintain access to essential services, especially for the underprivileged. It is equally important to preserve healthcare spending and employment, which can yield economic benefits.*

Firstly, health financing can be thought of as money coming in. Secondly, it is important to see how you manage and pool that money. Thirdly, how this money is allocated is also important.

At the first level are revenue management and allocation. Resources for healthcare are primarily mobilized through general revenues, social health insurance, and private insurance. During COVID-19, we saw new taxing methods to generate resources. We also saw support from multilateral organizations and philanthropic foundations.

The second level involves ensuring excess capacity for the next crisis, pandemic, or any other shock. Is there a need to carve out some of that money to address and fund the excess capacity that is lacking in the system? Public financial management is another important aspect that is considered here. During a crisis, countries may use various means to allocate resources; however, often there is a gap in ensuring that the allocated funds effectively reach the provider level. In some cases, it was months before the money could reach the provider level. Hence, focusing on public financial management (PFM) systems and their capacity efficiency is essential.

The third level focuses on efficient resource utilization which is particularly essential in times of crises. Revenue mobilization contributes to financial resilience while pooling and purchasing services enhance adaptive resilience. The key objective is to ensure 'agility' in the health financing system to address the pandemic and other challenges.

With these initial remarks, Dr. John C. Langenbrunner opened the discussion. His first question was directed to **Dr. Christoph Benn, Director of Global Health Diplomacy, Joep Lange Institute, Geneva,** about the role of multilateral agencies in ensuring financial support for health systems during a crisis.

During a crisis, ensuring the effective allocation of funds to reach providers is crucial. However, there is often a gap in this process, resulting in significant delays before funds reach the provider level. Focusing on the capacity and efficiency of public financial management (PFM) systems is essential.

Dr. Benn's response highlighted the complementary role of international institutions, WHO and The World Bank, during the COVID-19 crisis. Several other institutions also supported the efforts of the WHO and The World Bank. Notable among them is The Global Fund and how it helps those at the bottom of the pyramid using pooled funding of the Fund to finance national programs. The Global Fund has the mandate to develop products that are important for health systems and the functioning of healthcare but lack sufficient incentives for private companies to invest in their development.

Dr. Benn cited the example of access to antiretroviral drugs for HIV or tuberculosis, diagnostics, and tests, mosquito nets for malaria, etc. This support is made possible through the pooled funding of the international community, facilitated by the Global Fund, which then allocates these resources to national programs. The Global Fund's pooling mechanism not only subsidizes the products but also reduces the price of drugs by 50 to 90 percent. Countries pay substantially less by pooling all the world's resources and then going to the manufacturers. The Global Fund also works closely with people living with and affected by diseases like TB, Malaria, HIV, and neglected tropical diseases. Dr. Benn also mentioned the role of organizations like the Coalition for Epidemic Preparedness Innovations in providing financial support for developing vaccines for neglected tropical diseases. The Pandemic Fund was created last year under the Indonesian G20 Presidency, as a response to the COVID-19 Pandemic, for funding diagnostics and therapeutics. The Pandemic Fund is an example of how a global pool of resources can be used for pandemic preparedness. It addresses the limitations of relying solely on national health systems.

Dr. Benn underlined the importance of pooling resources from multiple stakeholders including national governments, global funding institutions, private foundations, and the private sector. Moreover, the distribution channels of national and subnational governments play a crucial role in service delivery. This model ensures the national governments' collective responsibility and ownership in the decision-making process. Dr. Benn also spoke about the issue of tackling the debt burden or debt crisis caused by COVID-19. The debt level of all countries increased due to the pandemic.

Furthermore, with inflation, increasing energy prices, food prices, and interest rates, many countries, specifically LMICs, are facing a severe crisis. Many countries have not only reached but exceeded their sustainable debt level, which has affected their fiscal space for health.

Dr. Benn cited the discussions about debt restructuring to reduce the debt burden. Debt swaps for health are another instrument through which countries can alleviate some of their debt in place of investing in health systems.

Dr. Langenbrunner posed his second question to **Dr. Grace Achungura, Technical Officer (Health Financing for UHC-HCF) WHO Country Office for India,** regarding the need for Public Financial Management and global architecture from the WHO standpoint. Dr. Achungura highlighted the positive aspect of the ongoing discussions on resilient health systems and the increased attention it has received owing to the COVID-19 pandemic. The discussion on health systems resilience started during the Ebola outbreak in Africa, but the issue has gained substantial importance since COVID-19 affected the entire world population. WHO had started articulating some issues around financing common goods for health, even before the COVID-19 outbreak.

However, in the wake of the pandemic, there are many more vibrant discussions taking place at the global level regarding mobilizing resources for common goods. For instance, when it comes to financing research and development (R&D), many countries in Africa and Asia face limitations in allocating significant upfront costs. However, if there were mechanisms in place to invest in expenses such as R&D, it would lead to a notable improvement in the provision of public goods. The other concerns are around information and surveillance systems that many countries had neglected during the pandemic. The Pandemic Fund and similar instruments can facilitate the creation of open-access global public goods that countries can adopt quickly or adapt to suit their setting to make them respond to shocks much better.

After the COVID-19 pandemic, global discussions are intensifying on resource mobilization for common goods. Many countries are unable to allocate substantial upfront costs for research and development (R&D). Establishing mechanisms to invest in expenses like R&D would notably improve the provision of public goods.

With regard to financing principles, WHO plays a vital role in harmonizing the understanding and exploring various possibilities associated with different facilities available to countries. The processes involved in the International Monetary Fund and The World Bank, as well as other global funding mechanisms, have distinct procedures. Therefore, it is imperative to assist countries to use these resources in a complementary manner. Another important role played by the WHO is articulating the actual needs of the countries in terms of pandemic preparedness. This involves efforts to assess the costs and funding gaps associated with preparedness and response for future epidemics.

Dr. Achungura highlighted the need to bring harmony in financing from different funding entities to ensure that dedicated funding for preparedness for future pandemics is made available for facilities and for domestic planning.

Dr. Langenbrunner mentioned the need for countries to revise their tax structures to improve their fiscal capacity and asked **Ms. Diah Satyani Saminarsih, Founder and CEO, of the Center for Indonesia's Strategic Development Initiatives** about the tobacco taxes in Indonesia.

Ms. Saminarsih detailed the context of health taxes imposed in Indonesia as an outcome of a research study conducted by her institution. The study took two and a half years to complete and found that the disease burden of smoking in economic terms was Indonesian Rupees 27.7 trillion[1]. But the revenue received by the government on paper is only 7.4 trillion, and there was a huge gap that still is not being covered. The study also found that if the excise tax is increased up to 45 percent from the current tax levels, the revenue gap can be bridged. In consultation with the Ministry of Finance, the excise tax on tobacco was increased twice by 10 percent each. This was a breakthrough because this was done during an election year, and typically governments are hesitant to increase taxes during that time. Even though the full potential of an increase in taxes has not been fully realized, this change in tax policy is a welcome sign.The research team is conducting a similar exercise around taxing sugared beverages and providing the government with the numbers in terms of disease burden and revenue generation.

Dr. Langenbrunner stressed that countries should now consider pro-health taxes seriously, including the tax on cigarettes and smoking and the tax on sweet and sugary beverages. The key to effective sin taxation is to tax things that will improve health outcomes overall without hurting macroeconomic growth.

> *Countries should consider pro-health taxes on cigarettes, smoking, and sweet beverages among others. The key to effective sin taxation is to improve overall health outcomes without negatively impacting macroeconomic growth.*

Dr. Langenbrunner directed the next question to **Mr. Gautam Chakraborty, Senior Health Finance Specialist, USAID** on the scope of using blended financing models during crises and the challenges faced by the private sector in implementing such models.

Mr. Chakraborty initiated the discussion by highlighting the difference between regular and blended financing models. He opined that even as public financing is essential for financial resilience, any country would still require private-sector commodities and services. Under the assumption that the government provides the entire gamut of service delivery, the public system still needs private production of goods, services, and commodities to provide those services. Indeed, the involvement of private financing in the healthcare sector is unlikely to be completely sidelined. Private financing is also essential for the government to provide streamlined health service delivery.

This being the case, service delivery during crises differs from how health system functions are maintained during normalcy. This means that financing mechanisms needed for systems to be resilient also differ.

Financing to build resilient systems focuses on two key areas. Firstly, one must consider how to finance redundancies, which refers to assets and systems that, over time, may no longer provide services but still require financing even when their revenue-generating potential diminishes. To effectively respond to shocks, it is essential to have redundant systems and assets in place, that are designed with multiple uses and capabilities. The critical question, in this context, is how to create or finance a resource or asset that will be used at some point for a relatively short period.

> *To effectively respond to shocks, it is essential to have redundant systems and assets in place, that are designed with multiple uses and capabilities. The key question is how to finance resources and assets that are used for a short period.*

The second aspect to consider is how to finance surge capacity. This requires a sudden increase in the stock of goods and services and human resources. Regular private financing will likely be averse to financing such requirements considering the revenue forecast from them is uncertain beyond a few months. In both these contexts, blended financing provides an alternative by helping to derisk the uncertainties around production revenue.

Blended financing is crucial to two key areas. During crises, blended financing instruments help mobilize resources by derisking revenue flows. This is done by offering partial or full loan guarantees, conditional funding opportunities, and providing risk guarantees to the private sector to develop essential commodities. Blended financing models remove the uncertainty around revenue streams through advanced market commitment, thereby harnessing private-sector investment. Blended financing enables combining private investment, debt, equity, and grants to provide the risk guarantee and support affirmative actions. For example, during COVID-19, USAID supported the National Health Authority (NHA) in creating a fund worth USD 300 million for supporting healthcare innovations in the development of vaccines and devices and even products like drones. Within this fund, approximately USD 30 million was contributed in the form of grants from USAID. These grants played a crucial role in leveraging an additional USD 270 million through debt capital.

Blended financing instruments include either partial loan guarantees or full loan guarantees. Blended financing platforms can also use global financing structures to address local issues like the new social stock exchange under the National Stock Exchange in India.

Dr. Langenbrunner directed the next question to **Mr. HSD Srinivas, Project Director, Health Systems, Tata Trusts** about the role of philanthropic organizations in crises and the sustainability of such efforts in ensuring resilience in financing.

Mr. Srinivas spoke about his experiences during the first and second waves of the COVID-19 pandemic in India and the philanthropic contribution from the Tata Group to the Indian government during this time. The Tata Group contributed approximately USD 200 million under various initiatives to fight COVID-19. The first wave was ridden by uncertainties and required philanthropies to respond in tandem with the national government's response. The immediate need at the time was to procure commodities, mainly from China. The Tata Group supported importing around 570 tons of PPE kits from China. In the first year, the group also invested in developing model hospitals in the public sector. The first wave required a bigger response from the public health system. However, the second wave hit health facilities, owing to a high surge in demand, overwhelming the state's health systems. Philanthropic funding during the second wave supported the government efforts in augmenting surge capacity. The funding was mainly directed towards augmenting the service delivery capacity of public health institutions, upgrading the infrastructure of existing facilities, setting up oxygen facilities, and procurement of commodities. The need for adaptability of the system was looked into, and the need and requirement of public facilities were assessed. This served as a benchmark for spending philanthropic money during the second wave of COVID-19.

Dr. Langenbrunner asked **Mr. Chang Liu, Founder and CEO, of ASK Health Asia,** about the public and private sector financing in China for the COVID-19 crisis. Mr. Chang Liu pointed out that private financing needs are complementary, and the public system needs to take the lead in establishing the structure to achieve financial resilience. In Singapore and China, the private sector has played a significant role. About 100 million people are covered under the current model, demonstrating the sustainable impact of private sector financing.

China serves as an example of a multi-layered structure incorporating a health insurance model and private sector financing. Similarly, Singapore's financing model reflects a commitment to long-term sustainability and the contribution of both the private and public sectors to achieving UHC. So, the private sector is essential in health financing because it acts as a buffer. The buffer layer must complement, rather than substitute for, the public financing role.

We must ensure equitable health financing through different mechanisms, rather than solely relying on government budget allocations to subsidize the poor. A value-based approach helps provide evidence to the government for prioritizing health financing.

Mr. Liu gave examples of models in Singapore and China where private sector financing made a big difference. The Singapore model of Integrated Shield Plans and the city supplementary insurance models of China are good examples of how the private sector can do complementary health sector financing. Mr. Liu emphasized the need to ensure equitable health financing through different mechanisms, rather than solely relying on government budget allocations to subsidize the poor. In this context, a value-based approach is very important and helps provide evidence to the government for prioritizing health financing.

Mutual insurance and crowd-funding models also have the potential for transferability to other developing nations. Evidence-based value assessment provided by charities and the private sector can help governments adequately prioritize their budget allocation towards healthcare needs.

Dr. Langenbrunner posed his final question to Dr. Achungura about the challenges and key learnings in budget allocation and efficient utilization of funds during the COVID-19 pandemic.

Dr. Achungura highlighted the importance of Public Financial Management (PFM) systems in ensuring health security, enhancing intersectoral collaboration, efficient utilization of funds, and engagement with the private sector during crises. The public financial management system plays a substantial role, whether in the context of handling money from global financing mechanisms or engaging with the private sector and other intersectoral collaborations. From the perspective of achieving UHC and also providing health security, we need to have a predominance of public spending, whether it is domestic or coming from the global level.

> *The public financial management system plays a substantial role in handling money from global financing mechanisms, engaging with the private sector, and facilitating inter-sectoral collaborations. To achieve UHC and health security, a predominance of public spending is necessary.*

Further, PFM systems have a significant role in revenue-raising, expenditure management, and accountability. From the revenue-raising side, the experiences of Ebola and COVID-19 point to the need for enabling legal instruments, in the form of guided regulations that can be used to mobilize additional revenue quickly. Therefore, whether it involves allocating supplementary budgets or reconvening the parliament to implement necessary instruments, all these measures are of significant importance. Another crucial aspect is the planning capacity, which, regrettably, is lacking in many countries, including India, where decentralized systems are in place. The planning capacity in this regard must be built in the lead-up to response while we work on preparedness. Along with this, there is a need for the budget structure to enable joint planning with other departments. In addition to all these elements, the capacity for these budgets is crucial.

During COVID-19, many countries, especially lower-middle-income countries, faced challenges in absorbing money, and faced instances wherein money mobilized during the response phase could not be utilized. Issues pertaining to approval mechanisms and the rules within the PFM reprioritization process limit the effective execution of budgets.

Countries with mechanisms that could relax PFM rules during emergencies were able to respond much faster. Systems that were able to relax laws or rules regarding procurement, particularly those favoring specific sources, experienced the benefits of opening opportunities to a broader range of suppliers. This expansion in supplier options and the streamlining of the procurement process, including shortened approval requirements, facilitated faster and more efficient management of resources. In addition, in the case of contingency funds like pandemic response funds, some countries have rules around when the release of these funds can be triggered. This also helped the overall response efforts.

On the execution front, countries with robust PFM processes and effective mechanisms for engaging contracting partners, such as private sector providers, were able to leverage additional capacity from this sector to support the efforts of the public sector. Similarly, in countries having existing mechanisms within the PFM system to engage with private sector providers through various payment mechanisms like capitation, the ability to manage surge capacity during the pandemic was significantly enhanced.

> *Countries with robust public financial management (PFM) processes and effective mechanisms for engaging contracting partners, including private sector providers, were able to utilize the additional capacity from this sector to support the efforts of the public sector.*

Dr. Achungura also highlighted the need to provide health providers with adequate autonomy and flexibility during a pandemic. Countries that had good PFM practices to mobilize the private sector did a better job in improving surge capacity and timely payment to human health resources. Dr. Achungura reiterated the need for flexibility, greater autonomy within the decision-making process at the provider level, and less rigidity within the PFM processes to help effective fund management during crises.

In his concluding remarks, Dr. Langenbrunner emphasized that health financing should strive to create dynamic health systems that can constantly adapt in response to crises. By building financial resilience, these dynamic systems can better adapt to transformative changes.

Key Findings

The discussions focused on financial resilience and the critical components of ensuring financial resilience during crises. The expert panel discussed the importance of financial resilience in health systems, particularly in the light of COVID-19.

Panelists emphasized that financing is a crucial lever for creating resilient health systems. They discussed the impact of the pandemic on GDP and public expenditure. Further, the discussion covered other areas such as sources of revenue, pooling and management of funds, and spending allocation. The speakers also touched upon excess capacity, public financial management, debt levels, and pandemic preparedness.

Dr. Christoph Benn discussed how pooling resources at a global level can reduce costs and improve access to drugs, diagnostics, and devices. Dr. Grace Achungura from WHO discussed the need for harmonization in financing principles around pandemic funds to ensure efficient response to pandemics. Dr. Diah S Saminarsih detailed the analytical work on pro-health taxes targeted toward tobacco products in Indonesia, which could help close the gap between the revenue received by the government and the macroeconomic cost of smoking. Mr. Gautam Chakraborty spoke about blended financing models and the need for financing redundancies and surge capacity in the efforts to build health systems resilience. The discussion also covered the innovative blended financing models created in response to COVID-19. These models involved leveraging debt capital alongside partial loan guarantees and portfolio-level social success loans to mobilize private investments.

Mr. HSD Srinavas emphasized partnerships and sustainability as important considerations in philanthropic organizations during pandemics. Philanthropic investments consider sustainability and program impact crucial, even if it is difficult to measure. Tata Trusts contributed around $200 million under various initiatives during the pandemic in India. Mr. Chang Liu highlighted that the private sector is vital in achieving sustainable healthcare financing through a multilayered complementary model rather than substituting public financing. Private insurance programs like Singapore's Integrated Shield Plan and China's City Supplementary Medical Insurance have successfully added to the benefits package to people while growing benefits sustainably without taking away anyone's share.

Recommendations

- Ensure coordinated efforts between national governments, international funding institutions, and the private sector to mobilize common pool resources to tackle economic and health shocks effectively.
- Develop robust public finance management systems to help increase revenue generation and ensure the efficient execution of funds during crises.
- Establish regulatory instruments and guidelines at the national level to mobilize additional revenues and supplementary budgets during crises.
- Explore the scope of alternative funding mechanisms such as blended financing models and philanthropic financing to complement traditional sources of funding during crises.
- Implement pooling and purchasing reforms that incentivize service providers to cover the costs of service delivery during health shocks and foster the adoption of innovative payment models tailored to specific health needs, such as COVID-19 treatment.

Conclusion

In conclusion, the panel discussion underscored the critical role of a dynamic health financing policy as a key policy knob for building resilient health systems. During emergencies, health financing policies should prioritize the mobilization of contingency funds to prevent disruptions in health services, eliminate financial barriers to accessing healthcare, and ensure sufficient funding for individual and population-based health services. Additionally, developing robust public financial management (PFM) systems plays a vital role in building resilient financing, enabling governments to reallocate funds rapidly in response to economic or health shocks.

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LEARNING SESSION 7

Digital as Enabler: The pivotal role of robust, integrated, and interoperable health information systems in building resilience

Learning Session 7:

Digital as Enabler: The pivotal role of robust, integrated, and interoperable health information systems in building resilience

Moderator:	**Prof. Dennis Streveler** Professor of Medical Informatics, University of Hawaii
Panelists:	**Dr. Basant Garg** Additional CEO, National Health Authority
	Dr. Alvin Marcelo (Remote) Executive Director of the Asia eHealth Information Network
	Dr. Kevin A. Schulman Professor of Medicine, Stanford University School of Medicine
	Mr. Kiran Anandampillai Advisor – Technology, National Health Authority CEO and Founder, iDrishti
	Dr. Aida Karazhanova Economic Affairs Officer, UN Economic and Social Commission for Asia and the Pacific
Theme coordinator:	**Ms. Supriya Prabhakar** Senior Technical Specialist, Digital Health ACCESS Health International

Executive Summary

The panel discussion centered around the pressing need for a robust, integrated, and interoperable national health information system that can function efficiently during normal times and during public health emergencies. This system comprises three main modules: provider systems, health financing systems, and resource management systems, which must collaborate to provide better health services. To achieve this, good health information must meet five criteria: relevance, timeliness, coverage, completeness, and accuracy.

The challenges in implementing such systems were discussed. These include low adoption, a lack of knowledge and digital infrastructure, and the need to consider requirements from the bottom up. The importance of incentives to drive data collection, improve the accessibility and usability of health systems, and ensure that the implementation of new schemes considers the ecosystem enabler side, were emphasized.

The discussion also highlighted the need for a unique identification system to support the national health insurance scheme and the importance of identity management and inclusion for its success. Standardization and interoperability were also deemed essential for the system to succeed.

The COVID-19 pandemic underscored the need for effective governance to manage disasters. India's response to COVID-19 provided valuable lessons. The crucial role played by private entities in shaping the response, the importance of digital systems in delivering transparent and accountable services, and the need to consider the population's digital literacy were discussed.

Session Introduction

The panel discussion was moderated by **Dr. Dennis Streveler, Professor of Medical Informatics, University of Hawaii,** who holds over fifty years of experience in applying digitization and computerization to healthcare processes worldwide. His extensive global consulting experience, including visiting over 70 countries, made him an ideal candidate for this role.

Dr. Aida Karazhanova, Economic Affairs Officer, UN Economic and Social Commission for Asia and the Pacific, is an expert in advocating the use of ICT for development. She promotes the use of digital technologies that link the digital and green components and supports the implementation of action plans related to ICT and disaster risk reduction at the UN ESCAP.

Dr. Alvin Marcelo, Executive Director of the Asia eHealth Information Network, contributed to the discussion on the intersection of healthcare and technology, with extensive research in eHealth and health information system development.

Dr. Basant Garg, Additional CEO of the National Health Authority, brought his expertise in healthcare policy and emergency management to the discussion, providing valuable insights on the implementation of national health information systems.

Dr. Kevin A. Schulman, Professor of Medicine, Stanford University School of Medicine, provided his expertise in healthcare innovation, policy, and economics, contributing to the discussion on the use of digital technologies in healthcare and the economic implications of building national health information systems.

Mr. Kiran Anandampillai, Advisor–Technology, National Health Authority CEO and Founder, iDrishti shared his profound insights on the creation of digital public goods for healthcare initiatives. His invaluable experience in technology and healthcare provides him with a unique perspective that is highly sought after in the industry.

The discussion emphasized the importance of national health information systems for effective healthcare policy and emergency management, with digital technologies aiding in the early detection of potential epidemics and assisting with clinical analysis and resource allocation. The presentation of case studies highlighted the design and implementation of national health information systems, the challenges faced, and the emerging dialogues around global public digital goods to benefit low- and middle-income countries. The discussion underscored the need for innovative solutions to healthcare challenges, with a focus on technology-driven initiatives.

Panel Discussion Overview

A robust and interoperable national health information system is essential for the efficient functioning of healthcare systems, particularly during public health emergencies. Digital technologies can aid the early detection of epidemics and provide timely and accurate health information. Many countries, including India, have announced policies to facilitate the integration of national digital health information systems.

During the panel discussion on the topic, the experts shared their insights on the key factors necessary for the successful implementation and management of national health information systems.

Mr. Kiran Anandampillai suggested re-evaluating the top-down approach of health system adoption in India, incentivizing data collection, and improving the accessibility and usability of health systems to relieve the burden on health workers. He also emphasized the need to identify opportunities for value in generating data. His contributions to the discussion centered around the use of digital technologies to create public goods that can be utilized by healthcare providers in low-income and middle -income countries.

> *Reassessing the top-down approach to health systems in India is essential. It is crucial to incentivize data collection and enhance the accessibility and usability of health systems data to alleviate the burden on healthcare workers.*

Mr. Anandampillai's insights were not limited to his experience in India alone but also included a global perspective on healthcare technology. He shared his thoughts on the potential impact of these digital public goods on healthcare delivery, emphasizing the need for innovative solutions to address the challenges faced in healthcare in these regions. His contributions were well-received by the panel, and his ideas are expected to inform the development and implementation of healthcare technology initiatives in the future.

Dr. Basant Garg suggested using a unique identifier database for the national health insurance program, and that the implementation of new schemes should consider not only the providers' perspective but also the ecosystem enabler side to help the whole health ecosystem. He emphasized the importance of long-term planning and adequate funding and resources, as well as continuous evaluation and improvement based on feedback and data analysis.

> *Utilizing a unique identifier database for the national health insurance program is necessary. When implementing new schemes, it is important to consider not only the perspective of healthcare providers but also the ecosystem enabler side to support the whole health ecosystem.*

Dr. Alvin Marcelo highlighted the importance of identity management and inclusion, a unique identification system, standardization, and interoperability for a successful national health insurance system. He believed that India's approach to the Ayushman Bharat Digital Mission can offer valuable lessons for other countries. He emphasized the need for effective governance in managing disasters.

Dr. Aida Karazhanova emphasized the importance of sustainable development and resilient infrastructure in policymaking. She suggested that collaboration using the six pillars of resilience can assist countries in creating better networks for the digital economy. Data management can be addressed once policies under which countries operate are identified.

Dr. Kevin Schulman discussed the slow adoption of electronic health record systems in the United States, the importance of interoperability, and the failure to use technology solutions during the COVID-19 pandemic. He emphasized the need to improve patient outcomes and increase medication adherence and knowledge and called for a focus on ubiquity and primary use cases in healthcare technology architecture.

Dr. Basant Garg stated that the COVID-19 pandemic provided valuable insights into designing more resilient systems in India. He emphasized the importance of digital systems in delivering services with transparency and accountability. However, he also noted that it is crucial to consider the population's digital connectivity and adoption before implementing such systems.

Mr. Kiran Anandampillai emphasized that India faced challenges with delays in COVID-19 test results due to insufficient digital infrastructure and knowledge. He suggested creating a health data pipeline that allows various providers to connect their systems and a unique patient identifier system like the Ayushman Bharat Digital Mission to address this. However, caution should be taken in selecting and protecting the patient identifier, and progress is still needed in convincing providers to adopt digital systems.

Dr. Kevin Schulman highlighted the issue of data silos in the US during the pandemic and the importance of communication among different systems. He spoke about the passing of a law that required every health information system to have an API for accessing records but was implemented after a delay of five years due to industry resistance. He also emphasized the need for quick learning during pandemics, as demonstrated by the UK recovery trials, and the importance of putting resources in place to enable this.

Dr. Aida Karazhanova is leading a working group that is developing a monitoring dashboard prototype for innovation and technology in sustainable development. They are using an analytical framework to present outcomes for the region and plan to launch a working paper series soon. Resilience is essential in informed decision-making, and interoperable digital technology needs to be used to prevent issues and bottlenecks. Collaboration and cooperation are necessary for creating solutions.

In the audience discussion, various challenges and opportunities related to technology and digitization were discussed. Patience is needed to bridge the gap in India's technology adoption, and challenges like power outages must be considered. The challenge of identifying individuals and integrating them into the system needs to be addressed. Technology can both take and give back, and challenges can lead to progress. The overall goal is to improve global health through digitization.

In conclusion, the experts agreed that creating a robust and interoperable national health information system requires careful planning, adequate funding, effective governance, and collaboration between stakeholders. The challenges and opportunities of technology and digitization must be considered, and patient-centered approaches should be prioritized. By meeting these criteria, national health information systems can help countries respond more efficiently and effectively to public health emergencies and improve healthcare services overall.

Creating a robust national health information system requires planning, funding, governance, and stakeholder collaboration. Considering technology, digitization, and patient-centered approaches is crucial. Such systems improve emergency response and healthcare services.

Key Findings

A robust and interoperable national health information system is crucial for the efficient functioning of health systems during normal times and during public health emergencies. Digital technologies can provide timely and accurate health information for identifying potential epidemics and analyzing clinical behavior.

The adoption of health systems in India has been low and requires a change in behavior. Identifying strong opportunities for value in generating data is crucial, and incentives should be considered to drive data collection. Improving the accessibility and usability of health systems can relieve the burden on health workers.

The use of a good quality and unique identifier database is essential to support the national health insurance scheme. Standardization and interoperability are necessary for the success of a national health insurance system.

Electronic health record systems adoption can be accelerated by the government by investing adequate resources into getting physicians and hospitals to adopt them. The United States is an example of this.

The lack of a use case is often a significant barrier to the adoption of technology, as seen in the United States.

Private entities played an important role in shaping India's response to COVID-19, and within this context, digital systems are crucial in delivering services transparently and with accountability.

Lack of knowledge and digital infrastructure during COVID-19 caused delays in test results in India. Health data that can be used for other purposes and a digital pipeline that allows various providers to connect their systems are necessary to address this.

Resources need to be put in place to enable quick learning during future pandemics. Collaborative frameworks can be created to assist countries. Data management can be dealt with once the policies under which countries operate are identified.

The lack of reliable data in many countries hinders the assessment of current digital transformation levels and the formulation of effective digital policies. The COVID-19 pandemic has brought to light the importance of digital technologies and the necessity for coordinated national policies and digital cooperation to build back better. The United Nations has outlined 12 commitments to achieve a more inclusive and sustainable digital future.

Policymakers and regulatory bodies should adopt a flexible and adjustable approach to embrace digital advances and meet the public's needs in a prompt and comprehensive manner. Additionally, intergovernmental dialogues are crucial in building a regional consensus on ICT and digital development agendas.

Capacity building and action plans can enhance regional cooperation and create synergistic effects to bridge digital divides and accelerate digital transformation in Asia and the Pacific.

Digital inclusivity is vital in ensuring that digital transformation benefits are accessible to all individuals and communities, regardless of socioeconomic background, geographic location, or other factors. To ensure digital inclusivity, proactive and comprehensive whole-of-government digital policy responses must be developed through collaborative discussions and consultations among various stakeholders.

In summary, the key findings suggest that a robust and interoperable national health information system is crucial for effective healthcare policy and emergency management. There is a need to improve the adoption and accessibility of health systems, use unique identifier databases, standardize, and ensure interoperability of systems, invest in electronic health record systems, and ensure effective governance to manage disasters. Furthermore, there is a need to learn quickly during future pandemics, put resources in place to enable quick learning and create collaborative frameworks to assist countries.

KEY TAKE-WAYS:

National Health Information System:

- The creation of a robust and interoperable national health information system demands meticulous planning, sufficient funding, efficient governance, and collaboration among stakeholders.
- Enhancing the adoption and accessibility of health systems, establishing unique identifier databases, standardizing and ensuring the interoperability of systems, investing in electronic health record (EHR) systems, and effective governance to manage disasters are essential.
- Quick learning during future pandemics is necessary, and resources must be put in place to enable prompt learning while creating collaborative frameworks to assist countries.

Digital Transformation:

- Policymakers and regulatory bodies must adopt a flexible and adaptable approach to embrace digital advancements, ensuring that the needs of the public are met promptly and comprehensively.
- Intergovernmental dialogues are crucial to establishing a regional consensus on ICT and digital development agendas.
- Capacity building and action plans can promote regional cooperation, creating synergistic effects that bridge digital divides and accelerate digital transformation in Asia and the Pacific.
- Digital inclusivity is fundamental in ensuring accessibility to all individuals and communities, irrespective of their socioeconomic background, geographic location, or any other factors.

Recommendations

- Establish a formal partnership between the Global Learning Center for Digital Health and the Asia eHealth Information Network (AeHIN) to jointly develop initiatives promoting the use of digital health technologies in the Asia-Pacific region. Collaboration on research, policy advocacy efforts, and sharing of expertise and resources will enhance the impact of the partnership. The goal is to leverage technological advancements to improve patient outcomes, promote cost-effectiveness, and bridge the digital divide.

- Policymakers and regulatory bodies should adopt a flexible and adaptable approach to embrace digital advancements and meet the public's needs in a prompt and comprehensive manner.

- A deep understanding of the evolving digital landscape is required to adapt to new technologies and innovations.

- Regular consultation with stakeholders and experts in the field will ensure that policies and regulations are up-to-date and relevant.

- Intergovernmental dialogues are crucial in building a shared vision for digital transformation and identifying areas where collaboration can be effective.

- Capacity building and action plans can enhance regional cooperation and create synergistic effects to bridge digital divides and accelerate digital transformation. The focus should be on creating a consensus on ICT and digital development agendas in the Asia-Pacific region.

- Digital inclusivity should be emphasized in policymaking and regulatory frameworks. Policies should be designed to ensure that the benefits of digital transformation are accessible to all individuals and communities, irrespective of their socioeconomic background, geographic location, or any other factors. By prioritizing digital inclusivity, we can ensure that the benefits of digital transformation are distributed fairly and equitably and that no individual or community is left behind in the digital age.

- Developing a cadre of health informatics professionals is essential for leveraging technology and data to improve patient outcomes and deliver more efficient and effective care. This requires identifying educational and training programs that can provide students with the necessary skills to work in the health informatics field. The curriculum should include knowledge of healthcare systems, technology, data management, and healthcare policy. Additionally, healthcare organizations should provide ongoing training opportunities to ensure that their staff is equipped with the latest skills and knowledge.

- Conducting research and analysis on digital health implementation in different settings is crucial to gain a comprehensive understanding of the challenges and opportunities associated with digital health. The insights gained from this research can be used to identify best practices and areas for improvement.

- Identifying prospective sponsors for digital health meetings and initiatives is crucial to ensure the sustainability of these efforts. Prospective sponsors could include government agencies, private sector companies, and non-profit organizations. Additionally, partnerships with sponsors can help to expand the reach and impact of digital health initiatives by providing access to new networks and resources.

- Fostering collaboration among stakeholders is essential for the success of digital health initiatives. This includes collaboration among healthcare providers, policymakers, regulatory bodies, technology companies, and patient advocacy groups. Collaboration can help to build trust among stakeholders, promote knowledge sharing, and accelerate the adoption and implementation of digital health technologies.

Conclusion

The discussion also highlighted the importance of collaboration and cooperation between different stakeholders, including policymakers, healthcare providers, technology companies, and patient advocacy groups. By working together, these stakeholders can create a more effective and efficient healthcare system that leverages the power of technology to improve outcomes for patients.

Overall, the panel discussion served as a call to action for all stakeholders to embrace innovation and technology in healthcare and work together towards a common goal of improving healthcare outcomes and building a more resilient healthcare system that can withstand future challenges.

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The GLC4HSR's ANNUAL CONCLAVE 2023

Proceedings of the Annual Conclave 2023:

LEARNING SESSION 8

Ensuring the supply of health goods and technologies for systemic resilience

Learning Session 8:

Ensuring the supply of health goods and technologies for building resilient health systems

Moderator:	**Mr. Maulik Chokshi** Deputy Country Director (Technical), ACCESS Health International
Panelists:	**Mr. Harish Iyer** (Remote) Deputy Director, Digital & Health Innovation, Bill & Melinda Gates Foundation **Dr. Ronald T. Piervincenzi** (Remote) CEO, United States Pharmacopeia **Ms. Deepanwita Chattopadhyay** Chairperson & CEO, IKP Knowledge Park **Ms. Nitika Garg** Director, Research, Organization of Pharmaceutical Producers of India **Mr. Neeraj Jain** Country Director India and Director South Asia, PATH **Prof. Paul Lalvani** (Remote) Founder and Director, Empower School of Health
Theme coordinator:	**Dr. Apurva Kashyap** Program Support Manager - ACCESS Health International

Executive Summary

During the COVID-19 pandemic, a significant proportion of global health expenditure was spent on commodities and human resources. However, the market was already facing challenges in access to commodities due to market access, pricing, and supply chain issues, which were further exacerbated during the pandemic. Furthermore, diagnostics and vaccines were based on innovations, which created a significant gap in access to these products between high-income countries (HICs) and low- and middle-income countries (LMICs). To build a resilient health system, enabling equitable access to these innovations is crucial.

The question then changes to, how can we foster an ecosystem that enhances the availability of affordable, innovative molecules in the health system? Global health institutions have a significant role to play in getting innovative products to LMICs during emergencies and in peacetime. For example, the Bill and Melinda Gates Foundation has a history of providing access to medicines created by scientific advancements in HICs. One example is the distribution of the rotavirus vaccine, which was available and affordable in developed countries but not in poorer countries. The Foundation played an active role in catalyzing technology transfer and funding, creating national policies for R&D and manufacturing capacities, and encouraging the localization of technology in LMICs.

However, many challenges persist and need to be addressed. These include regulatory harmonization, building basic science capabilities, and incentivizing research and development for diseases relevant to the South, such as neglected tropical diseases (NTDs). Collaboration between the Global North and South is critical in improving capacity and ensuring equitable research fields. In terms of regulatory systems, building capacity and harmonizing them can lead to faster approvals during pandemics.

Quality control is also essential, and having good standards in place can speed up production and reduce costs in the long run. Programs like the USP's Promoting the Quality of Medicines Plus (PQM+) can help improve the quality and expand the supply of essential medical products in LMICs by strengthening drug regulatory authorities and local pharmaceutical manufacturers sustainably.

In times of economic distress, having a strong supply chain is crucial to ensuring access to these innovative products. Global and GAVI, the Vaccine Alliance funds have been instrumental in strengthening the supply chain, but the dynamic nature of policy, products, and people means that there are ongoing challenges. Health workers play a crucial role in handling products before they are distributed to people, and ensuring their training and support is essential for building a resilient supply chain.

In conclusion, fostering an ecosystem that enhances the availability of affordable, innovative molecules in the health system requires collaboration between the Global North and South, building basic science capabilities, harmonizing regulatory systems, and ensuring a strong supply chain. Global health institutions have a crucial role to play in catalyzing technology transfer, providing funding, creating national policies, and encouraging the localization of technology in LMICs. By working together, we can build a more resilient health system that ensures access to innovative products for all.

Session Introduction

Session moderator **Mr. Maulik Chokshi, Deputy Country Director (Technical), ACCESS Health International**, and panelist **Mr. Harish Iyer, Deputy Director, Digital & Health Innovation, Bill & Melinda Gates Foundation,** discussed the role of global health institutions in fostering innovation and improving access to affordable and innovative products in low- and middle-income countries (LMICs), especially in times of emergency like the COVID-19 pandemic. Mr. Iyer is a strategic partner for critical research and development work in the public and private sectors, with a focus on vaccines and neglected diseases. The discussion highlighted the importance of funding, policies, and technology transfer to drive healthcare innovation in LMICs, and the need for regulatory harmonization and equitable collaboration between the Global North and South. Mr. Iyer also emphasized the need to strengthen basic science capabilities and regional networks to improve disease surveillance and control. Overall, the conversation centered around the intersection of public and private sector efforts to address global health challenges and promote equitable access to life-saving innovations.

Dr. Ronald Piervincenzi is the CEO of the United States Pharmacopeia (USP), a non-profit private organization working closely with regulatory bodies and industry partners to improve the quality of medicines worldwide. As a part of the panel, he discussed ways to build the capacity of regulatory systems to have faster approvals during a pandemic and the downstream regulation of medicine quality. The conversation discussed the importance of collaboration, harmonization, and convergence between regulatory bodies and the capacity building of regulatory bodies. It also highlighted the importance of quality as the underpinning of acceptance, which can support access to medicines.

Dr. Piervincenzi emphasized the importance of establishing a quality system and highlighted the role of USP's program, Promoting the Quality of Medicines Plus (PQM+), in sustainably strengthening medicines regulatory authorities and local pharmaceutical manufacturers in over 20 countries. The discussion also touched upon the quality of the product versus the quality of each step of the process determining the quality of the product. Dr. Piervincenzi explained that if good standards are in place, the speed of production goes up and costs go down, aiding the production of quality medicines.

Panelist **Prof. Paul Lalvani is the founder and director of the Empower School of Health** and a prominent figure in the public health industry. He has more than 25 years of experience in capacity building, procurement, supply chain, access to medicines, and technology transfer. The topic of discussion was supply chain resilience in the context of the healthcare industry, specifically in low- and middle-income countries (LMICs). He highlighted the importance of having resilient supply chains in times of economic distress and ways to achieve that.

Prof Lalvani emphasized that resilient supply chains have four components: efficiency, quality assurance, technology solutions, and an independent board of directors. The conversation also touched upon the need for all stakeholders to be involved in the process of supply chain strengthening, including regulatory agencies, the Ministry of Health, central medical store, pharmacy councils, and professional associations. Finally, he discussed the relationship between supply chain maturity and resilience. Post-pandemic times added components to supply chain maturity, making it more resilient.

Panelist **Ms. Deepanwita Chattopadhyay is the Chairperson & CEO, of IKP Knowledge Park,** a public company, classified as a not-for-profit company. Her discussion focused on local manufacturing, local innovations, and the harmonization of efforts from innovation to production level in the context of supply chain resilience. Ms. Chattopadhyay shared her experience and insights as the Chairman of IKP Knowledge Park, a micro cluster, and as Director on the boards of several organizations. She spoke about the importance of collaboration, protocols, and setting responsive regulatory mechanisms to maintain ongoing work seamlessly.

Ms. Chattopadhyay also mentioned the need for evidence-based technology and funds to support innovation. To measure resilient supply chains, she suggested considering the number of people who lost jobs, the number of start-ups that were set up and closed, and the revenues generated. She also shared IKP's learnings, which include the willingness of the government, the need for adequate infrastructure, enabling policies, having an anchor company, and the need to incorporate knowledge from academia.

Panelist **Mr. Neeraj Jain is the Country Director of India and Director of South Asia, PATH,** an international non-profit organization focused on global health innovation. He stressed upon the need to measure the reach of innovative technologies to the public, particularly in the context of resilient supply chains during pandemics. Mr. Jain emphasized the importance of regional collaboration and the need for a global surveillance system to collect data during outbreaks. He also briefly touched upon PATH's past experience leveraging post offices for logistics and the cost efficiencies achieved at scale.

Ms. Nitika Garg, Director, Research, Organization of Pharmaceutical Producers of India, represented the private industry on the panel, bringing with her over 15 years of experience in pharmaceuticals. She leads the research function at OPPI and provides analytical support to advocacy campaigns of the organization.

> *Affordable access to pharmaceutical products in low- and middle-income countries (LMICs) is crucial. Patient assistance programs and tier-based pricing can play a significant role in improving treatment accessibility for patients in these regions.*

She spoke about ensuring affordable access to pharmaceutical products in LMICs. During the conversation, Mr. Chokshi asked Ms. Garg about strategies to make products available at an affordable cost at a patient level in LMICs. Ms. Garg responded by stating that patient assistance programs and tier-based pricing can help make treatment more accessible. She also highlighted the importance of collaborations and infrastructure at the rural level to improve access. Mr. Chokshi then asked Ms. Garg about differential pricing in LMICs and payment capacities. Ms. Garg suggested tier pricing based on income and highlighted the success of Indiabulls in implementing such a system. Finally, when asked about the role of the government, Ms. Garg stressed the need for dialogue and the government's potential to address operational challenges.

Panel Discussion Overview

This session focused on access to commodities i.e. medicines, diagnostics, and vaccines.

During COVID-19, the maximum global health expenditure was on commodities and human resources. The market was already faced with challenges around the access to commodities, such as market access issues, pricing issues, and supply chain issues. COVID-19 exacerbated these challenges. In addition, diagnostics and vaccines were based on innovations. There is a significant disparity in access to innovative products between LMIC versus HIC. A resilient health system today would mean equitable access to those innovations. How can we foster an ecosystem which can enable faster availability of innovative molecules in the health system?

There exists a significant disparity in access to innovative products between low- and middle-income countries (LMICs) and high-income countries (HICs). A resilient health system is one that prioritizes equitable access to these innovations. There is a need to foster an ecosystem that can enable faster availability of innovative molecules across health systems.

Mr. Chokshi directed his first question to Mr Harish Iyer, on the role of global health institutions in getting innovative products to LMICs in times of both emergency and peace. Mr. Iyer spoke about the history of the Bill and Melinda Gates Foundation in providing access to medicines created by the Global North. An example is the speedy distribution of the rotavirus vaccine. The Foundation was also concerned about deaths due to diarrhea in poor countries. This vaccine was available in developed countries but was neither available nor affordable in other parts of the world. Gradually, this gap is closing. There are many factors involved including:

- Active funding to catalyze technology transfer
- National policies – how to set up R&D, manufacturing capacities, incentives
- Policies on the import and use of technology to drive healthcare innovations
- Localization of the technology, especially in LMICs.
- Regulatory harmonization is very important. How quickly after approval is a product made available for use is important.

A lot of this needs upfront discussions with the Global North since their science is a lot more advanced. PCR, antigen-based assays, new drugs, and anti-virals, all emerged from the Global North. A discussion on how the Global South can catch up is important.

BMGF strives to make technology, science, and low-cost innovations readily available. Medicines Patent Pool (MPP) can ensure that technologies are transferred quickly, local capacity is built, and uptake is faster.

Mr. Chokshi's follow-up question was on the role of an organization in building a global architecture to foster innovation, once the product is available.

Mr. Iyer said that diseases that are prevalent in the South, e.g. neglected tropical diseases – need incentives, an R&D framework, a funding framework, and capacity building. For infection control, having the right animal model and understanding details at a molecular level are important. There is a need to have an equitable field of research where the Global North and South collaborate and improve capacity.

> *Prevalent diseases in the South, like neglected tropical diseases, require incentives, funding, R&D, and capacity building. In infection control, proper animal models and molecular-level understanding are vital. Collaboration between the Global North and South is crucial for equitable research and capacity enhancement.*

Another example is the One Health Program. The role of BMGF would be to check the surveillance systems, would check for zoonotic diseases and the effect it has on human lives.

The same is the case for the NIPA virus outbreak in Bangladesh, where there is a need to look at animal-human contact and how diseases spread. Basic science capabilities need to be strengthened, with support from SEARO and other regional networks.

Re-emphasizing the need to harmonize regulatory systems, Mr. Chokshi asked Dr. Piervincenzi about the specific role of the regulatory system during a pandemic. How to build the capacity of regulatory systems to give faster approvals? Dr. Piervincenzi was requested to share insights from his experience with downstream regulation of the quality of medicines.

Dr. Piervincenzi said that there are three important prerequisites to effective regulatory systems.

- Collaboration: harmonization, convergence
- Capacity building of regulatory bodies
- Importance of quality as the underpinning and how that can support equitable access to medicines

During a crisis, there are often resources available for system development. A specific example of this is individual therapeutics like Remdesivir, where there was an interest and need to develop a high volume at a lower cost. It is not that difficult when focusing on a regulatory center, as transferring the technology would involve manufacturers, capacity building, and transferring the same technology to regulators so they can effectively check the quality and standards. It is not very expensive to produce quality medicines. Once the system is in place, high volume can be produced with low waste. Once the quality is established in the system, the manufacturer can obtain export licenses, which further gives economic incentives to the manufacturers.

> *The production of quality medicines is not excessively expensive. With an established system, manufacturers can produce high volumes with minimal waste. Moreover, once the system attains quality standards, manufacturers can acquire export licenses, which further incentivizes them economically.*

USP has been supporting a program called Promoting the Quality of Medicines Plus (PQM+) for over 30 years, funded by the U.S. Agency for International Development (USAID). PQM+ improves the quality and expands the supply of essential medical products in more than 20 countries by sustainably strengthening medicines regulatory authorities and local pharmaceutical manufacturers.

In response, Mr. Chokshi asked about the producers in LMICs and whether the debate should focus on the quality of the product or on the quality of each step of the process.

Dr. Piervincenzi responded with two aspects to consider:

- The cost to establish a quality system, which may be expensive initially but becomes cost-effective once established.

- The relationship between quality and efficiency, where good standards can increase speed and reduce costs.

Mr. Chokshi directed his next question to Prof. Lalvani. Mr. Chokshi stated that embedding quality as one of the indicators makes it easier for regulators during the approval process, but with regard to access to these innovative products, having a strong supply chain is also important, especially in LMICs. Global and GAVI funds were instrumental in strengthening the supply chains. Therefore, during times of economic distress, it is essential to understand how the supply chain behaves and how to make it more resilient, so that we are able to absorb the shock.

Prof. Lalvani stated that health commodities make up 20-40 percent of national budgets, and the chain goes from global to national to local. PPP (policy, product, and people) are dynamic and change on a regular basis. There are more than 40,000 registered products, and even WHO and UNICEF have different essential medicine lists. Health workers who handle the products before they are distributed to people are in huge numbers. There is a huge gap in the capacity of human resources versus availability versus effectiveness. Resilient supply chains have four components:

- Efficient, cost-effective and self-sustainable
- Availability of quality-assured medicines
- Leveraging advanced technology/digital learning solutions
- Efficient, independent board of directors

The World Bank conducted an analysis of global supply chain efficiency, which included six larger components, with health being one of them. Logistics costs and GDP indicate that an efficient supply chain would be cost-effective with balanced efficiency and resilience. Various donors such as the Global Fund to Fight AIDS, Tuberculosis and Malaria (GFATM) and GAVI, are actively working on supply chain resilience, and have their frameworks and strategies.

Supply chain Maturity: Organizations have developed different assessment tools to assess and evaluate the maturity of the supply chain. Empower School of Public Health also has a framework for supply chain strengthening. There are frameworks available for supply chain strengthening where all shareholders need to be involved, including regulatory agencies, Ministries of Health, the central medical store, pharmacy councils, and professional associations.

Mr. Chokshi asked whether a mature supply chain would be resilient or whether resilience and maturity should be looked at separately.

Prof. Lalvani responded that during the pre-pandemic period, the focus was on efficiency, cost cutting, having fewer suppliers, and lower costs. However, post-pandemic, additional components are required to move the supply chain toward maturity, such as the ability to resist shocks to be more resilient.

Mr. Chokshi directed his next question to Ms. Chattopadhyay. He asked her about the harmonization of efforts from innovation to production levels in the local ecosystem, and how we can measure these things in the context of a resilient supply chain.

> *Pre-pandemic, the focus was on efficiency, cost reduction, and having fewer suppliers in the supply chain. However, post-pandemic, resilience becomes crucial to withstand shocks and to move the supply chain toward maturity.*

Ms. Chattopadhyay responded that IKP is a micro cluster. She added that the pharmaceutical industry should be treated as an emergency service, which needs to be operational and are most critical during an emergency She highlighted that an enabling ecosystem must have ease of doing business, and innovation will follow. The question then is how to maintain ongoing work seamlessly, which can be done by adopting the local ways as per the context, setting protocols, and collaboration. Collaboration is the most important thing. She then listed the four things that IKP adopted:

- Looking at responsive regulatory mechanisms, and ensuring that regulators are in sync
- Department of Biotechnology - Regional Technology Transfer Office, with World Bank Grant – 7 TTOs are established in India
- Evidence for technology- that technology works and it can strengthen the existing response
- Funds – are available for testing and upscaling with multiple players coming together for a common vision.

It is important to see how organizations pivot and leverage collaborations. Incentives for collaborations can be beneficial. To measure resilient supply chains, one can look at the following metrics:

- Number of people who lost jobs
- Number of start-ups that emerged
- Number of start-ups that closed down
- Revenues generated

Further, Ms. Chattopadhyay listed some learnings that IKP can share. These are:

- Willingness of the government: The government plays a crucial role in creating an environment that fosters innovation and supports the growth of new technologies.
- Infrastructure: Infrastructure refers to the physical and digital resources that are necessary to support innovation and the development of new technologies.
- Enabling policies: Policies should promote innovation by reducing barriers and incentivizing investment.
- Anchor company: An anchor company is a prominent organization within an innovation ecosystem that drives innovation by providing leadership, resources, and expertise.
- Academia: Academic institutions are an important part of the innovation ecosystem, as they are often the source of new technologies and discoveries.

Mr. Chokshi then asked Mr. Jain about ways to measure the reach of innovative technologies to the public.

Mr. Jain emphasized the importance of having a resilient supply chain in normal situations and preparing it for future pandemics. He argued that local manufacturing cannot be the only answer since supply chains are always global. He noted that there is a disparity and regionalism in diagnostics, but India fares relatively better on these aspects. There is a need to explore how we can regionalize the supply chain. He further proposed that resilient supply chains for the global market need to be made through regional centers. South–South collaboration is being discussed in the G20 health track.

> *Relying solely on local manufacturing is insufficient for global supply chain resilience. India performs relatively well in addressing regional disparities in diagnostics. Exploring regionalization of the supply chain is necessary, with resilient supply chains established through regional centers.*

Africa aims to have 70 percent of the global vaccine manufacturing by 2070. Mr. Jain emphasized the importance of learning from the private sector, such as Amazon. Further, he suggested the possibility of a vaccine research collaborative from a resilience perspective, with all G20 countries coming together.

Mr. Chokshi asked Mr. Jain if there was any cost differential when PATH tried to use post offices to supply medicine.

Mr. Jain responded that at a huge scale and efficiency, the cost is minimized. PATH was a logistic partner for health and leveraged the post office because they already have the infrastructure in place.

Mr. Chokshi then directed a question to Ms. Nikita Garg, asking about how to ensure that products are available at an affordable cost to patients in LMICs.

In response, Ms. Garg noted that innovation comes with a cost and there are patient assistance programs with tier-based pricing. India has the largest population of glaucoma, but only two million out of 10 million patients get treated even when the cost of treatment is less than INR 10 per month. She emphasized that there is a lack of awareness and proper diagnosis of the disease. Stressing the importance of collaboration, she cited the example of anemia, where the treatment is affordable but every step of access needs to be monitored. To ensure good access, infrastructure is required at the rural level too. She acknowledged the work done by MNCs and suggested that an epidemiological model needs to be considered.

Mr. Chokshi asked for Ms. Garg's thoughts on differential pricing in LMICs and payment capacities and what should be done by MNCs. She responded that tier pricing is available in Patient Access Program, where pricing is based on income. She praised the work done by Indiabulls with proper documentation.

In response to Mr. Chokshi's question on the government's role in this regard, Ms. Garg replied that dialogue is needed and operational challenges must be addressed and that the government can work towards ensuring access to affordable healthcare.

A member of the audience asked about the sustainability aspect of the health system and whether there is any incentive for the climate.Ms. Chattopadhyay responded that investors are interested in the climate aspect, and cross-subsidies are being given to promote sustainability.

Further, Prof Lalvani suggested that India should focus on its ability to develop pharmaceutical products and highlighted the significant work being done by the IKP. He also mentioned the Partnership for African Vaccine Manufacturing (PAVM) initiated by Africa CDC and their goal to develop their own vaccines, which India can support through capacity building.

Ms. Chattopadhyay further suggested that a One Health approach should be discussed more and that NSS and ACCESS Health can work together given the perfect network of the NSS.

While summarizing the discussion, Mr. Chokshi emphasized the need for international collaboration, capacity building, strengthening of supply chains, and scaling up to improve the sustainability of the health system.

Key Findings

Experts on the panel discussed the challenges of providing access to innovative health products in low- and middle-income countries (LMICs) during emergencies such as the COVID-19 pandemic.

Mr. Chokshi and Mr. Iyer agreed that the biggest challenge is access to innovative products in LMICs compared to high-income countries (HICs).

They discussed the role that global health institutions can play in getting innovative products to LMICs, citing the Gates Foundation as an example of an organization that has provided access to medicines created in the Global North. The experts mentioned that regulatory harmonization is crucial for ensuring that products are quickly approved and taken up globally.

Dr. Piervincenzi talked about the importance of quality control and building capacity in regulatory bodies to approve innovative products. He highlighted the need for collaboration, capacity building, and the importance of quality as the underpinning of product acceptance. The experts also discuss the importance of having a strong supply chain, especially in LMICs, to absorb shocks during economic disruptions.

The experts stressed the need for equitable collaboration between the Global North and South to improve research capacity and build local manufacturing capabilities. They mentioned that funding frameworks, incentives, and control of infections are needed to support research and development (R&D) frameworks for diseases that are relevant to LMICs.

In summary, the discussion highlighted the challenges of providing access to innovative health products in LMICs during emergencies and the importance of regulatory harmonization, quality control, collaboration, and building capacity in regulatory bodies to approve and distribute innovative products. The experts stressed the need for equitable collaboration between the Global North and South to improve research capacity and build local manufacturing capabilities, as well as the importance of having a strong supply chain to absorb shocks during economic disruptions.

Recommendations

Based on the key findings from the discussion on building supply chains resilience and the challenges of providing access to innovative health products in LMICs during emergencies, the following recommendations for action or follow-up can be suggested:

- Policymakers and stakeholders should prioritize regulatory minimum standard agreements across countries to ensure that innovative health products can be quickly approved and distributed globally.
- Healthcare professionals and regulatory bodies in LMICs should focus on building their capacity to approve and distribute innovative health products, including quality control measures, and there should be cross-country collaboration to build capacities in geographies that lack them by advanced countries

- Global health institutions, such as the Gates Foundation, can play an important role in providing access to innovative health products for and in LMICs by funding research and development, building local manufacturing capabilities, and supporting collaborations between the Global North and South.
- Funding mechanisms and incentives should be put in place to support R&D for diseases that are relevant to LMICs.
- Strengthening the supply chain is crucial to ensuring that innovative health products can be distributed effectively during emergencies, particularly in LMICs where the supply chain may be more vulnerable to economic disruptions.

Overall, the experts emphasized the need for equitable collaboration and capacity building between the Global North and South to improve access to innovative health products in LMICs during emergencies. By taking these recommendations into account, policymakers, stakeholders, and healthcare professionals can work towards ensuring that all individuals, regardless of their income or location, have access to life-saving health products during times of crisis.

Conclusion

In conclusion, the discussion highlighted the challenges and opportunities in ensuring access to innovative healthcare products in LMICs. The COVID-19 pandemic has further exposed the gaps in the global health system and the urgent need for stronger collaboration, capacity building, and regulatory harmonization. The role of global health institutions, such as the Bill and Melinda Gates Foundation, in catalyzing technology transfer, funding R&D, and building local capacity was emphasized. The importance of quality assurance in the approval and distribution of medicines was also discussed, with examples such as the Promoting the Quality of Medicines Plus (PQM+) program. Strengthening the supply chain was identified as crucial for ensuring resilience in times of economic disruptions. Overall, the panelists emphasized the need for a collaborative and equitable approach to global health, with a focus on improving capacity and access to innovative healthcare products for LMICs.

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- A Proposed Model to Build Capacity for Emergency Use Authorization for Vaccines

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PLAZA STEPS


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PROF K SRINATH REDDY


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ANNEXURES

PROFILES OF SPEAKERS

Dr. Aida Karazhanova

Economic Affairs Officer,
UN Economic and Social Commission for Asia and the Pacific

Aida Karazhanova (Ph.D., Ms.) promotes ICT for Development at the UN Economic and Social Commission for Asia and the Pacific (UN ESCAP), in particular, through (i) facilitation of the implementation of the Asia-Pacific Information Superhighway (AP-IS) action plan 2022-2026, (ii) acting as a focal point of the ICT and Disaster Risk Reduction Division of ESCAP to ESCAP Sustainable Business Network (ESBN) task forces on "Digital Economy" and "Disaster and Climate". She is interested in packaging projects, enabling policies, and digital technologies in linking the digital and green components.

In the past, Dr. Aida has focused on urban water governance and inclusive development through policy advocacy with a special emphasis on decentralized solutions under technical cooperation projects within the Asia-Pacific Water Forum network and supported Asia-Pacific Water Summits. Before joining the UN ESCAP, Dr. Aida facilitated the development of regional and national sustainable development strategies in the region as part of UNDP and UNEP RRC.AP at AIT. She promoted the application of integrated policy frameworks using a systems thinking approach at goal and target levels of SDGs and through rapid assessments of policy impacts. Dr. Aida received her Ph.D. in biochemistry, Headed Chemical Laboratory at the British Gas Chair of Environmental Technology at KAZ State Academy of Architecture and Construction (Almaty).

Dr. Alvin Marcelo

Executive Director of the Asia eHealth Information Network

Alvin B. Marcelo is a general and trauma surgeon by training who is currently the chief medical information officer of the St. Luke's Medical Center and executive director of the Asia eHealth Information Network. Prior to this, he served as senior vice president and chief information officer of the Philippine Health Insurance Corporation (PhilHealth). As the director of the University of the Philippines Manila National Telehealth Center and chief of the Medical Informatics Unit, Dr. Marcelo established the Master of Science in Health Informatics program and conducted local and international research in the field of eHealth and health information systems development.

He took his postdoctoral fellowship in medical informatics at the National Library of Medicine in Bethesda, Maryland with research interests in telepathology, mobile computing, and bibliometric analysis of MEDLINE content. Dr. Marcelo managed the International Open Source Network for ASEAN+3, a center of excellence in free and/or open source software established by UNDP, and advised the Community Health Information Tracking System (or CHITS), a Stockholm Challenge finalist in the health category in 2006. He is the Philippine representative of the Asia Pacific Association for Medical Informatics (APAMI) and the International Medical Informatics Association (IMIA).

Dr. Basant Garg

Additonal CEO, National Health Authority

Dr Basant Garg, IAS, a medical doctor by background, is the current Additional CEO, National Health Authority under the Department of Health & Family. Prior to this role, Dr. Garg was appointed as the Private Secretary to Shri Som Prakash, Union Minister of State, Commerce and Industry and Internal Trade. Prior to this he served in the Government of Punjab for over twelve years.

Mr. Chang Liu

Founder and CEO, ASK Health Asia

Chang Liu, Ph.D., is the CEO and Founder of ASK Health Asia. He oversees the company strategy and direction and ensures overall growth and development. He has authored several publications, including the Singapore overview for the International Profiles of Health Care Systems from 2017, published by The Commonwealth Fund and London School of Economics, and the epilogue to Affordable Excellence, which documents progress toward sustainable high-quality healthcare in Singapore. He is currently working with Dr. William Haseltine on another book about Singapore, A City for All Ages, on how the city-state is managing a rapidly aging population.

In addition to his work with ACCESS Health, Chang Liu is also an adjunct professor at the Chinese University of Hong Kong and Duke Kunshan University. Previously, he was an assistant professor in Health Services and Systems Research at Duke-NUS Graduate Medical School and the Center for Ageing and Education at Duke-NUS. He earned his Ph.D. in Health Services Research from Brown University with a specialization in health economics. He was awarded the eXebs Friedrich J.Schoening International Scholarship and was named an eXebs Fellow. He also received a master's degree in Finance (2009) from the Guanghua School of Management of Peking University, China.

Dr. Christoph Benn

Director, Global Health Diplomacy, Geneva

Christoph Benn MD MPH is currently serving as Director for Global Health Diplomacy at the Joep Lange Institute based in Geneva. He has more than 30 years of experience in global health and has been a co-founder of the Global Fund to fight AIDS, Tuberculosis, and Malaria serving as Director of External Relations of this organization for more than 15 years and managing its replenishment campaigns. Building on that experience, he specialized in innovations in healthcare financing in low- and middle-income countries and advises several global health organizations.His particular focus is the funding and promotion of responsible, inclusive, and equitable digital transformation of health systems in countries in the global south, making sure that the opportunities created by these innovations and technologies are based on appropriate data governance principles and universal human rights promoting digitally enabled Primary Health Care.

He is serving as President of the Transform Health Coalition, Chair of the Board of the InternationalDigital Health and Artificial Intelligence Research Collaboration (I-DAIR), and Co-Chair of the Asia Pacific Leaders Malaria Alliance (APLMA). He has an MD from the University of Giessen/Germany and an MPH from Johns Hopkins University in Baltimore/US.

Ms. Deepali Khanna

Vice President, Asia Region Office, The Rockefeller Foundation

Ms. Deepali Khanna, the Vice President of the Asia Region Office of the Rockefeller Foundation, is responsible for the Foundation's policy, advocacy, grant-making, and partnerships in Asia. She leads The Rockefeller Foundation's initiatives to convene and catalyze strategic collaborations that advance development in Asia, as well as harness Asia's role in enhancing the well-being of humanity in the region and around the world. She served as the Director and managed one of the Foundation's flagship initiatives in India, Smart Power for Rural Development (SPRD), where she provided leadership and direction across the full range of activities, partners, and resources, enabling affordable and clean energy access, to over a million people in India.

Ms. Khanna served as the Director of Youth Learning with The MasterCard Foundation, where she was responsible for the global grant-making strategy across more than 50 projects within the portfolio, managing a budget of USD 800 million. Ms. Khanna has held multiple leadership positions with Plan International, including Country Director for Vietnam and Regional Director for East and Southern Africa, where she led overall strategic planning within the region and managed operations in 12 countries.

Ms. Deepanwita Chattopadhyay

Chairperson & CEO, IKP Knowledge Park

Deepanwita Chattopadhyay developed the first Life Science Research Park in India, in Hyderabad. She pioneered a Hardware Product Incubator and Makerspace, IKP EDEN, in Bangalore and works with Indian and global partners to support over 1400 innovation projects and early startups. She authored the India Chapter for the Global Innovation Index Report GII2020 and received the FICCI FLO Influential Women Award, 2021 for Outstanding Contribution to the Innovation Ecosystem.

In 2018 she was awarded the "Top Women Achievers of the Year 2017 in Asia" by AsiaOne Business Magazine and "Women of the Decade in Life Sciences & Innovation" by the Women Economic Forum. Deepanwita took over as the Chairman of IKP in November 2015. She is a Director on the Boards of IKP Trust, IKP Ventures, Suven Pharmaceuticals Ltd., and the Research & Innovation Circle of Hyderabad (RICH), and the President of IKP EDEN. She is the Founder Chairman of Support Elders Pvt. Ltd. She is a member of several National level committees including the S&T Cluster Apex Committee under the Office of the Principal Scientific Advisor to the Govt. of India, Committee of the Prime Minister's Fellowship for Doctoral Research, DST, GoI, Consultative Committee of S&T and Innovation in NITI Aayog, DBT Committee on Biotech Parks and the Taskforce of Startup20 under G20.

Prof. Dennis Streveler

Professor of Medical Informatics,
University of Hawaii

Dr. Dennis Streveler, Ph.D. is a computer scientist and medical informaticist who has devoted a half-century to improving the world's health systems, by applying digitization and computerization to the processes of healthcare – clinical, financial, and social. As a global expert in Digital Health, his work in India and China in the last five years continues after having consulted in more than 70 countries around the globe. At home in Hawaii, Dennis is a Professor of Medical Informatics at the University of Hawaii (UH). He has also worked in Silicon Valley, including as Chief Strategist for WebMD Corporation perhaps the world's most successful consumer eHealth information website. He holds a master's degree in computer science from UH, and a Ph.D. in Medical Informatics from the University of California at San Francisco medical school.

Ms. Diah Satyani Saminarsih

Founder and CEO, Center for Indonesia's Strategic Development Initiatives

Diah S Saminarsih is an Indonesian development practitioner and public health advocate. She is the Chairperson of the Board of Trustees and CEO of the public health non-profit CISDI. A psychologist by academic training, her professional journey spans management consulting companies, government and national public institutions, and multilateral organizations. Diah worked as a corporate restructuring expert in the energy sector, post which she served for the Government of Indonesia in the President's Office for Millennium Development Goals as Deputy for the President's Special Envoy and Special Advisor to the Minister of Health.

In her public sector role, she served as Indonesia's co-negotiator for the Sustainable Development Goals. She recently concluded her role as the Senior Advisor to the WHO Director-General on Gender and Youth. She holds publications on sustainable development, specifically in Global Health, Macroeconomic Factors in Tobacco Control, Primary Health Care, Nutrition and Food Policy, Meaningful Engagement of Youth in Health Sector Development, and Gender Mainstreaming in Health Policy. She received awards on Social Innovations from the Economist Intelligence Unit. She also received the Global Award from the Open Government Partnership for the improvement of public service in primary health care. Ms. Saminarsih collaborates closely with the Indonesian Academy of Science, the University of Indonesia, and the Padjajaran University for her research portfolio in Foresight for Primary Health Care and Tobacco Control.

Ms. Eloise Todd

Co-founder, Pandemic Action Network, Brussels

Eloise Todd is a co-founder of Pandemic Action Network and an advocacy, policy, campaigns, and strategy specialist with over 20 years of experience. She works towards bringing change in policies, legislation, and budgets to improve lives. Primarily, she has worked in international development and global health, including as a political adviser within the EU institutions and as Global Policy Director of the ONE Campaign.

Eloise campaigned against the UK's Brexit deal, building one of the largest pro-European organizations into a national campaign force. Eloise co-founded Pandemic Action Network with three colleagues in April 2020 and took on the Executive Director role in August 2022. The Network fights to prevent future outbreaks from becoming pandemics and to work for equity in all areas of pandemic prevention, preparedness, and response.

Dr. Fujie Xu

Deputy Director, Health,
Country Office (China) at Bill & Melinda Gates Foundation

Fujie joined the foundation in May 2020, as the Deputy Director of Health, the China Country Office. As an infectious disease physician and an epidemiologist, Fujie heads the health team in developing innovations ranging from basic biomedical science to regulatory science, and in implementing evidence-based service delivery to systematically advance the control of HIV, TB, malaria, and vaccine-preventable diseases.

Fujie has studied and worked in both the United States and China. Most recently she was a professor of infectious disease epidemiology doing research on viral hepatitis. Fujie's career has taken her from the public sector in the United States at the Centers for Disease Control and Prevention to the private sector at Gilead Science Inc., and academics at Zhejiang University in China. She brings more than 20 years of experience in public health research and program, with a focus on infectious diseases. She holds a Ph.D. in epidemiology from Emory University and earned her medical degree from Peking University Health Science Center. Her entry into global health work started in Thailand when she was an Epidemic Intelligence Service (EIS) officer trained to be a ready responder, also known as CDC's disease detective.

Dr. GVS Murthy

Director, Indian Institute of Public Health, Hyderabad

Dr. G.V.S. Murthy is Vice President (South) of the Public Health Foundation of India and Director of the Indian Institute of Public Health, Hyderabad, India. He is also a Professor of Public Health Eye Care & Disability at the London School of Hygiene & Tropical Medicine. He helped establish the first Department of Community Ophthalmology at the Dr. Rajendra Prasad Centre for Ophthalmic Sciences, AIIMS, New Delhi, and later helped set up the South Asia Centre for Disability Inclusive Development, Hyderabad, a Centre of Excellence for Public Health and Disability.

Dr. GVS Murthy completed his MBBS from Guntur Medical College in 1979, MD (Community Medicine) from AIIMS, New Delhi in 1985, and MSc (Community Eye Health) from the Institute of Ophthalmology, University College of London, UK. Dr. GVS Murthy has been ranked among the top 2% of research scientists in the world by a study conducted by Stanford University, USA in 2020 and 2021. He has worked as faculty at AIIMS, New Delhi, and MGIMS, Sevagram. He worked as Medical Officer at WHO, Geneva on the Childhood Blindness Program and as M&E Consultant with UNAIDS South Asia (where he operationalized the first population-based Behavioral Surveillance Survey for HIV/AIDS covering 85,000 people and 8500 high-risk groups across 15 States in India).

Mr. Gautam Chakraborty

Senior Health Finance Specialist,
USAID

Gautam Chakraborty has been the Innovative Health Financing lead at USAID/India since 2016. In the India Mission, he manages healthcare loan portfolio guarantees with banks and financial institutions. He managed USAID's first Development Impact Bond on Maternal Health. He is also advising USAID's SAMRIDH blended finance facility to respond to India's COVID-19 needs.

He obtained his MBA degree in 1995, with a specialization in Finance, and has 26 years of experience in health financing and health systems in India. Before joining USAID, he had been involved in financial planning and budgeting for a major Government of India program, called the National Urban Health Mission. He has also contributed to improving a major pan-India public-private partnership on Emergency Response System (ERS) under the National Health Mission. Currently, in USAID, he is exploring innovative financing options like blended finance and impact bonds, to leverage private capital for primary healthcare in India.

Dr. G.S.P. Ranasinghe

Director, Ministry of Health ,
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Dr Ranasinghe is a public health expert focussing on theareas of public health management, Molecular Medicine and Health System development. Dr Ranansinghe was a practising doctor for 18 years in the areas of General Surgery, Pediatrics, Accident and Emergency Management and Critical Care. Currently he is also an Honorary Research Fellow, at the University of Aberdeen.

Dr. Grace Achungura

Technical Officer (Health Financing for UHC-HCF)
World Health Organization Country Office for India

Dr. Grace Achungura (MBCHB, MPH, Ph.D.) is the Health Financing lead in the WHO Country Office in India where she supports the government's health financing reforms at the Union and State levels. Previously, she served as the Regional Advisor for Health Economics and Financing at the Regional Office of WHO in Africa, and as the Health Economist at the WHO Country Office in Uganda. She has over 12 years of experience in public health and health financing in Australia and in lower and middle-income countries in Africa. Her professional interests include universal health coverage and health system reform, health financing policy, economic evaluation, and priority setting, public health policy, and planning and monitoring, and evaluation. Prior to her career in public health, Grace worked as a medical officer in various public and private settings including Baylor College of Medicine- Children's Foundation Uganda, a Pediatric HIV/AIDS care center.

Dr. Habib Hasan Farooqui

Additional Professor, Public Health Foundation of India

Dr. Habib Hasan Farooqui is an Additional Professor of Health Economics at the Public Health Foundation of India. Previously, he worked as Post-Doctoral Fellow at the London School of Hygiene and Tropical Medicine (2013-14) and a Surveillance Medical Officer at the World Health Organization (2007-08). He obtained his medical degree (Doctor of Medicine) from the Institute of Medical Sciences, Banaras Hindu University (2007), and a Non-Degree Medicine PG from Sydney University (2010).

His research and teaching interest include EBM, the intersection of infectious disease epidemiology and economics, and health economics with a focus on pharmaceutical economics and HTA. He has served as a member and technical expert on several national and international advisory committees including IVIRAC-WHO-HQ, Chatham House, UK, Board of Immunisation Economics, USA, WHO-SEARO, WHO India, WHO Maldives, MOFHW in India and Maldives, and International Health Economics Association. He has also supervised more than 30 master's level students and published more than 50 peer-reviewed articles and serves as a reviewer and editor in top international journals.

Mr. Harish Iyer

Deputy Director, Digital & Health Innovations, Bill & Melinda Gates Foundation

Harish Iyer, Ph.D., is interested in the role of innovation, science, and technology in improving public health and equitable economic development. He is a strategic partner between Indian researchers, global partners, and the Foundation teams in critical Research and Development work including in vaccine-preventable diseases, new approaches to treating neglected diseases, life science partnerships for public health, digital health innovations for all, and reducing the digital divide among others. Prior to his role at the Foundation, Harish was the CEO of Shantha Biotech from 2011 to 2015. He has also worked in various R&D roles in several biotech companies including as Head of R&D at Biocon, and in various technical roles at Biogen-IDEC and Genentech in the US.

Dr. Harsh Mahajan

Founder & Chairman, Mahajan Imaging & Labs

Dr. Harsh Mahajan is an eminent radiologist and a pioneer in the field of MRI in India, having set up one of India's first MRIs in 1991. He is the Founder of Mahajan Imaging & Labs, a chain of diagnostic centers in North India. He is also the Chairman of the Centre For Advanced Research In Imaging, Neurosciences and Genomics and the Department of Nuclear Medicine & PET CT at Sir Ganga Ram Hospital. He has been a Consultant to the International Atomic Energy Agency, Vienna (Austria), Adviser to the Union Public Service Commission, and is currently a member of the board of NABH and the Health & Mental Health Committee of the National Human Rights Commission. He is an advisor on several Government committees and National steering groups including those for making an indigenous MRI, thermo-mammography bra for screening for breast cancer, indigenous transducers for ultrasound machines, and several others.

A graduate of MAMC, New Delhi, and postgraduate from PGI, Chandigarh, he did a fellowship in MRI from MD Anderson Cancer Centre, Houston Texas in 1987-88. He was awarded Padma Shri by the Govt of India in 2002 and was the National President of the Indian Radiological and Imaging Association in 2012, the Indian Society Of Neuroradiology in 2005, President of NATHEALTH (Healthcare Federation Of India) in 2021, Chairman of Diagnostics & Hospitals Committee of PHD Chambers of Commerce in 2022 and is the current Chairman of the Health Services Committee of FICCI (Federation of Indian Chambers of Commerce).

Mr. HSD Srinivas

Project Director, Health Systems, Tata Trusts

HSD Srinivas is a healthcare management professional experienced in hospital and pre-hospital setups in the not-for-profit sector with a focus on PPP engagements. Engaged since 2016 at Tata Trusts as Director of Health Systems, Srinivas has prioritized building replicable and scalable models of healthcare delivery, leveraging existing and emerging technologies to overcome supply-side constraints in the primary and preventive care domain, and working closely with multiple state governments.

Dr. Jeremy Lim

Associate Professor & Director, Leadership Institute for Global Health Transformation, NUS Saw Swee Hock School of Public Health, Singapore

Dr. Lim is the co-founder and CEO of AMiLi, the first dedicated gut microbiome full-service company in Southeast Asia. He is also Director of the Leadership Institute for Global Health Transformation (LIGHT) at the NUS Saw Swee Hock School of Public Health where he works to enhance cooperation, capacity building, and knowledge sharing across the region. Trained in surgery and public health, Dr. Lim attained various postgraduate qualifications including membership in the Royal College of Surgeons (Edinburgh), masters of medicine (NUS), and Master of public health (Johns Hopkins, as a Fulbright scholarship awardee). He was an inaugural fellow of the Asia Society A21 young leaders program in 2006.

Dr. Lim has a special interest in ways that technology can increase health equity and access to care. He advises a number of health technology companies and programs in the region and globally. He also serves on the boards of/advises various charities and social enterprises, including HealthServe, Dover Park Hospice, and SNTC. Dr. Lim has worked in executive roles in both public and private sectors, including time spent as a senior official in the Ministry of Health, Singapore, and was prior to AMiLi, founding partner of global consultancy Oliver Wyman's Asia health and life sciences practice (2013).

Mr. John C. Langenbrunner

Expert Advisor, Social Health Insurance, Indonesia

Dr. John C. "Jack" Langenbrunner is a global health financing expert with over 35 years of experience advising governments on health systems reform, including advising the US government's health reforms. Dr. Langenbrunner's major areas of expertise include health financing, strategic purchasing, and universal health coverage. He has extensive experience working on health financing issues in Europe, the Middle East, Asia, and Africa as a health economist.

He was formerly the Lead Health Economist at The World Bank where he led the design, development, and implementation of health sector loan projects, and was a resident technical health advisor in China and Russia, and subsequently in Indonesia. He previously worked at the U.S. Center for Medicare and Medicaid Services, and with the U.S. Office of Management and Budget. In the mid-1990s Dr. Langenbrunner served on the Clinton Health Care Reform Task Force for the US White House. Dr. Langenbrunner is currently an Expert Advisor on Health Reform to the Kingdom of Bahrain, and an Expert Adviser on Social Health Insurance to the Government of Indonesia. The author of multiple books and articles, he holds master's and doctorate degrees in Public Policy/Economics and Health Policy from the University of Michigan.

Dr. K. Madan Gopal

Senior Consultant (Health), NITI Aayog

Dr. K Madan Gopal is a renowned public health professional with over 30 years of expertise in enhancing health systems. He holds a MBBS and MD and has successfully executed various health projects both in India and abroad. Currently, Dr. Gopal serves as a Senior Consultant for Health at NITI Aayog, the premier policy institute for the Government of India. He is playing a key role in numerous transformative health initiatives, including the response to the COVID-19 pandemic. Dr. Gopal's achievements have earned him national recognition, including the National Award for Excellence in implementation of RSBY and a FOSGI award for his dedication to women's health

Prof K Srinath Reddy,

Honorary Distinguished Professor, Public Health Foundation of India.

Prof.K. Srinath Reddy is the Founder (Past) President of the Public Health Foundation of India, where he is now an Honorary Distinguished Professor. Formerly, he headed the Department of Cardiology at All India Institute of Medical Sciences, New Delhi. Under his leadership, PHFI has established five Indian Institutes of Public Health (IIPHs) to advance multi-disciplinary public health education, research, health technologies, and implementation support for strengthening health systems.

He was appointed as the First Bernard Lown Visiting Professor of Cardiovascular Health at the Harvard School of Public Health in (2009-13) and presently serves as an Adjunct Professor of Epidemiology at Harvard (2014-2023). He holds advisory positions in several national and international bodies. He has over 570 scientific publications and a published book, Make Health in India: Reaching A Billion Plus. He is also an Adjunct Professor at Emory, Sydney Universities, and Perelman School of Medicine at the University of Pennsylvania. He is the first Indian to be elected to the National Academy of Medicine, USA, and was awarded several prestigious international and national doctorates and fellowships. He was President of the World Heart Federation (2013-15). He was awarded the Padma Bhushan by the President of India in 2005. He is also an Advisor to the Governments of Odisha and Andhra Pradesh on Health with the rank of a Cabinet Minister.

Dr. Kevin A. Schulman

Professor of Medicine, Stanford University School of Medicine

Dr. Schulman was appointed as Professor of Medicine, Associate Chair of Business Development and Strategy in the Department of Medicine, Director of Industry Partnerships and Education for the Clinical Excellence Research Center (CERC) at the Stanford University School of Medicine, and, by courtesy, Professor of Operations, Information and Technology at Stanford's Graduate School of Business. He is the Director of Stanford's Master's Degree Program, the Master of Science in Clinical Informatics Management.

Dr. Schulman's research interests include organizational innovation in healthcare, healthcare policy, and health economics. With over 300 original articles, over 100 review articles/commentaries, and over 40 case studies/book chapters, Kevin Schulman has had a broad impact on health policy. His peer-reviewed articles have appeared in the New England Journal of Medicine, JAMA, and Annals of Internal Medicine. He is a member of the editorial/advisory boards of the American Heart Journal, Health Policy, Management and Innovation (*www.HMPI.Org*), and Senior Associate Editor of Health Services Research.

Mr. Kiran Anandampillai

Advisor – Technology, National Health Authority
CEO and Founder, iDrishti

Kiran Anandampillai is Advisor (Technology) with the National Health Authority (NHA). He is a volunteer supporting NHA to create digital public goods under India's two large digital health initiatives - The Ayushman Bharat Digital Mission (ABDM) and Ayushman Bharat-Pradhan Mantri Jan Aarogya Yojana (PM-JAY).

Kiran is a telecom engineer by training and was a founding member of OnMobile, where he helped it become a public company. He has volunteered with UIDAI for the Aadhaar program and with the iSPIRT foundation on the Health Stack. He dedicates his time to driving impact in healthcare. He is the founder and CEO of iDrishti, which delivers high-quality eye care from the district capital to the village level. iDrishti currently manages 12 eye hospitals across Karnataka, India.

Dr. Krishna Reddy Nallamalla

President (Asia),
ACCESS Health International

Dr. Krishna Reddy Nallamalla is a practising senior cardiologist and Regional Director (South Asia) of ACCESS Health International. He is also President of InOrder, a health systems training institute set up as an associate of ACCESS Health. Dr. Reddy co-founded CARE Hospitals in 1997, a chain of tertiary care hospitals located in 6 states across India. He grew the chain across the country as CEO from 2006-13. In his illustrious career, he has founded many enterprises with a mission to evolve models of high-quality healthcare that are affordable and accessible. He co-founded 'Relisys Medical Devices' in 1998 after realizing India's first coronary stent in collaboration with Dr. APJ Abdul Kalam, then chief of DRDO, in order to create an indigenous technology platform for medical devices to make them affordable. Dr. Reddy joined ACCESS Health International as its India Country Director in 2018 to lead its Health Systems Strengthening efforts in the country and assumed the role of Regional Director of South Asia in 2021.

Dr. Lal Panapitiya

Deputy Director General- Medical Service, Ministry of Health, Government of Sri Lanka

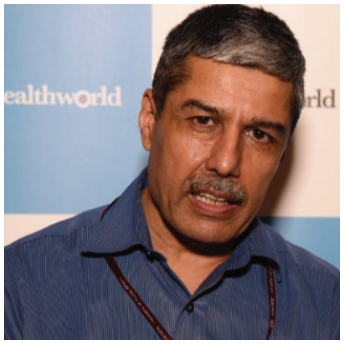
Dr. Lal Panapitiya has over 30 years of experience in various health service fields, with a focus on health management. He has expertise in medicine, medical administration, and health/medicine procurement in Sri Lanka. His extensive knowledge covers the prevention and control of communicable and non-communicable diseases, health education and promotion, health planning and management, project and program management, human resource management, and healthcare management at all levels of care. He has successfully improved hospitals and healthcare institutions, served as Director for Non-Communicable Disease Prevention and Deputy Director General for Supply Chain Management, and played a crucial role in coordinating and managing the curative sector, including the COVID-19 patient care management in Sri Lanka.

Prof. Mala Rao

Director, Ethnicity and Health Unit, Imperial College London

Professor Mala Rao is the Director of the Ethnicity and Health Unit at Imperial College London. She was Director of Public Health in the UK NHS in the 1990s, Head of the Public Health Workforce for England from 2004 to 2008, and Director of the Public Health Foundation of India's first Institute of Public Health under the aegis of the UK Global Health Strategy and UK-India health collaboration during 2008 to 2011. She is the chair of WHO Southeast Asia Region's Expert Group on the Environmental Determinants of Climate Change and Health and has served as Medical Adviser to NHS England's Workforce Race Equality Strategy from 2018 to 2022. Her career has spanned public health practice, policy, research, and training and her most impactful achievements have been in workforce development, strengthening health systems, and environmental health in the UK and overseas.

Her research and advice to governments and global institutions have improved healthcare for millions in some of the poorest states in India and elsewhere. She has been included among the most influential people in India-UK relations. Mala is also a recognized champion of climate action, safe water and sanitation, and gender equity. She guest edited the 2022 issue of the International Review of Psychiatry focusing on the climate crisis and mental health.



Mr. Manoj Jhalani

Director, Health System Development, WHO SEARO

Mr. Manoj Jhalani is the Director, Health Systems Development, WHO, Regional Office for South-East Asia, New Delhi. He has been a member of the Indian Administrative Service. Between March 2012 to November 2019, he served in the Ministry of Health and Family Welfare, Government of India as Joint Secretary (Policy) and later as Mission Director, National Health Mission (NHM) while holding the post of Additional Secretary and Special Secretary to the Government of India.

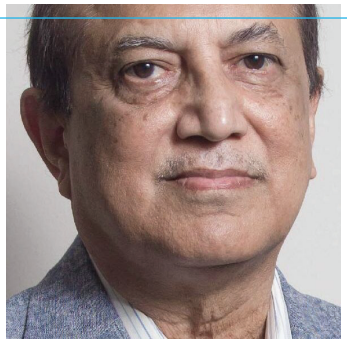
Between 1987 to 2012, he served at sub-district, district and state levels in planning, designing and implementing policies and programmes in the social sectors in the state of Madhya Pradesh, India. He pursued an MBA in Public Service from The University of Birmingham, United Kingdom and B. Tech from the Indian Institute of Technology (IIT), Kanpur. He has several awards and accomplishments to his credit, including the UNIATF award for his contribution towards addressing NCD challenge in India.

Mr. Maulik Chokshi

Deputy Country Director (Technical), ACCESS Health International

Maulik Chokshi is a health professional with around 22 years of experience in research, teaching, and training and leads the health systems work for ACCESS Health International in India and provides technical and programmatic leadership for policy work. He works on health systems policy and systems design with national and state governments, development partners, and academia. He has spent eight highly regarded years with the Public Health Foundation of India. He has worked as an advisor to the global healthcare information company IMS Health and was a consultant to many national and international agencies and development partners. He has worked extensively on policies and capacity-building initiatives related to medicine procurement, pricing, immunization, maternal and child health, and healthcare financing in the Indian setting and sub-Saharan Africa, Mekong, and the Middle East. He has worked with various national and international agencies and has produced more than 50 reports for them. He has also authored/co-authored 45 peer-reviewed publications.

As Deputy Country Director (Technical), Maulik works on building ACCESS Health India as a thought leader with quality research outputs and fostering relationships with global, national, and sub-national researchers and practitioners through initiatives like the Global Learning Collaborative for Health Systems Resilience (GLC4HSR) and the India Health Systems Collaborative (IHSC).



Prof. Mushtaque Chowdhury

Adviser, James P. Grant School of Public Health, BRAC University, Bangladesh

Ahmed Mushtaque Raza Chowdhury is a development worker, researcher, academic, and micro-philanthropist. He has spent around four decades with BRAC, the world's largest NGO. He was its Vice-Chair, Executive Director, and founding director of the Research and Evaluation Division (now merged with the Graduate Institutes of BRAC University) and the founding dean of the James P. Grant School of Public Health.

Prof Chowdhury is also a professor of Population and Family Health at Columbia University in New York. He also worked as the senior adviser and acting managing director at the Rockefeller Foundation and as a fellow at Harvard University. Prof Chowdhury received several awards and accolades including the prestigious "Medical Award of Excellence" bestowed by the Chicago-based Ronald McDonald House Charities in 2017 and has been honored by The Lancet for his contribution to global health in 2013.

He is a founder of the Bangladesh Education Watch and Bangladesh Health Watch, two civil society watchdogs. Prof Chowdhury has published nearly 200 peer-reviewed scientific articles in national and international journals. He holds a Ph.D. from the London School of Hygiene & Tropical Medicine, an MSc from the London School of Economics, and a BA (Hon's) in Statistics from Dhaka University.

Mr. Neeraj Jain

Country Director – PATH India; Director – PATH South Asia

Neeraj leads the South Asia Region at PATH which comprises India, Myanmar, Bangladesh, Nepal, and Sri Lanka. Neeraj has over 30 years of extensive leadership experience in strengthening organizations. His strengths lie in business development, setting up new ventures, organizational development, ecosystem development, and strategic leadership for change management in organizations across Asia and Europe. With his leadership, PATH's South Asia hub has tripled its annual portfolio, quadrupled its headcount, and expanded its presence into four new countries, and 23 Indian states. Neeraj is in charge of managing the strategic direction, programmatic engagement, and financial operations for a matrix of global and in-country programs implemented across PATH's offices. Neeraj's current focus at PATH is to partner with governments and partners for health systems strengthening, especially primary healthcare.

Prior to joining PATH, Neeraj led WaterAid India through a dynamic phase of transition as its Chief Executive. He was also instrumental in the setup of the India Sanitation Coalition as part of the governing committee and headed the engagement with central and state government task forces. Neeraj is a member of CII's Nutrition and Public Health committees where he engages with industry leaders on the need for greater investments in India's public health systems. He is also a member of the Management Committee of the Food Fortification Resource Centre (FSSAI).

Ms. Nitika Garg

Director, Research and Policy Advocacy, Organization of Pharmaceutical Producers of India (OPPI)

With over 15 years of experience, Nitika leads the Research function at the OPPI. As a research director, she is responsible for providing analytical support to advocacy campaigns of the OPPI. Her understanding of the regulatory and commercial ecosystem of the pharmaceutical industry assists in strengthening OPPI's position as a knowledge partner to member companies on pharma policy. Most recently, she was working with Bristol Myers Squibb (BMS) as Associate Director, Market Research. She worked with BMS for six years across multiple therapy areas and projects spanning market research to product launch strategies, business strategy, access strategy as well as commercial excellence.

Prior to BMS, Nitika worked with leading Indian pharmaceutical companies, Glenmark and Biocon, spearheading business development and marketing strategy for a new product and commercialization for them respectively. Nitika holds a bachelor's degree in Biotech with an MBA in International Marketing from Symbiosis Institute of International Business (SIIB).

Prof. Paul Lalvani

Founder and Director, Empower School of Health

Prof. Paul Lalvani is the founder and director of the Empower School of Health, and the Center for Digital Learning (CDL), and the Center for Leadership Development. He has more than 25 years of experience in capacity building, procurement, and supply chain, access to medicines, and technology transfer. The former head of Global Fund's department of Procurement and Supply Chain Management, advisor to Gates Foundation, World Bank, WHO, and various Ministries of Health. His area of expertise includes public health, advocacy, business development, capacity building, strategic planning, policy development, national, and international partnerships.

Ms. Preeti Sudan

Former Health Secretary, Government of India

Ms. Preeti Sudan is a retired Indian bureaucrat who served as the Health Secretary of India from October 2017 to July 2020. She was a key strategist during the COVID-19 pandemic. Ms. Sudan is an IAS (Indian Administrative Services) officer of the 1983 batch from the Andhra Pradesh cadre. Prior to her Health secretary post, she was Secretary of the Department of Food & Public Distribution, Ministry of Consumer Affairs, Food & Public Distribution. She has been a key functionary in the planning and implementation of the Ayushman Bharat Yojana, a large-scale government the scheme aiming to provide free health coverage to 40% of India's vulnerable population.

Since 2020, Sudan has been serving as a member of the Independent Panel for Pandemic Preparedness and Response (IPPR), an independent group examining how the World Health Organization (WHO) and countries handled the COVID-19 pandemic. She also served as Special Secretary of the Ministry of Women & Child Development, and as Joint Secretary in the Ministry of Defence. In her Cadre, she has a distinguished track record of serving in Finance & Planning, Disaster Management, Tourism, and Agriculture. She is an M.Phil. in Economics & Post Graduate in Social Policy and Planning from the London School of Economics. She has also served as a Consultant at the World Bank in Washington.

Ms. Rehana Riyawala

Vice President of Self-Employed Women's Association

Ms. Rehana Riyawala is associated with SEWA since 2001 and is currently its Vice President, since January 2015. SEWA is a trade association based in Ahmedabad, India, that promotes the rights of low-income, independently employed female workers. Ms. Riyawala served as the Secretary of SEWA from January 2012 to December 2014. She takes care of SEWA's operations including activities that strengthen and provide green and sustainable livelihoods, capacity building, microfinance, social security (including water, sanitation, and hygiene), and building resilience among poor and marginalized women from the informal economy, who often suffer from various disasters including climate and economic shocks. Ms. Riyawala is also part of SEWA's in-house management unit and provides various technical support to various projects and units. Ms. Riyawala is a commerce graduate and before joining SEWA she worked for 10 years with a US-based company Centre for International Financial Analysis and Research where she last served as Senior Research Manager.

Dr. Ronald T. Piervincenzi

CEO, United States Pharmacopeia

Ronald T. Piervincenzi, Ph.D., began his tenure as Chief Executive Officer of the United States Pharmacopeia in February 2014. Dr. Piervincenzi provides strategic leadership to USP's global staff of over 1,300 across regions including North America, Latin America, Southeast Asia, Middle East and Africa, Europe, and global public health field offices across nine countries. His transformative vision has launched key USP initiatives in bringing quality across the healthcare spectrum, upholding USP's reputation as a quality leader since its founding in 1820.

Under his leadership, USP has modernized its operations and launched innovative new science, including in the areas of digital medicine, cutting-edge manufacturing technologies, and advanced biologics. Dr. Piervincenzi brings more than 25 years of industry experience across pharmaceutical sciences, research, and business strategy. Before joining USP, Dr. Piervincenzi served as Vice President of Development Sciences with Biogen and was a partner and leader in McKinsey & Company's global pharmaceutical and medical products practice for over 12 years. Dr. Piervincenzi earned his MS and Ph.D. from Duke University in Biomedical Engineering, with research focused on protein engineering. He is the proud co-founder and chairman of the board for MENTOR Newark.

Dr. Samiran Panda

Distinguished Scientist - Indian Council of Medical Research, Former Additional Director General , ICMR & Ex-Head ECD, ICMR

Dr. Samiran Panda is well-known for his research contributions in the field of public health. Currently, he holds the position of Dr. AS Paintal Distinguished Scientist Chair at the Indian Council of Medical Research (ICMR). As former Additional Director General of ICMR, New Delhi, and the Director of the ICMR-National AIDS Research Institute (NARI), Pune, he provided leadership to a wide range of research activities during the COVID-19 and HIV pandemic in India. Many successful outbreak investigations in the country and the identification of evidence-based interventions go to his credit.

Moreover, Dr. Panda worked as a short-term consultant for the World Health Organization (WHO) in the delivery of anti-retroviral therapy for People who Inject Drugs (PWID) and their partners in resource-poor settings. During the last three decades, he assisted the National AIDS Control Organization in India and several development partners in designing and implementing evidence-based interventions for the cause of HIV prevention and care in South Asia. He also served as a lead trainer in Bangladesh, Myanmar, Nepal, North East, east and south India, and China. In recognition of his expertise, the UNESCO headquarters in Paris assigned him the responsibility of evaluating drug prevention programs for marginalized youths in the Caribbean Islands, Cambodia, and India. Dr. Panda has been closely associated with one of the largest and most successful harm reduction projects in a developing country setting – the CARE-funded SHAKTI project in Bangladesh. Further, he has coordinated field studies under research grants from Population Council and the European Commission.

Ms. Sangeeta Singh

CEO, State Agency for Comprehensive Health and Integrated Services (SACHIS), Government of Uttar Pradesh

Ms, Sangeeta Singh is an Indian Administrative Services (IAS) officer from the Uttar Pradesh cadre. She heads the implementation of the Ayushman Bharat Pradhan Mantri Jan Aarogya Yojana in Uttar Pradesh as the CEO of SACHIS. Under her leadership, the health assurance scheme was launched in the state in September 2018 and has seen high levels of adoption across the largest state of the country. She shoulders a huge responsibility for assuring quality healthcare services to close to 80 million people in the state.

Ms. Singh joined the State Administrative Services in the year 1994. She has served in departments like Revenue, Labour, Food and Supplies, Renewable Energy, Health, Stamps and Registration, etc. She was inducted into the Indian Administrative Services in the year 2009 and has been actively serving since then. As Secretary NEDA (Renewable Energy Society in Uttar Pradesh) she oversaw the increase in the uptake of solar and LED lights across the state. Her targeted approach to implementation helped the state receive several awards from the Government of India. Ms. Singh has earlier also served as the Additional Chief Executive Officer for the previous health insurance scheme Rashtriya Swathyama Yone in Uttar Pradesh from 2012-2014. She has also served as a District Magistrate for one of the districts where she implemented state schemes successfully. Ms. Singh is a postgraduate in Political Science from Allahabad University and has excelled in the academic field throughout.

Prof. Shalini Bharat

Director/Vice Chancellor, Tata Institute of Social Sciences, Mumbai

Prof. Bharat has nearly four decades of experience in teaching, research, capacity building, advocacy, and field action in broad areas of social science and health, social development, family studies, and minority community demographics.

She is known for her work on equity and access issues with special reference to reproductive and women's health; social determinants of HIV and TB, including stigma, discrimination, and human rights issues; multi-purpose prevention technologies for the HIV epidemic; self-testing for HIV prevention; young people's health and wellbeing; family studies and child adoption; women, work, and family. With her wide experience in community-based research using qualitative and mixed methodology research approaches, she has contributed to a deeper and more nuanced understanding of the social and gender dimensions of a range of issues concerning health, development, and well-being.

She has also contributed to mainstreaming of gender in HIV and mental health, and social linkages for controlling drug-resistant TB. As a member of several national scientific advisory committees and boards, Prof. Shalini Bharat is actively engaged with a wide range of national-level programs, schemes, policies, and field interventions in health and public health, social development, gender, HIV/AIDS, and TB prevention among others.

Dr. Sohel Saikat

Lead and Technical Specialist, Health System Resilience and Essential Public Health Functions, WHO HQ.

Sohel Saikat is a well-acknowledged expert in health systems resilience employing a public health approach. He has 20 years of experience in health protection, health policy and planning, and health systems strengthening, by fostering an integrated approach to achieve UHC and health security as interdependent goals.

Within WHO HQ, he is responsible for the health systems resilience and essential public health functions (EPHFs) portfolio. He has participated as a health systems expert in multiple Joint External Evaluations (Pakistan, Liberia, Eritrea, Maldives, Saudi Arabia, Thailand); national planning for health security (Tanzania, Eritrea, Pakistan, Ethiopia, Ghana, Kenya, Senegal); Vaccine Delivery Partnership mission to Ethiopia; and UH&PR to Thailand. He served on the Independent Oversight and Advisory Committee mission to Pakistan. He has been WHO HQ's health system lead in support of humanitarian response, restoration, and recovery for countries with a protracted setting. He moved to WHO in 2014 from Public Health England, UK where he served in various capacities including Principal Public Health Scientist and Global Health Strategist. He has managed major multi-year grants and donor policies. He has been currently co-editing a special collection of articles on Health Systems Recovery in the Context of COVID-19 and Protracted Conflict.

Dr. Soonman Kwon (Remote)

Professor and former dean of the School of Public Health, Seoul National University

Soonman has worked for over 30 years on UHC, health finance and systems, and health policy in Korea and LMICs. He is the founding director of the WHO Collaborating Centre for Health System and Financing at SNU and was the Chief of the Health Sector Group in the Asian Development Bank (ADB). In 2021-2022, he was the president of the Korea Health Industry Development Institute (KHIDI), which is an R&D agency under the Ministry of Health and Welfare. He received the Excellence in Education award from Seoul National University in 2020.

He served as president of the Korean Health Economic Association, Korean Society of Health Policy and Management, Korean Association of Schools of Public Health, and Korean Gerontological Society. He is an associate editor (Asia Region Editor) of Health Policy (Elsevier) and the International Journal of Health Economics and Management (Springer). He has been on advisory committees of Health Systems Global (HSG), WHO Alliance for Health Policy and Systems Research, WHO Centre for Health and Development (Kobe), GAVI, etc. He holds a Ph.D. from the Wharton School, University of Pennsylvania (1993), and taught at the University of Southern California School of Public Policy. He has held visiting positions at the Harvard School of Public Health, the London School of Economics, the University of Toronto, the University of Tokyo, Peking University, and the University of Bremen.

Dr. Uma Aysola

Director, Communications, Relations, & Partnerships, ACCESS Health International

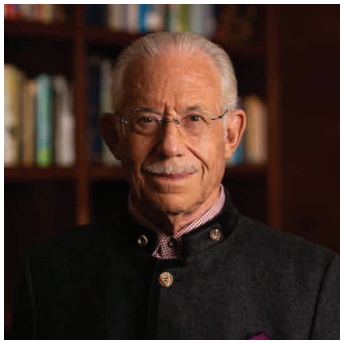
A senior business leader and seasoned health systems management and public health expert, Dr Uma Aysola, PhD, currently heads the Communications, Relations, and Partnerships vertical at ACCESS Health International. She brings over 35 years of varied experience across hospital management, strategic planning for healthcare start-ups, public relations, communications, corporate social responsibility, and health systems strengthening. In her current role at ACCESS Health, Dr Aysola oversees the strategic external and internal communications of the organization and is responsible for partnerships and relationship management with key government functionaries, foundations, technical institutions, industry bodies and the corporate sector. Dr Aysola is also currently serving as the Chairwoman of the Confederation of Indian Industries (CII)-Indian Women Network (IWN) Telangana for the year 2022-23.

Dr. Vijay Yeldandi

Head, Infectious Diseases and Public Health, SHARE India

Dr. Vijay V. Yeldandi, M.D., FACP, FCCP, FIDSA focuses on disorders of the immune system and inflammatory disorders. For over three decades, he has been managing patients with autoimmune disorders, who have undergone transplantation, as well as patients with HIV and infections related to travel. He has a rich experience in the appropriate use of state-of-the-art technology that can empower people to take control of their own health.

A clinician and educator, he is board certified in Infectious Diseases (ABIM). He is a Clinical Professor of Medicine and Surgery at the University of Illinois at Chicago. He is also Faculty at the Public Health Foundation of India. He is the Director of the Inflammatory Disorders clinic at Continental Hospitals in Hyderabad and is the chief of Infectious Diseases. He has received numerous awards in the USA for teaching, public health work, and leadership in healthcare. His work in India has been funded by the United States Centers for Disease Control and Prevention (2005-2025). He is a member of the Community of Practice for "Implementing Public Policy" at Harvard Kennedy School of Government.



Dr. William A. Haseltine

Chair and President, ACCESS Health International

Dr. William Haseltine, PhD, is a scientist, businessman, author, and philanthropist. He is the chair and president of the think tank and advisory group ACCESS Health International, a former Harvard Medical School and School of Public Health professor, and founder of the university's cancer and HIV/AIDS research departments. He is well known for his pioneering work on cancer, HIV/AIDS, and genomics and is also the founder of more than a dozen biotechnology companies, including Human Genome Sciences.

He has authored more than 200 manuscripts in peer-reviewed journals and more than a dozen books on health systems reform and infectious diseases. Dr. Haseltine has also been published widely as an authority on pandemics in CNN, Washington Post, Forbes, Inside Precision Medicine, and Scientific American.

His recent books include: A Family Guide to Covid, The Covid Commentaries: A Chronicle of a Plague, My Lifelong Fight Against Disease: From Polio and AIDS to Covid-19, Variants! The Shape-Shifting Challenge of COVID-19, CV-PTSD: What it is and What do about it and Natural Immunity and Covid-19: What it is and How it Can Save Your Life.

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