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G20 NPHIs CONFERENCE



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FOREWORD

It was both an honor and a privilege to host the inaugural Conference of the G20 National Public Health Institutes (NPHIs), supported by the G20 Health Working Group and led by Brazil's Minister of Health, Nísia Trindade Lima, who is also a former president of FIOCRUZ (Brazil's NPHI). This Conference also marked a significant milestone for IANPHI, returning to Rio de Janeiro, the city where the Association was founded in 2006 through a collaboration between FIOCRUZ, the United States Centers for Disease Control and Prevention (CDC), and the Finnish Institute for Health and Welfare, with 39 NPHIs worldwide as founding members. Today, IANPHI has grown to include 123 members across 103 countries, collectively benefiting more

than six billion people by enhancing public health capacity and capabilities through the connection, development, and strengthening of NPHIs worldwide.

The essential role that NPHIs play, particularly during recent health crises when empowered by their governments, was well demonstrated. The rapid progress in establishing and strengthening NPHIs across all continents has significantly contributed to global health security. Given the increasing pressures on human and planetary health and the 'polycrises' we face—including social, economic, environmental, and political challenges—the importance of this year's Conference cannot be overstated. Hosting this Conference

within the G20 framework – a powerful plurilateral mechanism dedicated to delivering sustainable global solutions – has further reinforced its relevance and importance.

This context not only provided an ideal platform for the Conference but also underscored our responsibility to commit to concrete actions to advance global public health. NPHIs play a pivotal role in implementing public policies and translating G20 recommendations into national initiatives, thereby strengthening resilient, equitable, and robust health systems that foster the comprehensive and healthy development of populations. This will be clearly demonstrated throughout the attached report.

Through this Conference, we have launched a virtuous movement of collaboration, alignment, and solidarity among NPHIs, with a shared vision of making tangible commitments to public health. These efforts are aligned with the recommendations and initiatives proposed by the G20 Health Working Group. Both this report and the Declaration of the Conference serve as essential tools to support G20 Health Ministries in addressing today's pressing health challenges. We encourage you to take time to review their contents. Thank you for your continued support and commitment to global public health.



Credits: Peter Illiciav, CCS/Fiocruz

G20 NPHIs Conference's hosts: Dr. Raji Tajudeen, Ag. Deputy Director General Africa CDC., Professor Duncan Selbie, IANPHI's President, Professor Paulo Buss, The Global Health Center Director and Emeritus professor of FIOCRUZ.

EXECUTIVE SUMMARY

The G20 National Public Health Institutes (NPHIs) Conference took place on September 9–11, 2024, in Rio de Janeiro, Brazil, and was co-hosted by the Oswaldo Cruz Foundation (FIOCRUZ), the International Association of National Public Health Institutes (IANPHI), and the Africa Centres for Disease Control and Prevention (Africa CDC), with support from the G20 Health Working Group (HWG). This first-of-its-kind event brought together global health leaders and NPHIs from across the G20 member states to align their efforts with the key health priorities identified by the G20, particularly in the areas of pandemic prevention, preparedness and response (PPPR), health equity, climate change, and the resilience of health systems.

The opening session featured remarks from several prominent health leaders, including Dr. Tedros Adhanom Ghebreyesus, Director-General of the World Health Organization (WHO), and Dr. Nísia Trindade Lima, Minister of Health of Brazil. Dr. Tedros emphasized the urgent need for global collaboration in strengthening public health systems. He called for concerted efforts to bolster preparedness and response mechanisms for health emergencies, ensuring that health security is prioritized across the globe. Minister Nísia Trindade reaffirmed Brazil's commitment to global health equity and resilience, stressing the importance of investing in health infrastructure, particularly in low-income countries, as a means of preventing health emergencies. Her remarks underscored the need for concrete action to address health inequities and to mitigate climate-related health impacts. The minister also assured that the Conference's outcomes will be welcomed and considered by the G20 HWG, setting the tone for a productive and forward-looking conference.

Before the start of the panel discussions, the introductory lecture presented insights from Ambassador Alexandre Ghisleni, coordinator of the G20 Health Working Group (HWG) and head

of the Special Advisory for International Affairs of the Brazilian Ministry of Health. He posed a critical question: How can we make the G20 health work meaningful? To answer this question, Ambassador Ghisleni emphasized that health challenges are long-term and require sustained global collaboration. He highlighted that the G20, as the second most influential platform in global health after the World Health Assembly, plays a crucial role in shaping health agendas.

According to him, one of the key gaps identified in the HWG's current efforts is the lack of a comprehensive follow-up mechanism to ensure the implementation of its recommendations. Ambassador Ghisleni stressed that NPHIs can play a vital role in bridging this gap by fostering international cooperation, implementing follow-up mechanisms, and ensuring that G20 health initiatives are translated into meaningful actions at the national and global levels.

The first panel, focused on pandemic prevention, preparedness and response (PPPR), was divided into two key sections: supranational perspectives and national perspectives. The session included participation from key institutions such as the European Centre for Disease Prevention and Control (ECDC), the Africa CDC, the Pan American Health Organization (PAHO), and representatives from WHO's Health Emergencies Programme and the World Bank's Pandemic Fund. The supranational panelists emphasized the importance of reinforcing global health networks to enhance the capabilities of countries in preventing and responding to public health emergencies, citing examples such as the challenges posed by Mpox and cholera outbreaks as stark reminders of ongoing vulnerabilities. The discussions underscored the critical role of NPHIs in building resilient national health systems, particularly through cross-border collaboration and knowledge sharing.

National perspectives, shared by countries including Brazil, Singapore, the United Kingdom, Rwanda, the United States, Germany, and China, showcased both the progress made and the challenges still faced in preparing for health emergencies. Countries shared valuable lessons learned from the COVID-19 pandemic, particularly the importance of early detection, robust surveillance, and timely response. A recurring theme was the need for stronger legal and regulatory frameworks to empower NPHIs in their roles, ensuring they have the necessary authority, resources, and workforce to respond effectively to future health threats. Key outcomes from this panel included commitments to enhance disease surveillance systems, expand local vaccine production capabilities supported by robust supply chains, and establish frameworks for international cooperation—especially to ensure equitable access to medical countermeasures and address workforce shortages, skills gaps, and competencies in the public health sector.

The second panel, chaired by IANPHI's Climate and Health Committee, focused on the intersection of Climate Change and Health, recognizing climate change as one of the most pressing global health challenges of the 21st century. Panelists from IANPHI, OECD, CARPHA, FIOCRUZ, NIH Italy and Africa CDC discussed the wide-ranging health impacts of climate change, such as the rising incidence of vector-borne diseases, food and water insecurity, and the health consequences of extreme weather events. The panel highlighted that vulnerable populations, particularly those in low- and middle-income countries, face disproportionate health risks due to climate change, stressing the urgent need to integrate public health into climate adaptation and mitigation policies.

A central focus of the discussions was the implementation of the IANPHI Roadmap for Action on Health and Climate Change, which serves

as a strategic framework for NPHIs to address the health impacts of climate change while promoting equity. Key commitments included strengthening public health surveillance systems to monitor climate-related health risks, such as heatwaves and the spread of diseases like malaria and dengue, and fostering collaboration between countries and regions to share best practices and resources. Additionally, the panel stressed the importance of developing “early warning” systems based on agreed indicators and creating climate-resilient health infrastructures to ensure that health systems are prepared to respond to the increasing frequency and intensity of climate-related health emergencies. The session concluded with a call for NPHIs to take leadership in driving intersectoral collaboration between health, environment, and urban planning sectors to protect public health in the context of climate change.

The third panel, titled “Equity and Health,” centered on addressing the persistent inequities in health outcomes that continue to affect vulnerable populations around the world. Panelists from global health organizations and leading NPHIs emphasized that the COVID19 pandemic exposed deep-rooted disparities in health systems, particularly among marginalized groups. The panel discussions explored the social determinants of health, such as poverty, education, and access to healthcare services, and the role of NPHIs in closing these gaps by advancing policies that promote universal access to healthcare.

A key outcome of this panel was the recognition that NPHIs are uniquely positioned to drive equity in health through their scientific and technical expertise, as well as their capacity to influence national health policies. Commitments were made to ensure equitable access to vaccines, medicines, and healthcare services, with a particular focus on promoting regional and local production of essential health supplies. The panel also

emphasized the need to prioritize investments in primary healthcare and community-based health services, as these are crucial for reaching underserved populations and ensuring that healthcare systems are responsive to the needs of all citizens. Furthermore, the panel advocated for stronger community engagement in health decision-making processes, as well as the importance of partnerships between governments, civil society, and international organizations to tackle health inequities on a global scale.

The final panel, “Resilient Health Systems,” focused on the importance of building health systems that are robust, adaptive, and capable of withstanding future shocks, including pandemics, natural disasters, and other public health emergencies. Panelists, including representatives from the WHO Collaborating Centers and NPHIs from various regions, discussed the lessons learned from recent health crises and outlined strategies for improving the resilience of health systems worldwide. Participants acknowledged the importance of establishing resilient health systems as solid foundations for preparedness, response, and recovery during health emergencies, and during the recovery phase.

Key commitments from this panel included a strong emphasis on investing in primary healthcare as the foundation of resilient health systems. NPHIs committed to advocating for comprehensive primary healthcare models that integrate prevention, health promotion, assistance, health care and disease surveillance, while maintaining focus on other levels of care. Another major outcome was the recognition of the need for sustainable health financing mechanisms that ensure adequate resources are available to maintain and strengthen health systems, especially in low- and middle-income countries. Additionally, panelists highlighted the role of technology and innovation in enhancing health system resilience, calling for greater use of digital health tools, data integration, and health information systems to improve preparedness and response capabilities. The session concluded with a commitment to strengthen public health systems through crosssectoral collaboration and coordinated global efforts.

Based on discussions and commitments agreed upon during the Conference, NPHIs issued a call to action to share the Conference’s outcomes with health ministers. In particular, they advocated for including NPHIs of the G20 countries in health delegations during upcoming Health Working Group(s) meetings and for supporting the inclusion of the G20 NPHI Conference outcomes in the current G20 Ministerial Health Declaration.

DECLARATION OF THE G20 NPHIS CONFERENCE

WE, the International Association of National Public Health Institutes (IANPHI), The Oswaldo Cruz Foundation (Fiocruz), and the Africa Centres for Disease Control and Prevention (Africa CDC) as the co-hosts of the first Conference of the G20 National Public Health Institutes (NPHI’s) in Rio de Janeiro, Brazil, from 9 to 11 September 2024,

RECOGNISE the importance and relevance of the G20 to build a healthier, more equitable and sustainable future, and that NPHIs are uniquely positioned as a government resource and within global networks to strengthen and build resilient public health systems in accordance with the Essential Public Health Functions.

RECOGNISE that a fundamental part of the governments’ basic duty is to reduce health inequities, protect its citizens against health threats and emergencies, such as pandemics, vaccine-preventable diseases, emerging and re-emerging infectious diseases, and to provide and ensure quality, comprehensive universal health care.

AND that National Public Health Institutes report to and support their governments through provision of scientific and technical advice to guide policy and action to protect and improve the health of the populations they serve.

ALSO, National Public Health Institutes, empowered mandates and authorities from their government, engage in cross-sectoral, regional and international collaborations to fortify global health security.

RECOGNISE the priorities of the G20 Health Working Group: Pandemic Prevention, Preparedness, and Response (PPR), focusing on local and regional production of medicines, vaccines, and strategic health supplies; Equity in access to health; Digital Health for the expansion of telehealth, integration, and analysis of data from national health

systems; and Climate Change and Health. NOTING the progress made so far by the nations of the G20 Health Working Group to achieve the SDGs, acknowledging that great challenges remain to accomplish them by 2030.

1) WE COMMIT TO:

i) Supporting governments through the mandates and authorities provided, for disease surveillance, detection and response, workforce development, research and innovation and evidence-based public health action.

ii) Within mandates and authorities, collaborate, lead, and advise on multi-sectoral strategies to prevent non-communicable diseases, support universal health care, and enhance health emergency preparedness and response, with adequate sustained resources.

2) WE CALL UPON the G20 Ministers of Health, the African Union, and the European Union, in collaboration with other stakeholders, to:

i) Strengthen NPHI’s mandates and authorities to lead on collaborative surveillance for an all-hazards approach for prevention and protection of populations from health threats.

ii) Provide the required authorities and resources for NPHIs to prevent and respond to health threats, including accessible and sustainable financial mechanisms.

iii) Support the adoption of the recommendations of the IANPHI Roadmap for Action on Health and Climate Change, as a powerful tool for tackling the impacts of climate change on health.

iv) Ensure equitable access to medical counter-measures through promotion of local and regional production of medicines, vaccines, and strategic health supplies.

v) Recommend subsequent presidencies invite IANPHI to the G20 Health Working Group meeting(s) and for G20 Ministries of Health to include their respective NPHIs as part of their health working group delegation.

Professor Duncan Selbie
President, IANPHI

Dr. Mario Moreira
President Fiocruz

Dr. Raji Tajudeen
Ag. Deputy Director-General Africa CDC

20 September 2024



Dr. Mario Moreira, FIOCRUZ' President

ABREVIATIONS

AFRICA CDC – Africa Centres for Disease Control and Prevention

AMR – Antimicrobial Resistance

IANPHI – International Association of National Public Health Institutes

CARPHA – The Caribbean Public Health Agency

CDCs – Centers for Disease Control

ECDC – European Centre for Disease Control

EU – European Union

EUHTF – European Union Health Task Force

FIOCRUZ – Oswaldo Cruz Foundation

GHEC – WHO Global Health Emergency Corps

HEPR – Health Emergency Preparedness and Response

HWG – G20 Health Working Group

IHR – International Health Regulations

JTFFH – G20 Joint Task Force Finance and Health

NPHIs – National Public Health Institutes

PPR – Prevention, Preparedness and Response

R&D – Research and Development

SDGs – Sustainable Development Goals

UNGA – United Nations General Assembly

WHA – World Health Assembly

WHO – World Health Organization

MESSAGE FROM THE ORGANIZING COMMITTEE

The G20 NPHIs Conference aimed to achieve two main goals: (i) to deliver key messages to G20 Ministers of Health related to the health priorities discussed by the G20 Health Working Group (HWG), based on the roles and responsibilities of National Public Health Institutes (NPHIs); and (ii) to establish key commitments for the implementation of HWG suggestions and for strengthening national health systems through the contributions of NPHIs.

To meet these objectives, G20 NPHIs convened in Rio de Janeiro to discuss the health priorities defined by the G20 HWG during Brazil’s presidency of the G20. Health-related discussions within the G20 are addressed in both G20 tracks: (i) the Sherpa Track and (ii) the Finance Track. Under the Sherpa Track, the global health agenda gained prominence following the establishment of the HWG during Germany’s G20 presidency in 2017, a framework that remains active. Within the Finance Track, the COVID-19 pandemic and its socio-economic impacts led to the creation of the Joint Task Force Finance-Health (JTFFH) during Italy’s G20 presidency in 2020, aimed at addressing financial gaps in pandemic prevention, preparedness, and response (PPR). This development underscores the central role of the health agenda to G20 countries.

The priorities defined by the HWG under the leadership of Brazil’s Minister of Health include:

1. Pandemic Prevention, Preparedness, and Response (PPR), focusing on local and regional production of medicines, vaccines, and strategic health supplies.
2. Equity in access to health.
3. Digital Health for the expansion of telehealth, integration, and analysis of data from national health systems.

4. Climate Change and Health

Considering these priorities, the G20 NPHIs Conference was divided into four main panels to allow NPHIs to delve deeper into discussions and provide timely and appropriate recommendations. Section 2 of this report provides information about each of these panels, presenting an overview of discussions, key points covered, main recommendations to G20 health ministers, key commitments by NPHIs, and cross-relations among the panels.

The Conference discussions are reflected in this Final Report and in the Declaration of the G20 NPHIs Conference, included here to ensure that commitments are actionable and accountable, reinforcing the role of NPHIs in shaping global health policy. The Declaration is a critical document that consolidates the collective commitments made by NPHIs in support of G20 health priorities. It serves as both a policy framework and an advocacy tool, outlining the actions that NPHIs and their respective governments must take to address global health challenges.

Beyond discussions, RECOMMENDATIONS AND COMMITMENTS, the G20 NPHIs Conference also served as a forum for strengthening relationships among NPHI representatives and could become a valuable tool for improving collaboration and cooperation among them. This could result in more coordinated and effective responses to future health emergencies as well as the promotion of health security and healthier populations worldwide.

The organizing committee worked diligently to provide a successful and meaningful Conference and ensured the dissemination of updated and qualified information through this report. All presentations can be found [here](#).



1. PANEL SESSIONS

1.1 - OPENING SESSION

OPENING REMARKS

- **Dr. Nísia Trindade Lima**
Minister of Health of Brazil
- **Professor Duncan Selbie**,
President of IANPHI
- **Dr. Mario Moreira**,
President of FIOCRUZ
- **Dr. Raji Tajudeen**,
Ag. Deputy Director-General of Africa CDC
- **Dr. Tedros Adhanom Ghebreyesus**,
Director-General of WHO (by video)
- **Ambassador Alexandre Ghisleni**,
Head of AISA; G20 Health Coordinator
- **Dr. Paulo Buss**,
Director, WHO Collaborating Center for Global Health and South-South Cooperation

INTRODUCTION AND OVERVIEW

The opening session brought an important message from Dr. Tedros Adhanom, Director-General of the World Health Organization (WHO) as well as a supportive speech from Dr. Nisia Trindade

Lima, Minister of Health of Brazil. This session also included each Conference’s organizer messages.

Dr. Lima’s remarks underscored the need for concrete action to address health inequities and to mitigate climate-related health impacts. The minister also ensured that the Conference’s outcomes will be welcomed and considered by the G20 HWG, setting the tone for a productive and forward-looking Conference.

This session highlighted the critical need for investment in public health, particularly in low-income countries, and emphasized the importance of proactive action before health emergencies arise.

KEY TOPICS COVERED

The Conference addressed a wide range of key topics related to public health, including:

- **Global Collaboration:** Tedros Adhanom Ghebreyesus, Director-General of the World Health Organization (WHO), stressed the need for strong international cooperation in health, advocating for collaboration among organizations such as IANPHI, CDC Africa, and FIOCRUZ to create a healthier

world.

- **Strengthening NPHIs:** Paulo Buss, a prominent figure in global health, recognized the crucial role of NPHIs in the health system, emphasizing the need to strengthen their functions, particularly in surveillance, response, and the development of a robust public health workforce.

- **Addressing Challenges and Finding Solutions:** Raji Tajudeen addressed challenges such as the lack of access to medical countermeasures, local vaccine production, and the emergence of MPOX. Discussions focused on cooperation agreements and plans to overcome these obstacles.

- **Climate Change and Health:** Several speakers, including Nísia Trindade Lima, highlighted the critical role of climate change in global health, emphasizing the need for deeper discussions and action in this area.

- **Societal Participation:** Nísia Trindade Lima also highlighted the importance of increasing societal participation, especially involving NPHIs as academic and research institutions, in finding solutions for global health challenges.

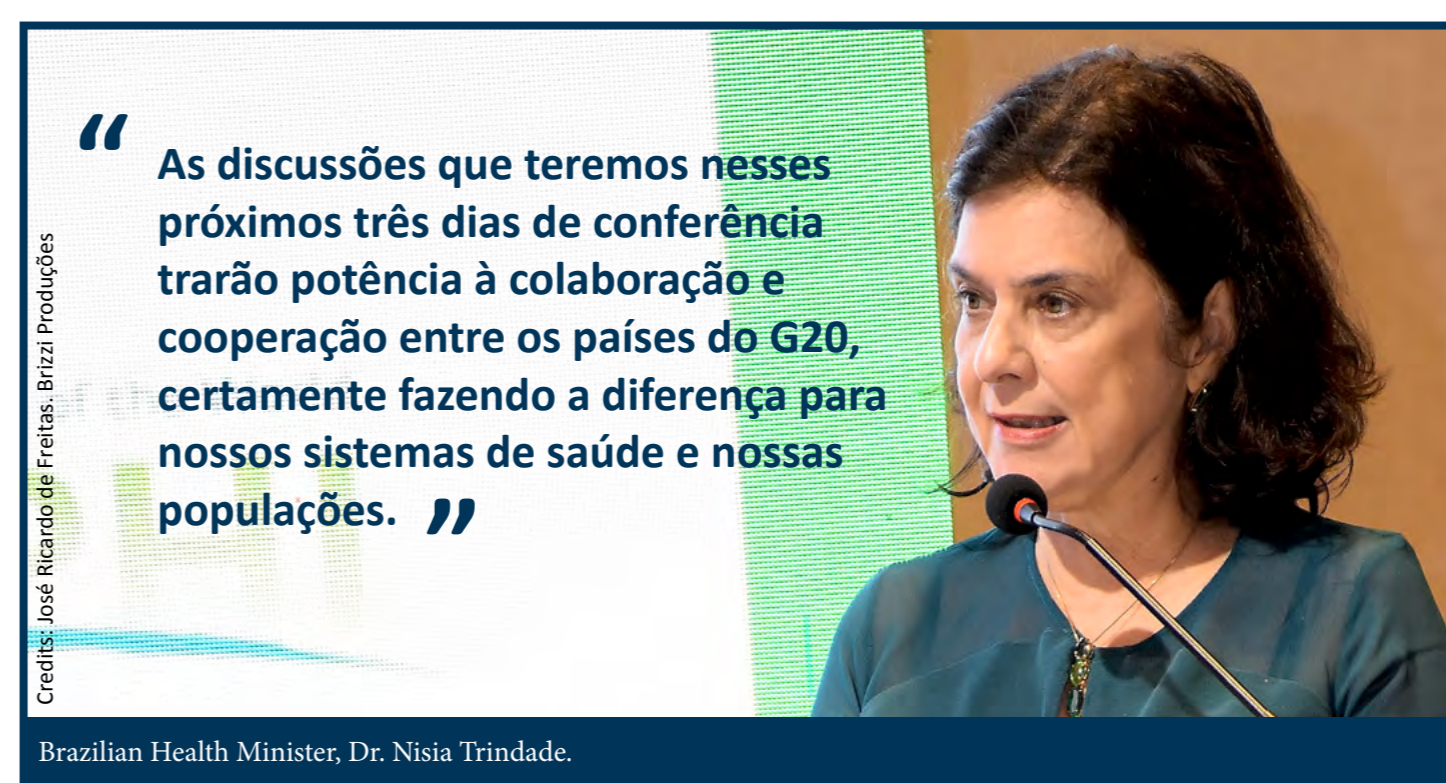
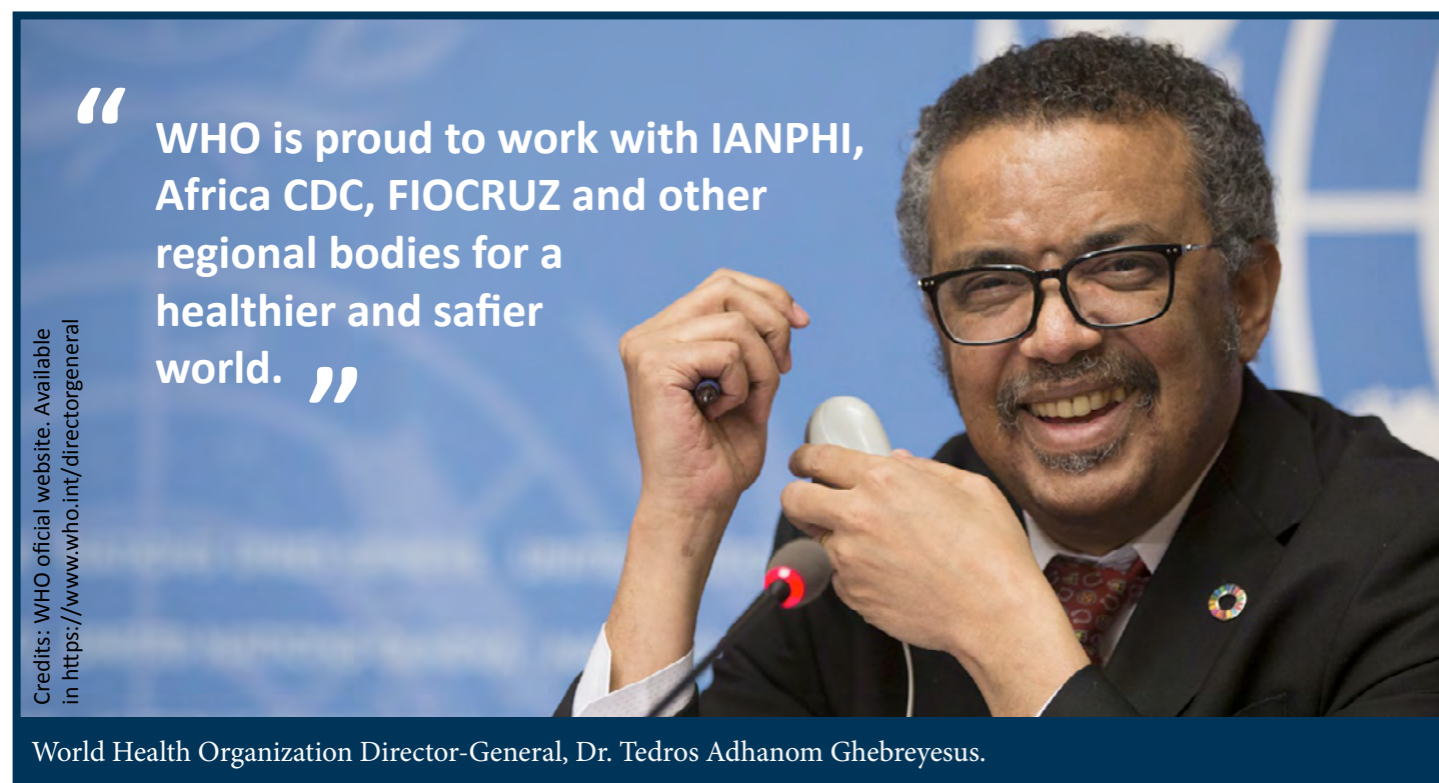
- **Duncan Selbie** emphasized the role of National public health institutes in supporting their governments in achieving the mandates of preventing

diseases and protecting the public from harmful impacts of public health threats. He also reiterated the importance of the health and non-health systems in working together to achieve an all-hazards approach to tackling the challenges we face today in public health.

CONCLUSIONS

The G20 NPHIs Conference underscored the vital role of NPHIs in the global health system, the need for strategic investments in public health, and the pursuit of solutions to contemporary challenges like climate change and health inequities. The session highlighted the necessity of international cooperation and joint efforts to tackle global health challenges effectively.

The common thread throughout the various speeches emphasized the importance of investment in preparedness and response to public health emergencies, not as a cost, but as a strategic investment. This underscores the shared commitment of the participants to building a stronger, more resilient global health system.



1.2 - INTRODUCTORY LECTURE

G20 Health: Current state of the Working Group document. Main priorities. Expectations regarding the role of NPHIs

- **Ambassador Alexandre Ghisleni**
Head of AISA; G20 Health Coordinator

INTRODUCTION AND OVERVIEW

This introductory lecture presented by Ambassador Alexandre Ghisleni, coordinator of the HWG and head of the international affairs' special advisory of the Brazilian Ministry of Health, aimed to bring information about the HWG's current discussions, the status of the health ministerial declaration as well as expectations regarding the role of NPHIs in implementing G20 outcomes in health.

Ambassador Ghisleni focused on replying to the following reflection: **How can we make the G20 health work meaningful?** To do that he stated some important matters related to the G20:

- Health has long-term challenges
- G20 can be recognized as the second organization with more convincing power in health matters. It is just behind the World Health Assembly.
- There is a trend that some issues continue in the agenda: funding for health, AMR, PPR, among others.
- The G20 Brazilian presidency adds some Brazilian flavor to these issues, to bring different angles to discussions, such as the focus on equity.
- The main missing point in the HWG is the follow-up mechanism.

The ambassador believes that NPHIs can play an important and strategic role in bringing meaning to G20 achievements, and in moving forward initiatives and projects that are raised in this relevant forum for global health. NPHIs could improve international cooperation among governments, other NPHIs and international organizations, and implement some follow-up mechanism for G20 discussions, recommendations and outcomes.

CONCLUSIONS

NPHIs have an important role which demands more collaboration, with the understanding of G20 procedures, discussions and outcomes. This includes working in solidarity to address common challenges faced in public health. To enable this, countries need to continue to support the establishment and strengthening of NPHIs, together with the United Nations and multilateral agencies, among other partners; and, to promote legal and regulatory authorities for NPHIs and guarantee the required financing and workforce, among other core necessities.

Beyond that, G20 should consider establishing a regular monitoring and evaluation collaborative mechanism to track progress, to identify areas for improvement and to oversee the effective implementation of the commitments made and actions proposed by them.



Ambassador Alexandre Ghisleni, G20 Health Working Group Coordinator

1.3 - PANEL 1: PREPAREDNESS AND RESPONSE TO HEALTH EMERGENCIES

INTRODUCTION AND OVERVIEW

Panel 1 was divided into two parts: (1) supranational perspectives, which brought different perspectives about PPR from ECDC, Africa CDC, Pandemic Fund, PAHO, WHO Health Emergencies Programme and WHO Global Health Emergency Corps; and (2) national perspectives, which included presentations from NPHIs including Interim Centre of Communicable Diseases Singapore, UK Health Security Agency, FIOCRUZ, China CDC, Robert Koch Institute (RKI), Pedro Kouri Institute Cuba, US CDC, Rwanda Biomedical Center (RBC), and The Caribbean Public Health Agency (CARPHA).

The first part focused on the importance of strengthening global networks in preparing for and responding to public health emergencies. Panelists were invited to present the challenges of Health Emergency Preparedness and Response (HEPR) from a supranational perspective. The second part focused on countries' experiences in tackling health emergencies so that they could share gaps, lessons learned, and challenges at the national level to complement discussions in the first part.

During these sessions, NPHIs and other participants raised examples of dealing with emergencies, such as Mpox and health-climate, that underscore the critical importance of prevention, preparedness, response, and building resilient health systems. Collaboration, coordinated actions, solidarity, building trust with society, challenges in retaining the health workforce and financial support for activities were cross issues presented in discussions.

1.3.1 - PANEL 1: PART 1: Supranational perspectives

Chair: Dr. Khaw Fu Meng, Public Health Wales; IANPHI Preparedness and Response Rapporteur: Dr. Tânia Fonseca, FIOCRUZ

Health Emergencies

Ms. Sara Hersey, WHO

Supranational Perspective, Africa CDC

Dr. Raji Tajudeen, Africa CDC

Supranational Perspective, European CDC

Dr. Vicky Lefevre, ECDC

Supranational Perspective, PAHO

Dr. Jarbas Barbosa, WHO PAHO (by video)

Pandemic Fund

Mr. John Paul Clark, The Pandemic Fund, World Bank

Global Health Emergency Corps

Dr. Scott Dowell, WHO GHEC

KEY TOPICS COVERED

The panel focused on the importance of strengthening global networks in preparing for and responding to public health emergencies. Panelists were invited to present the challenges of Health Emergency Preparedness and Response (HEPR) from a supranational perspective. The panel included Ms. Sara Hersey (Berlin Hub/WHO), Dr. Raji Tajudeen (Africa CDC), Dr. Vicky Lefevre (European CDC), Dr. Jarbas Barbosa (PAHO), Dr. Scott Dowell (WHO, GHEC), and Mr. John Paul Clark (Pandemic Fund, World Bank), representing the funding institution.

• **WHO perspectives on Health Emergencies**

Ms. Hersey explained that public health emergencies are becoming increasingly frequent and complex, exposing weaknesses and inequalities in the response capabilities of different countries.

These emergencies can stem from a variety of causes, such as the emergence or reemergence of infectious agents (e.g., Mpox, cholera), ecological degradation and climate change, or geopolitical conflicts leading to displacement, hunger, and shortages of essential goods. All these factors exacerbate inequalities, with vulnerable populations in fragile and conflict settings being at the highest risk.

She highlighted the devastating effects of COVID-19 and other emergencies across different domains, including: Health (8 million deaths), Economy (\$16 trillion in estimated revenue losses in international markets); Education (1.6 billion children out of school); Climate (a 30% reduction in investment in the clean energy transition) and Poverty (135 million more people pushed into poverty in 2030).

Although significant efforts have been made by the global community—such as the Pandemic Agreement and IHR Review, the Pandemic Fund, the “10 Proposals to Build a Safer World Together,” and the G20/G7 Health & Finance Group—there is still much more to be done.

Currently, 114 countries have established or are in the process of establishing National Public Health Agencies (NPHAs). These agencies are key actors in HEPR. Experience has shown that where countries have a single entity with the mandate and authority for overseeing public health emergency preparedness and response, coordination, management, and implementation of these functions are much more efficient. To perform these functions effectively, NPHAs require legal and regulatory authorities, adequate budgets, and a skilled workforce.

• **Supranational Perspective by Africa CDC**

Dr. Tajudeen explained that Africa CDC is a continental autonomous health agency of the African Union, established to support public health initiatives of Member States and strengthen their public health institutions’ capacity to detect, prevent, control, and respond quickly and effectively to disease threats. Established in January 2016 by the 26th Ordinary Assembly of Heads of State and Government and officially launched in January 2017, Africa CDC operates guided by principles of leadership, credibility, ownership, delegated authority, timely information dissemination, and transparency. It serves as a platform for Member States to share and exchange knowledge and lessons from public health interventions.

Africa CDC focuses on strategic areas such as disease control and prevention, emergency preparedness and response, laboratory systems and networks, and National Institutes of Public Health and Research. Acting as a coordinator, it enables the 55 Member States to have a unified voice. During the recent Mpox outbreak, Africa CDC played a coordinating role in developing a continental plan for the region.

He further explained that the main objectives of Africa CDC include strengthening surveillance, expanding the workforce, and promoting local manufacturing. Financing and partnerships are crucial for achieving these goals, as the continent faces recurrent outbreaks of infectious diseases such as cholera and Ebola, alongside a high incidence of tuberculosis, malaria, and HIV.

In the context of Health Emergency Preparedness and Response (HEPR), Dr. Tajudeen highlighted five crucial aspects:

1. Supporting local Research & Development.
2. Financial support.
3. Enhancing preparedness and response.
4. Optimizing resources.
5. Advocating for a pandemic agreement.

He emphasized that working toward equity is essential to ensure access to countermeasures and to promote equitable access.

• **Supranational Perspective by the European Centre for Disease Prevention and Control (ECDC)**

Dr. Lefevre presented an overview of the ECDC’s initiatives to strengthen National Public Health Institutes (NPHIs) in pandemic prevention, preparedness, and response within the EU/EEA.

She emphasized three focus areas: workforce capacity development, digital surveillance, and digital data.

Key programmes include:

- Fellowship Training Programmes in Field Epidemiology and Public Health Microbiology: A two-year in-service advanced-level training programme.
- Emergency Preparedness and Response Training: A five-month program with one week of face-to-face training and 14 weeks of remote online activities to build workforce capacity.
- GenEpi-BioTrain: A cross-border capacity-building support programme in genomic epidemiology and bioinformatics to bolster public health.

She also highlighted the Epidemic Intelligence from Open Sources (EIOS) initiative, a global effort led by WHO to enhance public health decision-making. EIOS uses open-source intelligence to detect and monitor health threats by collecting, processing, and sharing information from various sources. The platform employs artificial intelligence and natural language processing to manage vast amounts of data in real time, facilitating early detection and supporting evidence-based decision-making.

Additionally, Dr. Lefevre discussed a partnership between ECDC and Africa CDC. This collaboration encompasses all aspects of public health preparedness, including workforce development, surveillance, preparedness and response, epidemic intelligence, and deployments. It has been instrumental in responding to outbreaks like Cholera and Mpox.

• **Supranational Perspective by the Pan American Health Organization (PAHO)**

Dr. Barbosa, the current director of PAHO, emphasized the institution’s commitment to preparing for and responding to public health emergencies through innovative and efficient strategies. These strategies aim to recover better than before, address inequalities, and build resilient health systems to enhance responses to emergencies and disasters, ultimately achieving universal health care. He also expressed concern about improving regional capacities to produce medicines and other health technologies.

He highlighted several key points:

- 1. Strengthening Health Systems:** PAHO supports national governments in enhancing the quality and coverage of health services.
- 2. Surveillance and Early Warning Systems:** The organization works to improve these systems, essential for the quick detection and response to disease outbreaks.
- 3. Vaccination Campaigns:** PAHO conducts vaccination campaigns to prevent the spread of infectious diseases, such as influenza and COVID-19.
- 4. Distribution of Medicines and Supplies:** During emergencies, PAHO distributes essential medicines and supplies to support response efforts.
- 5. Healthcare Professional Training:** PAHO provides ongoing training for healthcare professionals, ensuring they are prepared to respond effectively to emergencies.
- 6. Emergency Response Coordination:** PAHO coordinates emergency responses, working with governments and other organizations to ensure a rapid and effective response.

He also pointed out that increasing regional capacities, promoting access to health supplies and medicines, and developing strong health surveillance are critical factors for healthier and more equitable systems.

• **The Pandemic Fund**

Dr. Clark presented key aspects of the Pandemic Fund:

- o **Multilateral Financing Platform:** The Pandemic Fund is the first of its kind, dedicated to investing in critical pandemic prevention, preparedness, and response (PPR) capacities in low- and middle-income countries.
- o **Grounded in IHR (2005):** It embraces and promotes key themes of One Health, community engagement, gender equality, and health equity.
- o **Catalyzing Resources:** The fund enhances PPR financing by mobilizing resources from diverse funders, promoting a coordinated, cohesive, and comprehensive approach to creating a resilient world.
- o **Rapid Mobilization:** The fund quickly mobilized US\$ 2bn in seed funding and immediately began distributing resources to countries. However, the demand for financing far exceeds the currently available resources.
- o **Strategic Priorities:** The Pandemic Fund’s Strategic Plan focuses on surveillance, laboratory capacity, and human resources as key programmatic priorities. It highlights the importance of National Public Health Institutes and equivalent institutions, as well as regional/global networks, organizations, or hubs as critical enablers for the resilience and sustainability of these priorities.

Dr. Clarke emphasized that the mission of the Pandemic Fund is to ensure that in the face of the next health threat, countries have:

- o The surveillance capacity for early detection.
- o Laboratories that can quickly ramp up testing.
- o A health workforce that can be rapidly deployed.
- o Surge capacity that can be called upon to respond. He also pointed out that to maintain this momentum will require: Increased and sustained investment to help fill financing gaps; a two-track approach to resource mobilization, including exploring innovative options to set it on a sustainable financing path and new partnerships to catalyze financing.

• **WHO Global Health Emergency Corps (GHEC)**

Dr. Dowell outlined that the Global Health Emergency Corps (GHEC) is a body of health emergency professionals from all countries, united by common training and standards, who collaborate globally during international health crises to:

- o Strengthen responses to all health emergencies.
- o Stop the next pandemic. Dr.

Dowell highlighted that the International Association of National Public Health Institutes (IANPHI) has been a major partner with WHO in developing the GHEC, providing a platform for collaboration and coordination among countries and health emergency networks. He emphasized that no country can stop a pandemic by acting alone; coordination in emergencies is most efficient with pre-established relationships and trust. While strong models for collaboration exist, they need to be better connected, interoperable, and brought together in a coherent and complementary manner. He suggested two key interventions for the G20 Ministers to consider:

- o Agree to act in solidarity against health emergencies and pandemics by applying the common GHEC framework and engaging National Public Health Agencies (NPHAs).
- o Prioritize equity in the production and distribution of pandemic countermeasures, as well as in sharing information and best practices through the IANPHI and GHEC leaders’ networks.

CONCLUSIONS

In summary, discussions centered on the critical aspects of collaboration, capacity building, surveillance, equity, development and support for local-regional research and production, access to supply chains and medical countermeasures, and resource mobilization to enhance global preparedness for health emergencies.

As Dr. Tedros Adhanom said, “While COVID-19 has taken so much, it has also given us the opportunity to learn the painful lessons it has taught us, and use them to build a healthier,

safer, fairer world for the generations to come. We must seize that opportunity before the world moves on to other priorities.” The COVID-19 experience should be enough to guide us toward a more collaborative and solidaristic world; however, it seems that this was not the case, as coun-

tries failed to achieve a pandemic agreement, for example. Considering this, NPHIs and their ministries of health should work to overcome this scenario and increase collaboration and cooperation among themselves to deal with health emergencies at a local level but with a global approach.



Panel 1 speakers.

1.3.2 - PANEL 1: PART 2: National perspectives

Room 1

Chair: **Professor Aamer Ikram**, IANPHI
Rapporteur: **Dr. Gerson Penna**, FIOCRUZ

Professor Vernon Lee, Interim Communicable Diseases Agency, Singapore.

Dr. Jenny Harries, UKHSA, United Kingdom.

Dr. Tânia Fonseca, FIOCRUZ, Brazil

Room 2

Chair: **Ms. Sadaf Lynes**, IANPHI
Rapporteur: **Dr. Felix Rosenberg**, FIOCRUZ

Professor Hongbing Shen, China CDC, China
Professor Johanna Hanefeld, RKI, Germany
Professor Vivian Kouri, Cuba IPK, Cuba.

Room 3

Chair: **Dr. Rebecca Martin**, Emory University
Rapporteur: **Dr. João Miguel Estephano**, FIOCRUZ

Dr. Henry Walke, Office of Readiness and Response, USCDC, United States

Professor Claude Muvunyi, Rwanda Biomedical Center, Rwanda

Dr. Lisa Indar, Caribbean Member States/Caribbean, CARPHA

KEY TOPICS COVERED

Room 1 (Interim Communicable Disease Agency, Singapore, UKHSA and FIOCRUZ)

• Perspectives from Interim Communicable Disease Agency, Singapore

Professor Lee highlighted the necessity of strengthening global surveillance data sharing for enhanced pandemic preparedness.

- He emphasized the importance of transparent and timely sharing of information (e.g., on emerging pathogens, disease spread trends, and anti-

microbial resistance patterns) to facilitate early detection and coordinated response efforts, as well as coordinating preparedness and response measures to Emerging Infectious Diseases across countries.

- He encouraged actions such as:

- o The creation of standardized protocols for data sharing, the performance of joint risk assessments and synchronized response strategies to ensure global measures are harmonized, enabling a more effective and unified response to emerging threats.

- o Fostering regional self-sufficiency in vaccine and medical countermeasure production.

- o Encouraging the G20 to support the development of regional manufacturing hubs that can provide a stable supply of vaccines and medical countermeasures, enhancing regional health security.

• Perspectives from UKHSA

Dr. Harries emphasized the necessity of drawing attention to achieving universal access and enhancing research and development evaluation.

- The adoption of the One Health approach was encouraged.

- Examples of Mpox and health-climate interactions underscore the critical importance of preparedness, response, and building resilient health systems.

• Perspectives from FIOCRUZ

Dr. Fonseca highlighted the relevance and necessity of improving coordinated actions to overcome health threats. Some examples of public policies and actions in this regard carried out by the Brazilian Ministry of Health and FIOCRUZ in tackling COVID-19 were presented.

- She emphasized the importance of the 100 Days Mission and of considering equity in all efforts to build and strengthen local and regional produc-

- Interaction among health professionals, communities and society was pointed out as essential to understanding how actions and policies should be better communicated.

Room 2 (China CDC, RKI and IPK)

• Perspectives from China CDC

Professor Shen identified the need to recognize the central role of NPHIs in addressing public health safety by providing the workforce, experience, and knowledge for health security issues and pointed out:

- o As the forefront of responding to public health emergencies at national and global levels.

- o Providing evidence-based advice in the formulation of public health safety legislation and policies.

- o Leading efforts to strengthen essential capacities for public health emergencies.

- Since 2012 to date the China CDC has been providing answers to public health emergencies, such as several earthquakes and floods in the region; West Nile virus disease; H7N9; radioactive food contamination in Xinjiang; the Ebola epidemic in West Africa; Typhoon Haiyan in the Philippines; the pneumonic plague epidemic in Jiuquan; poisoning by pseudomonas in Wenshan; the Mers epidemic; ZIKA and Yellow Fever both domestic and abroad; Rhabdomyolysis; Rift Valley Fever; COVID-19; Mpox and measles outbreaks, among others.

- China CDC is deeply involved in the negotiation of the Pandemic Treaty. The negotiation of the legally binding Pandemic Agreement is essential to strengthen the future pandemic PPR:

- o Maintain momentum and commitment

- o Ensuring meaningful public health provisions

- o More INSP voices needed in the negotiation room

- It is necessary to develop and update national health security laws and strategies. China CDC drafted and submitted the National Infectious Diseases Law, the National Public Health Emergency

Management Law, and the National Emergency Preparedness Plan for final approval.

- It has been pushing for the capacity building of Rapid Response Teams (RRTs). 59 national teams were developed in 31 provinces, including 20 infectious disease RRTs. These teams act on infectious disease; Poisoning incident; Nuclear and radiation event; natural disasters. Standards for the performance of the RRTs have been developed, contingency plans and rapid implementation mechanisms are in place. Training and exercises have also been implemented every year and they have developed mobile teams including a mobile BSL-3 laboratory, a mobile command center with satellite communication and a mobile logistics booth. It requires them to be prepared for future international missions and contribute to the global workforce network.

- In June 2024 it completed the GOARN Level 1.5 bi-regional Training, Co-organized by China CDC, GOARN and WHO WPRO, supported by RKI, Japan NIID, GD CDC, where 67 rescuers participated in the training: Brunei Darussalam, Cambodia, China, Indonesia, Laos PDR, Malaysia, Singapore, Sri Lanka, Thailand and Vietnam.

- Another important line of work is China in Africa, being a founding partner of the Africa CDC. It has appointed senior experts working with the Africa CDC (2 specialists per year); convened high-level meetings; exchanged bilateral visits between China and African countries; participated in the meeting of the ACDC task force and the meeting of the multinational working group; provided support in the preparation of the implementation plan, selection of the RCC and external evaluation; participated in the training of ACDC fellows, and supported the creation of a BSL-3 laboratory in Sierra Leone. Since 2014, more than 200 China CDC staff have been sent to the lab for short- and long-term support.

• **Perspectives from Germany**

Professor Hanefeld outlined that RKI monitors basic research-oriented pathogens and their implementation which played a key role in the pandemic as part of RKI's function as the National Public Health Institute of Germany.

RKI had an immediate impact with the German population in emergencies and responses to national health challenges with the mandate to notify diseases with robust public health disease notification systems and quick feedback.

- RKI undertakes surveillance, including Genomic surveillance and antimicrobial resistance, characterization of new pathogens and generating evidence.

- It develops guides for medical professionals.

- RKI works in a network with many exchanges with different institutions.

- Referral network and quality control and evaluation to develop new treatments.

- Twenty-seven (27) teams are working on the Ebola virus in Africa.

- RKI works bilaterally with many countries and multilaterally with the WHO.

- Professor Hanefeld also identified the importance of leadership at both the national and international levels for preparedness and response; the need to recognize and empower the NPHIs for surveillance and response, including sustainable financing.

• **Perspectives from Institute Pedro Koury**

Dr. Kouri highlighted that:

- The fact that the emergence of new pathogens affects communities creating challenges in a country with limited resources was pointed out. The situation implies developing an integration with a multisectoral approach based on one health.

- The Cuban System is solidarity-based, accessible without burdens, with three levels. The Institute Pedro Koury (IPK) is at the third level where it assists the health authority with diagnosis and reference, isolation of symptomatic individuals and isolation of tourists or travelers with symptoms.

- IPK has four functions: Diagnosis, Surveillance and Reference of Infectious Diseases; Medical Care, Clinical Surveillance and Clinical Trials; Research and vaccine evaluations; and Education, in undergraduate and postgraduate levels (Masters and Phd).

- The National Reference Center has 23 national reference laboratories accredited by PAHO-WHO, including two WHO collaborative centers for dengue and TB.

- Since 1979, the teaching activities have trained 93 514 professionals from 115 different countries.

- IPK collaborates with Global Health Organizations. IPK personnel provided collaboration in medical care, diagnosis and epidemiological surveillance during.

- The COVID-19 epidemic in Venezuela, Nicaragua, Azerbaijan, Angola and Qatar.

- Cooperates with all actors in the region and the world.

- Epidemiological studies and clinical trials with Cuban Vaccine candidates against COVID-19 were also performed.

- IPK is part of a group of advisors on the COVID-19 Pandemic in the Ministry of Health's Expert Committee for treatment innovation, including the evaluation of the use of COVID-19 vaccines.

Room 3 (USCDC, RBC and CARPHA)

• **Perspectives from USCDC**

Dr. Walke emphasized the necessity of a health equity strategy to figure out what population is at risk and disproportionately affected, while recognizing that we live in an interconnected world.

- Readiness means that we need to be prepared during all time and this mindset is the basis of the Public Health Emergency Preparedness (PHEP) Program readiness framework.

- The US CDC is focused on digital health and is interested in data modernization, response and forecasting & outbreak analytics.

• **Perspectives from RBC**

Professor Muvunyi highlighted some pressing challenges:

o The lack of plateau diseases indicators.

o Healthcare service delivery gaps. o Evolving health landscape.

o Decline in funding. o Gaps in staff.

o New expectations/needs of R&D.

- He stated that NPHIs should ensure that every started program is implemented to guarantee their key role in the evidence-based decision-making process of health ministries.

- He raised relevant initiatives and ongoing projects in Rwanda, such as:

o Use of drones to deliver human and animal vaccines to communities at risk of outbreaks.

o Integrating the usage of Artificial Intelligence to support diagnostic, surveillance, early warning and decision-making process.

o Response organized in task force and by an end-to-end surveillance.

o Collaboration with Africa CDC to conduct assessment and identify gaps to strengthen the PPR capacity in Rwanda.

• **Perspectives from CARPHA**

Dr. Indar explained that CARPHA is not an NPHI but a National Public Health Agency for the Caribbean, which is a region with smaller countries and near borders that result in rapidly diseases spread.

- She highlighted the impact that hurricanes bring to the region since they increase the exposure and risk to public health threats (relation between climate change and health).

- She raised relevant initiatives and ongoing projects in the Caribbean, such as:

o Focus on Regional Health Security.

o Coordination for PPR based on agreements and partnerships.

o Coordination and advocacy for regional solidarity in PPR which allowed CARPHA to avoid a big peak in COVID-19.

o The use of WhatsApp as a tool to coordinate and monitor diseases.

o COVID-19 tourism task force.

- She highlighted the importance of building trust with society and of forming partnerships to overcome health challenges in the region.

- All panelists emphasized the difficulty of recruiting and maintaining staff, mainly due to the lack of resources to compete with the private sector and to the fact that several health workers suffered during the COVID-19 pandemic. They also highlighted that the COVID-19 experience resulted in various lessons learned, especially regarding community engagement to receive updated and timely information to better intervene in the pandemic.

- They raised the following recommendations to G20 health ministers:

o To focus on implementation tracking, mainly by creating some Follow-up mechanism with the member states.

o To focus on health workforce development. o To build a strong and integrated data system.

CONCLUSIONS

The countries' shared experiences were useful not only to present recommendations to G20 ministers of health but also to refresh ideas and promote alignment among NPHIs.

Some of the key CONCLUSIONS can be found below:

o Important role that the NPHIs had in the pandemic and in the monitoring and followup of diseases and pathogens as key tools for the health intelligence of their countries.

o Need to involve the NPHIs in the preparation of Surveillance and Response Plans, creating capacities, guidance, training of human resources, innovation in surveillance, treatment and diagnosis.

o Importance of NPHIs formative function, building capacity and training workers to handle surveillance and response, and creating work teams on the ground and public health laboratories for

public health events of international interest.

- o Highlight the dynamic relationship between health within each of the countries and global health, in the sense that it is necessary to coordinate actions on both fronts, especially in the face of public health emergencies of international interest that go beyond the borders of the countries.
- o Continue and strengthen the dimension of international cooperation.
- o Build strategic alliances and work in networks to handle emergency and response.
- o Countries need to build preparedness capacities to anticipate future pandemics, with respect to local capacities and cooperation between all ministries or government sectors.
- o The international level is important to support developing countries to produce technologies to protect and have vaccination technologies effectively.
- o It is important to have the production chain to respond to developing countries and overcome barriers to access to vaccination.
- o The Pandemic agreement tends to help developing countries rely on these capacities and to collaborate with each other to exchange information for future pandemics.
- o It is necessary to strengthen local production capacities for medicines and vaccines, providing health sovereignty to be able to overcome possible barriers to access.
- o Cooperation is needed to produce medicines and vaccines, especially during a time of epidemics and pandemics, and even facilitating storage in these emergencies.
- o Public Health emergencies imply surveillance strategies and responses that involve actors from different levels of government and sectors and, in general, the need to work with the NPHIs in all these instances.
- o The transfer of technologies is very important to be able to have this capacity to respond to future pandemics.
- o The discussion of Technology Transfer is difficult

due to intellectual property rights, but the G20 could propose sets of arrangements, consortia for research and development, generating a virtuous circle for them to expand.

o The G20 could put pressure on WHO to boost technology transfer between countries, developing new vaccines and exchanging pathogens.

NPHIs come in different forms and house different functions, but all are critical to emergency preparedness and response. While building technical capacity is vital, it is equally important to strengthen the governance, legal, regulatory, financial and workforce foundations that underpin NPHIs' work.

RECOMMENDATIONS AND COMMITMENTS

Considering panelist interventions and audience comments, G20 health ministers should consider:

- o Supporting the International Health Regulations (IHR) approved in the 77th World Health Assembly and supporting the establishment of National Public Health Institutes (NPHIs) or Centers for Disease Control (CDCs) in regions lacking these institutions. These organizations are key to monitoring, preventing, and responding to public health threats, thereby protecting populations and advancing health equity and security. Investing in NPHIs and CDCs strengthens local healthcare systems and enhances global disease prevention efforts, particularly in developing regions, considering their responsibility for global sustainability.
- o Guaranteeing to National Public Health Institutes legal and regulatory authorities, budgets and workforce to support their work, since NPHIs are critical to public health emergency preparedness and response.
- o Fostering cooperation to encourage collaborative surveillance and data integration among different sectors, entities and institutions.
- o Fostering cooperation, collaboration and solidarity, strengthening communication and dialogue between national authorities and society,

and promoting community engagement that privileges the central role of communities and social movements.

o Promoting multi-stakeholder initiatives, including NPHIs, such as the G20 HWG Alliance for Local and Regional Production and Innovation and the G20 Global Alliance against Hunger and Poverty.

o Supporting the development of regional manufacturing hubs that can provide a stable supply of vaccines and medical countermeasures, enhanc-

ing regional health security.

o Focusing on implementation and creating some follow-up mechanism for monitoring actions and commitments raised by them.

o Focusing on health workforce development. o Building strong and integrated health information systems and using advanced technologies, such as Artificial Intelligence, in disease surveillance and in health analytics.



Chair and Rapporteurs from Panel 1.

1.4 - PANEL 2: CLIMATE CHANGE AND HEALTH

Climate and health

Chairs: Dr. Sébastien Denys, Climate and Health Committee / Dr. Anne-Catherine Viso, IANPHI
Rapporteur: Dr. Luiz Augusto Galvão, FIOCRUZ

Public Health Surveillance and Climate Change
Dr. Eduardo Samo Gudo, Mozambique INS

Reducing Impact of Climate Change on Health and Well-being
Dr. Sébastien Denys, Santé publique France

Climate Change & AMR
Dr. Mark Pearson, OECD

Climate Change and Health, a Public Health Imperative
Dr. Marco Martuzzi, ISS, Italy

A Public Health Perspective on Small Island States
Dr. Lisa Indar, CARPHA

INTRODUCTION AND OVERVIEW

The panel addressed the critical intersection between climate change and public health. It explored how changes in the global climate affect the health and well-being of populations, highlighting the need for public health surveillance, mitigation, and adaptation strategies, as well as the importance of collaboration between nations and regions to address these emerging challenges.

The session's objective was to facilitate complementary talks and discussions to refine the main message for the statement issued at the Conference. After the panelists' presentations, there was a discussion with the attendees.

INTRODUCTION TO THE SESSION AND DASHBOARD

The session began with an introduction contextualizing the importance of integrating the public health perspective into climate change discussions. It discussed how extreme weather phenomena, such as heat waves, floods, and droughts, are becoming more frequent and intense, directly impacting human health. The introduction also addressed the urgent need for coordinated policies and actions to mitigate these impacts and protect vulnerable populations.

Public Health Surveillance and Climate Change

In this segment, the role of public health surveillance in the context of climate change was explored. Surveillance was presented as fundamental to monitoring and predicting health impacts related to climate change, such as the increase in vector-borne diseases (e.g., dengue, malaria) due to the expansion of mosquito breeding areas. The importance of robust surveillance systems for the early detection of outbreaks and the implementation of effective preventive measures was also discussed.

Reducing the Impact of Climate Change on Health and Well-Being

Strategies and policies that can be adopted to minimize the adverse impacts of climate change on health were discussed. These included implementing resilient health infrastructures, public awareness campaigns, and adaptation policies that protect the most vulnerable populations, such as the elderly, children, and people with pre-existing health conditions. The importance of an integrated approach involving multiple sectors, including health, environment, and urban planning, was emphasized.

Climate Change and Antimicrobial Resistance (AMR)

This topic addressed the link between climate change and the rise of antimicrobial resistance (AMR). It was discussed how climate change can exacerbate AMR through various pathways, such as increased antibiotic use due to the higher incidence of climate-related infectious diseases and the dispersion of resistant genes in climate-altered environments. The need for stricter surveillance and global strategies to combat AMR in a changing climate was underscored.

Climate Change and Health: A Public Health Imperative

This segment highlighted climate change as an urgent priority for global public health. Climate change was presented as one of the greatest threats to health in the twenty-first century, and the need for immediate action to mitigate its effects was emphasized. The discussion included integrating climate change adaptation into public health policies and the importance of involving all levels of government, from local to global, in responding to this crisis.

Public Health Outlook in Small Island States

The specific challenges faced by small island states, which are among the regions most vulnerable to the impacts of climate change, were discussed. These states face significant risks, such as rising sea levels, which threaten health infrastructures and food security. The discussion also addressed the strategies these nations can adopt to mitigate impacts and strengthen the resilience of their health systems.

Collaborative Surveillance

The panel concluded with a discussion on the importance of collaborative surveillance across countries and regions to address the public health challenges posed by climate change. Collaboration was highlighted as essential for shar-

ing data, resources, and best practices, enabling a more coordinated and effective response to emerging threats. The importance of global and regional networks supporting health surveillance and response to climate-related public health emergencies was emphasized.

This panel offered a crucial opportunity to deepen our understanding of the complex interactions between climate change and health and to discuss concrete actions that can be implemented to protect the health of populations in an ever-changing world.

Mechanism to support the implementation of the health and climate roadmap¹

The International Association of National Public Health Institutes (IANPHI) has demonstrated its leadership capability in crafting strategic roadmaps that integrate health and climate, recognizing the critical importance of addressing these two interconnected areas. IANPHI's ability to articulate a clear and operational vision to address the public health challenges posed by climate change highlights its role as a central organization in mobilizing global efforts to protect health in a changing climate context.

Given this proven capacity, it is proposed that IANPHI establish a dedicated support mechanism for implementing and monitoring the health and climate roadmap. This mechanism could include the creation of a special committee or a permanent working group within IANPHI responsible for coordinating the actions of public health institutes concerning the roadmap and ensuring that the goals and objectives are achieved effectively and on time.

In addition, it would be essential to organize regular meetings of public health institutes to assess progress, share good practices, and adjust strategies as needed. These meetings could culminate in a special meeting during COP30, where IANPHI members would have the opportunity to present advances, challenges, and recommenda-

tions to the international community, reinforcing the collective commitment to integrating health and climate into global agendas.

COP30, as one of the most important international events on climate change, provides a strategic platform for IANPHI to extend its influence and strengthen collaboration between different sectors and countries. By bringing the results of the roadmap to the COP30 negotiating table, IANPHI would promote the importance of public health in climate discussions and drive concrete action at the global level, aligning health and climate policies for a safer and more sustainable future.

This support mechanism, anchored in periodic meetings and culminating in COP30, would ensure that IANPHI's efforts on health and climate are sustainable and effective, providing a clear pathway for mitigating climate health impacts and promoting resilient adaptation of populations worldwide.

KEY TOPICS COVERED

• Reducing the Impact of Climate Change on Health and Well-being

In his presentation at the first panel, Dr. Denys explained the work done by the IANPHI Climate Change thematic committee, particularly the roadmap². Dr. Denys also remarked on the critical messages from the session: creating a more vital link between international processes and the work of NPHIs and the intersectionality of struggles. He highlighted the importance of the co-benefits between the public health sector and the fight against global warming, particularly the sustainability of health systems in connection with international initiatives such as the G7. He warned that the cost of inaction would be much higher than the cost of starting to address the fight against global warming.

Five highlights of his presentation are:

1. Heat and Public Health Implications: Significant mortality and economic costs due to heat waves,

with a notable impact on vulnerable populations and social inequities.

2. Need for Early Warning Systems: There is an urgent requirement for NPHIs to establish early warning systems to mitigate heat-related health impacts.

3. Monitoring Heat-Related Health Impacts: Only a minority of NPHIs currently monitor heat impacts using diverse methods and indicators.

4. Role of NPHIs in Climate Adaptation and Mitigation: NPHIs are crucial for efficient climate adaptation and mitigation research, policies, and actions, leveraging their unique scientific and institutional positions.

5. IANPHI Commitments: Strengthening NPHI capacities, enhancing training and collaboration, advocating for health in climate policies, supporting the greening of public health services, and monitoring progress in climate change involvement. He also presented the IANPHI commitments on climate change, including:

1. Advocate for strengthening the capacity of NPHIs to contribute effectively to climate policies and action.

2. Enhance capacity, competence, and training through peer-to-peer support and knowledge sharing between NPHIs.

3. Increase collaboration with international and regional organizations active in public health and climate change.

4. Advocate for health in all policies that impact the climate.

5. Support the greening of public health services.

6. Monitor progress in the NPHIs' involvement in climate change policies through critical indicators.

• Climate Change and Health, a Public Health Imperative

In the second presentation of the panel by Dr. Martuzzi, he discussed the co-benefits in healthcare, showing the interdependence of

healthcare and the fight against climate change. He highlighted that the healthcare sector is one of the biggest emitters of greenhouse gases.

Five highlights of his presentation are:

1. Health Effects of Climate Change: This includes extreme weather events, heat waves, floods, hurricanes, landslides, the spread of vector-borne diseases, wildfires, droughts, desertification, and the salinization of coastal areas.

2. Role of ISS: Involves research, national and international projects on nature-based solutions, health co-benefits of mitigation policies, advocacy, community-based interventions, promoting environmental sustainability of health systems, capacity building, and coordination of a national network on environment, climate, and health

3. Support to MoH's Charing G7-Health: Preparation of the G7 Health Ministers Communique, focus on global health architecture, pandemic prevention and response, healthy aging, One Health antimicrobial resistance (AMR), and climate change.

4. Recommendations on Climate Change: Urgent transition from fossil fuels to renewable energy, international coordination on deforestation, animal breeding, wild animal harvesting, and food market sanitation, dietary changes for planetary Health action against chemical pollution, and considering climate impact in healthcare services.

5. Health Systems and Climate Change: Emphasizes adaptation, preparedness, climate resilience, mitigation, reducing environmental impact to achieve net zero, and advocating for health benefits of mitigation.

Dr. Martuzzi also discussed systems thinking in public health, highlighting the following points:

1. Complex Systems: Health and its determinants are part of a complex system characterized by non-linear behaviors, adaptive responses, feedback loops, and tipping points, making it difficult to extrapolate from past trends.

2. Self-Preserving and Self-Organizing: These sys-

tems can maintain and organize themselves.

3. Optimal Intervention to Process: The approach shifts from identifying the optimal intervention to "dancing with complex systems," as described by D. Meadows, which means embracing the complexity rather than trying to reduce uncertainty.

4. Embrace Complexity: Instead of simplifying or reducing uncertainty, the focus should be on dealing with the inherent complexity of these systems. This perspective encourages a more holistic and adaptive approach to public health interventions, recognizing health determinants' intricate and interconnected nature.

He also emphasized some recommendations for combating climate change, such as:

o Rapid Transition from Fossil Fuels to Non-Carbon Solutions: Emphasizing the shift to renewable energy sources.

o International Coordination: Actions concerning deforestation, extensive animal breeding (particularly ruminants), wild animal harvesting, and sanitation of food markets.

o Planetary Health-Oriented Dietary Changes: Urgent need for dietary adjustments to support planetary health

o Action Against Chemical Pollution: Taking severe measures to combat chemical pollution.

o Considering Climate Impact in Healthcare Services: Ensuring climate change's impact is factored into healthcare services and delivery.

• Climate Change & AMR

Dr. Pearson proposed bringing an economic perspective to the link between AMR and Climate Change. In his presentation, he addressed the subject of employability, the financial consequences of not seeking to address the global warming crisis, and particularly the effects on workers' health. He also mentioned the antimicrobial resistance many countries face, which is linked to the fact that climate change is a significant factor in the proliferation of infections and epidemics. He also stressed that the cost of inaction will exceed the

cost of action in the fight against global warming.

His presentation explained his perspective on the intersection of climate change and antimicrobial resistance (AMR), highlighting the impact on health and working conditions and the need for One Health policies to address these global challenges.

Five highlights of his presentation are:

- 1. Ministerial Declaration on Climate Change:** The OECD Health Ministerial 2024 includes a call for the OECD to assist in making health systems climate-neutral and environmentally sustainable by developing a dashboard with robust measures.
- 2. Rising Heat Exposure:** There is a significant increase in population exposure to hot summer days (>35°C) from 2000-04 to 2017-21, and many workers are exposed to high temperatures at work.
- 3. Increasing Antibiotic Resistance:** Antibiotic resistance rates are high and rising in two-thirds of G20 countries, with resistance to last resort drugs increasing by 58% over the previous two decades.
- 4. Economic and Health Costs of AMR:** Globally, nearly USD PPP 594 billion is spent annually to treat resistant infections, and almost USD PPP 691 billion is lost through reduced workforce participation and productivity.
- 5. One Health Policy Package:** Implementing a One Health policy package could cost around USD 46 billion per year but would nearly halve the health and economic burden of AMR in LMICs and generate a return on investment of around USD 8 for every USD invested.

He also explained “The One Health Policy Package,” a comprehensive set of interventions to address antimicrobial resistance (AMR) across humans, animals, and the environment.

Key components include:

- o New Antimicrobials (23.3%): Development of new antibiotics.
- o WASH (22.5%): Water, sanitation, and Hygiene investments.
- o Antimicrobial Stewardship Programs (ASP) (10.1%): Optimizing the use of antibiotics.

- o Diagnostics (8.1%): Improving diagnostic tools to identify infections better.
- o Environmental Hygiene (7.4%): Enhancing hygiene practices in various environments.
- o Mass Media (5.9%): Public awareness campaigns.
- o Financial Incentives (15.6%): Economic incentives to promote best practices.
- o Hand Hygiene (1.4%): Promoting hand hygiene practices.
- o Biosecurity (1.2%): Measures to prevent the spread of infections in animal production.
- o Food Hygiene (1.2%): Ensuring good hygiene practices in food processing.
- o Education (1.4%): Educational initiatives to inform about AMR.
- o Vaccines (0.2%): Development and use of vaccines.
- o Delayed Prescribing: Strategies to postpone the use of antibiotics unless necessary.

Implementing this package is projected to cost around USD 46 billion per year. The package is expected to cover nearly half the health and economic burden of AMR in low- and middle-income countries (LMICs) and generate a return on investment of around USD 8 for every USD invested.

• **A Public Health Perspective on Small Island States**

In her presentation, Dr. Indar discussed the impact of climate change on public health in the Caribbean region, focusing on small island developing states and the need for resilience and collaboration to address health threats.

Five highlights of her presentation are:

- 1. High Vulnerability to Climate Change and Disasters:** The Caribbean region is highly vulnerable to disasters and climatic change, which impact public health, economic stability, trade, tourism, and access to goods and services.
- 2. Health Impacts of Climate Change:** Climate change affects health through natural systems (e.g., hurricanes, floods, droughts, heat waves)

and human systems (e.g., migration, loss of livelihood, poverty). This leads to adverse health outcomes such as respiratory complications, heat-induced morbidity, and outbreaks of vector-, food-, and water-borne diseases.

3. Infrastructure and Response Capacity: Extreme weather events disrupt essential services like potable water, sewer systems, and solid waste management. They also damage infrastructure, including houses and healthcare facilities, and hamper the region’s capacity to respond to health emergencies.

4. Regional Collaboration and Initiatives: There are ongoing regional collaborations and initiatives to strengthen health systems’ resilience to climate change. These include partnerships with organizations like PAHO, CARPHA, and CIMH, and projects like the 11th EDF/CARIFORUM Project to improve surveillance, early warning systems, and resource allocation.

5. Need for Greater Support and Sustainable Strategies: There is a strong need for increased financing and international support to sustain and further build resilience against climate change. A focus on sustainable strategies is crucial when developing and implementing climate adaptation and mitigation measures.

Climate change significantly impacts Caribbean health systems through both natural and human-mediated pathways.

Natural systems, such as extreme weather and climate events, directly affect health by causing hurricanes, floods, droughts, heat waves, and Saharan dust incursions. These events lead to adverse health outcomes, including respiratory complications, heat-induced morbidity, outbreaks of vector-, food- and water-borne diseases, injuries, fatalities, and mental health issues. Additionally, they affect water availability and safety, air quality, and food safety and security.

Human systems are also impacted, leading to migration and displacement of populations, loss of livelihoods, increased poverty, reduced

work capacity and productivity, and challenges in attaining the Sustainable Development Goals (SDGs). The disruption in crucial services like potable water, sewerage systems, solid waste management, and the destruction and contamination of agricultural produce further strain health systems. Damage to infrastructure, including houses, hospitals, and care facilities, exacerbates these challenges, especially for lower-income populations.

Overall, climate change increases the vulnerability of Caribbean health systems, making it harder to respond to and recover from health emergencies.

The role of CARPHA (Caribbean Public Health Agency) in enhancing climate resilience in the Caribbean region is achieved through several key activities:

- 1. Improving Surveillance Capacity:** CARPHA works to strengthen surveillance systems and build integrated assessment tools to monitor climate-sensitive diseases and health conditions.
- 2. Early Warning Systems:** The agency is developing early warning systems (EWS) for climate-sensitive diseases, such as dengue, which can predict potential outbreaks at least three months in advance. This allows the health sector to allocate resources effectively to mitigate the impact of outbreaks.
- 3. Health Emergency Response:** CARPHA provides rapid health needs assessments, technical guidelines, and public health emergency supplies to islands impacted by extreme weather events, such as hurricanes.
- 4. Collaborations and Partnerships:** CARPHA collaborates with various regional and international organizations, including PAHO, CIMH, and UWI, to strengthen health systems’ resilience. These collaborations focus on creating and implementing national health adaptation plans, climate-integrated surveillance, and early warning systems.

5. Resource Allocation and Decision Making: The agency supports the development of climate-integrated health tools, infrastructure, and information services that aid public health decision-making and resource allocation.

Overall, CARPHA’s efforts are aimed at building a more resilient health system in the Caribbean to better respond to and recover from the impacts of climate change.

• **Public Health Surveillance and Climate Change,** National Institute of Health, Mozambique

Dr. Samo Gudo presented another specific case on the impact of climate change on public health surveillance in Mozambique and the efforts to build climate-resilient health systems in Africa.

Five highlights of his presentation are:

1. Mozambique’s Vulnerability to Climate Events: Mozambique is highly affected by extreme climate events, with significant impacts from cyclones like Idai and Kenneth in 2019, which caused numerous deaths and displaced hundreds of thousands of people.

2. Fragile Health System in Africa: Africa, including Mozambique, struggles with a fragile and underfunded health system, burdened by endemic and epidemic diseases and limited literacy on climate change and health

3. Climate and Health Observatory: Mozambique has established the Climate and Health Observatory to integrate multidisciplinary data for decision-making, including surveillance data, environmental data, and climate data, to analyze trends and risks.

4. Vulnerability and Adaptation Assessments: Mozambique conducted vulnerability and adaptation assessments at the district and health facility levels, revealing that 47% of health facilities are highly vulnerable to extreme climate events.

5. Climate Resilient Health Initiatives: The country is developing climate-resilient infrastructure and technologies, improving supply chains, and enhancing service delivery through mobile facilities and community health centers, supported by

digital and real-time health information systems.

Mozambique is addressing health system vulnerability through several initiatives:

1. Climate and Health Observatory: Establishing the Climate and Health Observatory to gather and analyze multidisciplinary data, including surveillance, environmental, and climate data, to inform decision-making and risk analysis.

2. Vulnerability and Adaptation Assessments: Conducting assessments at the district and health facility levels to identify vulnerabilities and resilience levels, with findings showing that 47% of health facilities are highly vulnerable to extreme climate events.

3. Climate Resilient Infrastructure and Technologies: Developing new models for health facilities to withstand extreme climate events and implementing resilient supply chains, including drones and improved forecasting.

4. Service Delivery Enhancements: Introducing mobile health facilities and teams, community health centers, and differentiated service delivery models to ensure continued healthcare access during crises.

5. Workforce Training and Education: Providing pre-service and on-the-job training for health professionals, updating human resource development plans, and increasing literacy on climate change and health among health professionals and the community.

6. Digital Health Information Systems: Implementing digital and real-time health information systems (m-Alert) and developing a climate and health-related indicators framework to monitor progress and impact.

These measures aim to build a more resilient health system, capable of withstanding and adapting to the impacts of climate change.

To build a climate-resilient health system, Mozambique is developing new infrastructure models, improving supply chains, enhancing service delivery with mobile facilities and community health centers, and implementing digital health

information systems. Additionally, there is a focus on workforce training, climate-related education, and risk communication to increase literacy on climate change and health among health professionals and the community.

CONCLUSIONS

The panel underscored the urgent need for global action at the intersection of climate change and health, highlighting that the cost of inaction far outweighs the costs of preventive and adaptive measures. G20 countries were urged to enhance surveillance systems, build climate-resilient health infrastructures, address AMR, and support vulnerable populations, especially those in small island states. Collaboration across sectors and nations is essential to ensuring that health is at the forefront of global climate change policies, with a clear call for integrating health into climate discussions at key international forums like COP30.

RECOMMENDATIONS AND COMMITMENTS

Considering panelist interventions and audience comments, key recommendations were:

- o To welcome the IANPHI Roadmap for Action on Health and Climate Change³ as a powerful tool for tackling the impacts of climate change on health.
- o To promote evidence-based public policies for better population health and wellbeing, that are

climate-responsive, ethical and equity-driven, while avoiding stigmatization and discrimination based on age, gender, race, and ethnicity, among others.

o To invest in enhancing public health surveillance systems to detect and respond to climate-related health threats, including vector-borne diseases and AMR. Early warning systems and climate-adaptive public health strategies are crucial.

o To strengthen health systems by making them more resilient to climate-induced disruptions, such as extreme weather events. This includes upgrading infrastructures, supply chains, and emergency response mechanisms.

o To promote research of the impacts of climate change on health, focusing on developing policies and practices that reduce the health risks associated with global warming, in coordination with NPHIs.

o To integrate global policies to combat antimicrobial resistance into climate change responses, while investing in the development of new antibiotics, promoting antimicrobial stewardship, and improving hygiene and sanitation to reduce the spread of resistant infections.

o To provide financial and technical support to vulnerable regions to build climate-resilient health systems and to safeguard the health of their populations.



Panel 2 speakers, chairs and Rapporteur.

1.5 - PANEL 3: EQUITY AND HEALTH

Equity and health

Chair: Ms. Shelly Bratton, USCDC and co-Chair, IANPHI Equity and Health Committee

Rapporteur: Dr. Felix Rosenberg, FIOCRUZ; co-Chair, IANPHI Equity and Health Committee

Experience in Dealing with Structural Inequities in health in Africa

Dr. Raji Tajudeen, Africa CDC

SDGs: an Intersectoral Approach to Face Health Inequities

Dr. Felix Rosenberg, FIOCRUZ

Tackling Social and Commercial Determinants of Health

Dr. Karen Hacker, USCDC

Benefits of a Public Health Approach to Health Inequities

Dr. Pierre-Gelie Forest, INSPQ, Canada

Community Engagement

Dr. Stéphanie Vandentorren, Public Health Agency France

Global Public Health Equity in Emergency Response: Essential Public and Emergency Health Workforce

Dr. Shiva Murugasampillay, Zimbabwe

INTRODUCTION AND OVERVIEW

Panel 3 focused on exploring the critical issue of health equity and its implications in both routine and emergency health situations, and it brought together public health experts and professionals to discuss how structural inequities impact health outcomes and what can be done to address them. Panelists, representing organizations from Africa, Europe and the Americas, provided a comprehensive look at how health disparities manifest

across different regions and populations. They focused on how systemic and social determinants, such as access to healthcare, education, housing, and income inequality, contribute to health inequities, especially in vulnerable communities.

Discussions were framed within the context of the **Sustainable Development Goals (SDGs)**, emphasizing the commitment to leave no one behind in achieving equitable health outcomes by 2030. The panel also addressed the broader challenges of integrating health equity into national policies and healthcare systems, advocating for intersectoral and community-driven approaches to overcome barriers to access.

A key aspect of the panel was its focus on the role of NPHIs in reducing inequities by promoting access to healthcare, advocating for universal health coverage, and supporting local production of medicines and vaccines. Panelists **stressed the need for local solutions, with frontline healthcare workers and communities playing pivotal roles in addressing these issues.**

Discussions underscored the necessity of collaboration across sectors and community involvement to ensure that health systems are inclusive and responsive to the needs of all.

KEY TOPICS COVERED

• Experience in Dealing with Structural Inequities in health in Africa

- Structural inequalities have always been present in Africa. The continent is full of health problems such as infant and maternal mortality. The population is growing very rapidly and inequalities in morbidity and mortality rates are increasing among vulnerable groups.

- There is little planning for governments to take care of their populations who arrive in cities and do not consider these vulnerable groups, though.

- Some countries have established governance mechanisms, such as Workers' Committees, to account for migration moving to cities.

- On the other hand, the region has promoted the formation of technical teams of epidemiologists to take care of safety regarding the risks of diseases in the population.

- Another important inequality is in relation to access to technology, medicines, diagnostics and vaccines. These are mostly imported and are not produced on the mainland. The NPHIs must assume a strong role in promoting access to medicines and vaccines and in this sense, it is essential that they form partnerships to promote innovation, production, as well as joint purchasing strategies.

- The priorities of the CDC are to strengthen institutions and institutional capacities at both the national and regional levels.

- In the framework of the COVID-19 Pandemic, a platform was created to respond and ensure that all AFRO Member States had access to personal protective equipment, medicines and vaccines and to overcome access barriers through joint procurement strategies. In this context, important alliances and partnerships have been made to support Member States in the principle of inclusion and equity.

- An important issue is to think about frontline workers, who work at the first level of care and who mainly serve the population below the poverty line. In this sense, it is necessary for countries to have the necessary financing for these frontline workers.

- CDC AFRO works on mobilizing funds to be able to have resources to develop projects that meet needs at the regional level and strengthen national capacities.

- The Pandemic Agreement is taking a long time, and it is necessary to respond by taking advantage of the lessons learned during the COVID-19 pandemic. It is necessary to have an Agreement or Treaty on the Pandemic that has African States at the center, with equality as an axis and that allows all to work together.

• SDGs: an Intersectoral Approach to Face Health Inequities

- Equity in health and well-being is linked to the fulfillment of SDGs and its 2030 Agenda, with the commitment to leave no one behind. This includes determinants of health inequities such as housing, education, income, water and sanitation, public transportation, sports, culture and leisure.

- Occupation/profession as an indicator of social structure associated with the determination of health inequities was shown over 200 years ago. Since then, evidence about the structural determinants of health and disease is quite abundant. Showing this relationship is not the issue anymore.

- Opportunities for the health sector to reduce inequities include enhancing access to health products and advocating for universal access to health services. FIOCRUZ influenced national policies, including the creation of its Unified National Health System – SUS and the establishment of specific policies for vulnerable populations; the production of vaccines, drugs and diagnostic kits for public access; training public health professionals and health technicians, among many other health equity related issues.

- However, social determination of health inequities can only be reached by facing intersectoral resilient changes. Whereas sectoral policies are discussed globally and defined at national levels, the implementation and impact of these policies will integrate at the territories, where people live.

- Intersectoral Territorial strategies are more efficient and feasible. It is much easier to advocate for an intersectoral approach to health inequalities at the local governmental level. The local structure of Primary Health Systems (PHS) is probably the major asset to act on intersectoral determinants of health at local levels, approaching community participation for health and wellbeing and not just the port of entry for disease prevention and care. Being the more widespread pres-

ence of the State at the territorial level, it shares locally, common issues with the social assistance and education sectors, among others.

- First steps to involve actively NPHIs in facing health inequities include, initially, the incorporation of Health Inequities as one of their strategic areas of concern; introduce and strengthen training and research on National Health Systems including the access of fragile/vulnerable populations to the PHS; monitor the evolution of SDGs at national and territorial levels; build indicators of inequities in health and wellbeing; and develop pilot projects at local/municipal levels for the implementation of Social Technology applying qualitative tools to identify the perception of specific social groups, cultures, gender and territorial realities on health inequalities and wellbeing as well as their ideas and proposals to face them.

• **Tackling Social and Commercial Determinants of Health**

- Health inequalities exist in the U.S. and have increased in the wake of the pandemic.

- Public health requires attention to these inequalities and inequities.

- It is important to explain that equity implies that everyone has fair and timely access to all necessary levels of health.

- US-CDC has developed a framework to address health equity in: Policies and Laws, Data and Surveillance, Infrastructures and Capacities, Evidence Assessment and Construction, Community Engagement, Alliances and Collaborations.

- In the USA approaches and measures exist to act on the social and environmental determinants of health.

- For instance, the National Center for HIV and Hepatitis has been working on housing and living conditions for patients. They have approaches to the community.

- However, there are approaches and policies that need to be changed.

- The surveillance system is important to

see how chronic diseases are reported and which Social Determinants of Health are important.

- There is a need for interagency policies to formulate and prioritize plans and projects.

• **Benefits of a Public Health Approach to Health Inequities**

- The question is not, should we or could we address health disparities, but can public health (and more specifically, a public health institute) make a difference in and by itself? It might prove difficult, given the limited direct influence NPHIs have on most health determinants. But it is not impossible because of their deep understanding of the dynamics at work and the skills developed for indirect social and political action. The Quebec National Institute for Public Health has chosen this avenue and will use its successful transdisciplinary approach to investigate and reduce the health impact of some structural risk factors.

- The imperatives of social protection: The Beveridge report stresses that it is necessary to talk about inequalities in employment, education and housing, which are a consequence of racism, gender and difficulties in accessing health.

- Many things about what is important to change in society, such as social and environmental determinants are outside the scope of public health control or governance.

- An important part of NPHIs mission is the need for cross-sectoral action. Interdisciplinarity works well with multi-sectoral engagement. Public Health feeds on interdisciplinarity to provide answers to inequities.

- Considering the Gini coefficient, work on health policies to reverse and generate more equality is possible.

- For instance, INSPQ has a transdisciplinary approach to breast cancer.

- The Institute shall implement approaches aimed at structural factors and encourage the active participation in its work of those population groups that are impacted, to advance health equity.

- Open-door policies proposing interdisciplinarity and intersectorality must be created.

- NPHIs must be generators of debates for the formulation of policies on inequalities and determinants of health.

- The difference NPHIs can make relies on relevance, credibility and anticipation through:

- o Expertise: Science and technology backing innovative and fearless advice on current and emergent issues.

- o Assistance: Support for people engaged in collective action against health inequities, in all sectors, with a hands-on approach if warranted.

- o Reference: One-stop source for data and research on health disparities, their causes and their impact.

• **Community Engagement**

- The French health system paradox with universal health coverage and developed social services with good health status on average but simultaneous significantly higher social health inequalities compared to other Western European countries. The COVID-19 pandemic reminded that France was not yet sufficiently equipped to measure and therefore combat social inequalities in health.

- The role of the NIPH is to advise decision makers including with regards to health inequalities, through the documentation and analysis of structural social determinants; knowledge mobilization with quantitative and qualitative data from the field/communities; and a participatory approach identifying communities' needs; ensuring their involvement in projects/studies/interventions and advocating for their involvement in the decision making process in health; training the NPHI staff and creating capacity to design studies and interventions at a local level.

- Community involvement has been a key factor during the COVID-19 pandemic to improve testing and vaccination among underserved people. It was also critical to prevent lead poisoning

among the travelers community.

- There is no doubt that excess morbidity and mortality are due to social differences in the population. During the pandemic, not all Western European countries were equipped, and this increased health inequality.

- In France, 12 regions were created with Regional Health Agencies, which work with the community to build trust in communication, collaboration and health actions. These have made it possible to advise decision-makers, producing information and knowledge at both regional and national levels.

- It is necessary to analyze the social and environmental determinants of health.

- It is necessary to mobilize knowledge and identify the needs of communities.

- Health is not always a need felt by the community and some of the most urgent issues have to do with the stigmatization and prejudice that communities suffer.

- Some key messages include the importance of complementary quantitative and qualitative approaches shedding light on structural inequalities; an intersectoral approach to develop public policies which addresses structural determinants; interventions that combine proportionate universalism and targeted actions for the most vulnerable; effective mobilization of existing national and local instruments; and integration of equity dimensions in the evaluation of effectiveness.

• **Global Public Health Equity in Emergency Response: Essential Public and Emergency Health Workforce**

- Public health workers were the focus of the presentation, highlighting that it is necessary to have a common language, built with teams and people who work in health.

- The Primary Care strategy is the bible that should be considered by teams of health workers.

- Key aspects such as education and train-

ing of the health workforce were emphasized.

- The need to promote healthy lifestyles, the promotion of food security and aspects such as adequate access to drinking water and sanitation.

- To prioritize essential public health functions, it is necessary to work with the public health workforce, including volunteers and public health professionals and all those involved in the first level of care.

- It is necessary to know which profiles are wanted, how to train them and according to which skills and in the light of the challenges of public health.

The NPHIs have the function of contributing to the formation of teams of workers to work in the field, considering health inequities.

CONCLUSIONS

In conclusion, Panel 3 underscored the pressing need to address health inequities through **structural change, community engagement, and intersectoral collaboration**. Panelists highlighted that Social Determinants of Health, such as access to healthcare, education, housing, and income, are deeply ingrained challenges that disproportionately affect vulnerable populations. The role of NPHIs was emphasized as crucial in promoting equitable access to healthcare resources, such as medicines and vaccines, while fostering innovation and local production to reduce dependency on external supplies.

A key takeaway from the panel is the importance of involving communities in the design and implementation of health interventions. By engaging those most affected, health policies can be more responsive and effective in overcoming barriers to access. The panelists collectively called for sustained advocacy, investment in social policies, and a stronger emphasis on local health systems, particularly primary healthcare, to address inequities at the grassroots level. These actions are essential not only for improving health outcomes

but also for building more resilient and inclusive health systems that can tackle future crises.

The key messages from the panel are:

- o The necessity to invest in social policies.
- o To incorporate structural inequalities in NPHIs as a fundamental strategy to identify the determinants of health inequities.
- o To incorporate research and development on the issue of access to medicines, diagnostics and vaccines.
- o To incorporate strategies that involve Primary Health Care
- o The challenge of incorporating the equity and development perspective.
- o The common theme of the speakers is the need for local and community approaches.
- o The existence of experiences in NPHIs of articulation with the community and that consider social participation to implement health policies and take responsibility for overcoming barriers to access and equity in health.

RECOMMENDATIONS AND COMMITMENTS

Considering panelist interventions and audience comments, G20 health ministers should consider:

- o Promoting intersectoral and interdisciplinary work providing an approach to equity in health.
- o The social determinants of health, like poverty and hunger, as set out through the Sustainable Development Goals (SDGs), while endorsing the 2030 Agenda proposed targets, as well as the recommendations and commitments of the UN Summit of the Future.
- o Health as a bridge to peace, while coordinating the global action to protect vulnerable population, health workforce and health infrastructure during armed conflicts, recognizing the unequivocal physical and mental harm war causes to civilian populations, such as the recent anti-polio vaccination in Gaza.
- o Working with strategic partners and allies supporting countries and the particularities of each national context.

- o That the problems experienced in relation to health inequities are often common and it is very important to learn from these experiences and to work together among all partners and to coordinate is very important.
- o The need to work with local governments, with the various sectors.
- o Documenting the work on the experiences that address the SDH and the intersectoral work to draw lessons learned and to be able to inform the decisionmaking and policy formulation processes.
- o Working with other sectors such as the food industry, the tobacco industry, and the alcohol industry to analyze data and generate evidence on the factors that affect health.
- o Sensitizing legislators who often do not understand SDH and effective policies in relation to them.
- o That effective communication strategies are needed for projects that work on equity, for decision-makers, the community, and teams.
- o A communication strategy that starts with communities, the workers to the highest level of gov-

- ernment is needed.
- o That communities need to become active subjects in health policies.
- o That NPHIs should be key players in promoting important alliances in order to face important issues with significant access barriers such as sufficient and healthy food and drug production.
- o That, when talking about inequality, it is also necessary to talk about geopolitics and an unequal distribution of power and resources at a global level that makes it difficult for countries in the global South to access certain essential health inputs.
- o That geopolitics limits responsiveness and is a structural determinant of health; it cannot limit fair and equitable access to well-being.
- o That more collaboration is needed on access to medicines; knowledge for research, innovation and production of medicines to achieve universal health.
- o Promoting a stronger approach to Primary Care at the local level.



Panel 3 speakers, chair and Rapporteur.

1.6 - PANEL 4: RESILIENT HEALTH SYSTEMS

Resilient Health Systems

Chair: Dr. Cristina Abreu Santos,

INSA, Portugal

Rapporteur: Dr. Cristiani Vieira Machado,

FIOCRUZ;

Essential Public Health Functions to Strengthen Health Systems

Mr. Haftom Taame, Africa CDC

Role of NPHIs in Resilient Health Systems

Dr. Tomofumi Sone, Japan NPHI

Health System Reform

Dr. Tonatuh Barrientos, INS Mexico

National to Subnational Approaches to Health System Resilience

Dr. Sarah Viehbeck, Public Health Agency of Canada

Multi-Sectoral Surveillance for Prevention

Dr. Natalie Mayet, South Africa NCDC

OneHealth Approach to Building Resilient Health Systems

Professor Jenny Harries, UKHSA

INTRODUCTION AND OVERVIEW

Panel 4 raised the relevant discussion on the necessity to achieve resilient health systems. However, the **concept of “resilience” of health systems is not enough** if we want to expand access to health in a universal and sustainable way, achieve equity in health and account for the complex set of health problems that transcend infectious diseases. These diseases have been at the historical origin of the public health field in most countries and are the central object of the performance of many of our national institutes. Although they continue to be relevant, this focus

today is not enough to ensure the improvement of health conditions of the population, affected by various conditions such as cardiovascular diseases, neoplasms, violence, mental health problems.

We need national public health systems that are robust, comprehensive, integrated, and oriented towards **universal access and equity**. When the health system is strong, it has more chances to be resilient. Regarding this perspective, the panel brought together experts from different NPHIs to figure out ways and strategies to achieve not only resilient, but also, robust, equitable, qualified and people-driven health systems.

1. To strengthen public health systems that achieve these goals of universality and equity, it is necessary to address structural challenges, which were highlighted in the speeches of our speakers:

- o Overcoming **excessive organizational fragmentation and segmentation** by clientele in health systems is very important to ensure universal access, greater coverage of actions and equity.
- o The challenge of articulating **national policies and local implementation** was also very much addressed.
- o **Workforce** – ensuring the **availability** of health professionals, in **suitable working conditions**, as well as the challenges that were highlighted in **training and qualifying professionals** for the various responsibilities in public health, from national management of the system to the implementation of local actions.
- o The need to have essential public health functions at the core of the system was mentioned, as well as a **strong, comprehensive, community- and territory-based Primary Health Care (PHC) with qualified professionals. PHC should be integrated with health surveillance actions and other levels of care.**
- o **Health Surveillance** – it was highlighted the importance of not being restricted or segmented by specific health problems, but **integrated within the structures and agencies of health, in the var-**

ious levels of the health system (from national to local) and having a **multisectoral** character. In this sense, the presenters brought the concepts of **One Health** and **Multisectoral Surveillance** as strategies to break with the organization of surveillance that is very fragmented by diseases, organs or sectors. Addressing challenges such as the impacts of **climate change** also requires this more integrated and cross-sectoral approach.

o Another aspect is the strategic character of the policies of **Science, Technology and Innovation in Health** including, when possible, the national development and production of health supplies. If we want to have robust health systems capable of responding to the health needs of populations, we need to ensure that all people have access to vaccines, medicines and necessary diagnostic tests, **reducing global asymmetries** in this area.

o To achieve this, it is essential to ensure **sufficient public funding** and **adequate infrastructure in health systems**, with investment in the system’s permanent capacities, beyond specific projects (such as those often funded by international sources) and emergency responses (which sometimes bring extraordinary resource flows). This will ensure continuity, coherence, and sustainability of policies and actions over time. It is also important to establish a **legal framework, planning, and institutional arrangements** to secure political commitment and stability.

o The importance of ensuring **health information systems and capabilities in data analysis and interpretation** at both national and local levels was also addressed. These are essential to guide decisions and policies, as well as to monitor and evaluate actions.

o If we are talking about strengthening public health systems, we must also consider the dimension of **public-private relations** and the need for **regulation of the private sector** in health. There is evidence that health systems in which the private sector is strong are more unequal, and the growth of private segments under little regulation or un-

der government subsidies can increase inequities.

2. NPHIs’ roles – need to strengthen them, as strategic organizations that articulate scientific knowledge with policy proposals (legal recognition and authority, funding, multidisciplinary teams).

o Develop **research and studies** in these various axes to produce knowledge and evidence aimed at **subsidizing public policies, supporting and monitoring their implementation.**

o Contribute to the **training and qualification of health professionals** in the various functions of the health system, both directly and through partnerships.

o Work on **Science, Technology and Innovation in health**, within the specificities of each context – sometimes in the development or even in the direct production of supplies and technologies, as well as supporting their regulation and assessment.

o Provide knowledge for the **promotion of equity and reduction of inequalities.**

o Ensure **stability in policies and in the health system** – institutional, social legitimacy – to demand commitment from governments, but help the continuity of policies and actions in the health system, in scenarios of political instability and governments that have no commitment to the population’s health.

o **Strengthening international cooperation** – the NPHIs together are stronger; they can learn from each other, from both the successes and mistakes of health systems and their own performance. There are many possibilities to expand partnerships. IANPHI should make a diagnosis of the NPHIs’ functions and lines of action.



o **Participation in global health coordination bodies and initiatives**, seeking a new balance in global health, with solidarity and equity among nations and peoples.

RECOMMENDATIONS AND COMMITMENTS

Considering panelist interventions and audience comments, G20 health ministers should consider:

- o Continuing to support the establishment and strengthening of NPHIs, together with the United Nations and multilateral agencies, beyond other partners.
- o Prioritizing Primary Health Care, including investments in the community health strategies, focusing on health promotion, disease prevention and comprehensive health care, without neglect-

ing other levels of attention.

- o Accelerating global and regional and national efforts to establish and strengthen NPHIs as an essential pillar for building resilient health systems and strengthen health security to protect lives and livelihoods.
- o Actively participating in global health governance, reaching a consensus on the ongoing negotiations for the Pandemic Agreement within the Intergovernmental Negotiation Body; implementing the UN Political Declaration on AMR; effectively implementing the 2015 Paris Agreement; ensuring social participation in decisionmaking processes for health, in line with Resolution WHA77.2; and incorporating national health plans for Indigenous People, as outlined in Resolution WHA76.16.

2. CONCLUSION AND CALL TO ACTION

2.1 - RECAP OF CONFERENCE'S OUTCOMES

The G20 NPHIs Conference focused on the critical role of public health institutions in addressing contemporary global health challenges, such as climate change, health emergencies, and health inequities. Various sessions, featuring international experts, highlighted the need for collaboration, capacity building, and investment in public health systems. The core objective was to formulate actionable recommendations for G20 countries to support them in the implementation of public health policies and actions related to the G20 health priorities, as well as to enhance universal access to resilient health systems and preparedness.

NPHIs recognize the importance and relevance of the G20 to build a healthier, more equitable and sustainable future, and that NPHIs are uniquely positioned as a global resource to strengthen public health systems, due to their link to national governments and to their technical and scientific capacities to tackle health challenges worldwide.

The institutes recognize severe threats that harm human and planetary health such as social and economic inequalities, the climate crisis, biodiversity loss and pollution, the increase in poverty, hunger, water scarcity, forced migration, armed conflicts and gender-based violence, health pandemics and emergencies, among others, while identifying that the COVID-19 pandemic has had a long-term impact on health systems which demands collaboration among nations to accelerate recovery and overcome the consequences of these threats.

Together, NPHIs also recognize the efforts that have been made by G20 countries to achieve the SDGs but acknowledge that there are great challenges to accomplish them by 2030, which demands more collaboration and investments.

1. In that context and considering their responsibilities, they undertake the following commitments to support ministers of health to achieve the G20 priorities:

1.1. To cooperate mutually for the global achievement of the G20 health priorities, considering an intersectoral approach and a strong collaboration and coordination with governments, institutions and organized civil society. **1.2.** To contribute to the national achievement of the G20 health priorities through the promotion of adequate public health research, education and health workforce development, technical cooperation and other capacity building activities, while strengthening national health systems and essential public health functions.

1.3. To support the consolidation of robust, comprehensive, equitable and resilient national health systems, based on principles of solidarity and equity; through comprehensive primary health care; proper financing; development, production and access to health supplies and technologies; collaborative health surveillance; information sharing; effective preparedness and response to health emergencies; private sector regulation; among others, with an intersectoral approach.

1.4. To support decision-making processes and development of public policies, including monitoring and evaluation of national health systems.

1.5. To incorporate a health equity perspective into all policies and activities considering universal access to health systems within the framework of the SDGs and the 2030 Agenda, which requires enhancing intersectoral and territorial approaches at global, national, and local levels with active community participation.

1.6. To promote transparency and communication of public health data and information, as a critical aspect to prevent misinformation and fake news.



Panel 4 speakers, chair and Rapporteur.

1.7. To implement recommendations raised by the Global Pandemic Preparedness Summit 2024 in Brazil, to strengthen collaborations between NPHIs related to PPR.

1.8. To implement the IANPHI Roadmap for Action on Health and Climate Change, which aims to foster intersectoral actions and to promote public health interventions supporting climate policies for adaptation and mitigation with an equity lens.

1.9. To create, implement and fund an appropriate and sustainable mechanism to monitor, promote and finance activities related to the implementation of the IANPHI Roadmap for Action on Health and Climate Change by the IANPHI Committee on Climate Change and Health.

1.10. To create a collaborative mechanism to monitor and evaluate the commitments defined herein, as well as the actions implemented related to G20 health priorities.

2. While committing to support their governments when requested and appropriate, they also call upon the G20 ministries of health to:

2.1. Support the G20 NPHIs Conference continuation in the upcoming G20 presidencies.

2.2. Welcome the IANPHI Roadmap for Action on Health and Climate Change, while recognizing it as a powerful tool for tackling the impacts of climate change on health.

2.3. Continue to support the establishment and strengthening of NPHIs, together with the United Nations and multilateral agencies, beyond other partners.

2.4. Guarantee to National Public Health Institutes legal and regulatory authorities, budgets and workforce to support their work, since NPHIs are critical to public health emergency preparedness and response.

2.5. Prioritize Primary Health Care, including investments in community health strategies, focusing on health promotion, disease prevention and comprehensive health care, without neglecting other levels of attention.

2.6. Promote evidence-based public policies for better population health and well-being that are climate-responsive, ethical and equity-driven, while avoiding stigmatization and discrimination based on age, gender, race, and ethnicity, among others.

2.7. Foster cooperation, collaboration and solidarity, strengthen communication and dialogue between national authorities and society, and promote community engagement that privileges the central role of communities and social movements.

2.8. Promote multi-stakeholder initiatives, including NPHIs, such as the G20 HWG Alliance for Local and Regional Production and Innovation and the G20 Global Alliance against Hunger and Poverty.

2.9. Promote data integration of health information systems among different entities, sectors and institutions, and encourage the use of advanced technologies, such as Artificial Intelligence, in disease surveillance and in health data analytics.

2.10. Consider the social determinants of health, like poverty and hunger, as set out through the Sustainable Development Goals (SDGs), while endorsing the 2030 Agenda proposed targets, as well as the recommendations and commitments of the UN Summit of the Future.

2.11. Actively participate in global health governance, reaching a consensus on the ongoing negotiations for the Pandemic Agreement within the Intergovernmental Negotiation Body; implementing the UN Political Declaration on AMR; effectively implementing the 2015 Paris Agreement; ensuring social participation in decision-making processes for health, in line with Resolution WHA77.2; and incorporating national health plans for Indigenous People, as outlined in Resolution WHA76.16.

2.12. Consider health as a bridge to peace, while coordinating global action to protect vulnerable populations, health workforce and health infrastructure during armed conflicts, recognizing the unequivocal physical and mental harm war causes to civilian populations, such as the recent anti-polio vaccination in Gaza.

2.13. Support the establishment of National Public Health Institutes (NPHIs) or Centers for Disease Control (CDCs) in regions lacking these institutions. These organizations are key to monitoring, preventing, and responding to public health threats, thereby protecting populations and advancing health equity and security. Investing in NPHIs and CDCs strengthens local healthcare systems and enhances global disease prevention efforts, par-

ticularly in developing regions, considering their responsibility for global sustainability.

2.14. Establish a regular monitoring and evaluation collaborative mechanism to track progress, identify areas for improvement and oversee the effective implementation of the commitments made and actions proposed by the G20.



Credits: José Ricardo de Freitas. B

Discussion of the Final Conference Declaration's Draft.

2.2 - CALL TO ACTION FOR FUTURE COLLABORATION

As raised during the entire Conference in different moments and contexts, **NPHIs should improve their collaboration, solidarity and cooperation** so that they can respond effectively to health emergencies when they arrive and build equitable and resilient health systems. NPHIs should also make a concerted effort to share the results of this Conference with their ministries of health, using the Final Declaration and this Final Report whenever appropriate, and asking especially for:

- o Being part of the country health delegation in the next G20 HWG during the South Africa presidency.
- o Supporting the inclusion of a paragraph in the Health Ministerial Declaration under negotiation that reflects the importance of this Conference and its fruitful outcomes, such as:
-“We welcome the G20 NPHIs Conference while recognizing NPHIs roles for implementing actions and suggestions raised by HWG, considering NPHIs recommendations and commitments stated in the Conference Final Declaration and supporting its continuation in the upcoming G20 presidencies.”

Considering the next G20 presidency by South Africa, IANPHI, FIOCRUZ and Africa CDC should work together with the National Institute for Communicable Diseases (NICD) from South Africa to:

- o Create key and valuable messages to advocate for including IANPHI in the list of international organizations that participate in the HWG meeting.
- o Support the organization of the second G20 NPHIs Conference.

This Conference starts an important movement that needs to be fueled and actively pushed forward by NPHIs so that they can save lives throughout the globe. Let’s do this together!

APPENDIX

1. Conference’s Conceptual Note and program

2. List of participants



Credits: José Ricardo de Freitas, Brizzi Produção

Discussion about coordinated actions after the G20 NPHIs Conference.

CREDITS

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DESIGN:

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 CONFERENCE OF THE **G20**
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 **BRAZIL 2024**