ENHANCING CAPACITY TO CONDUCT HEALTH RESEARCH, DEVELOPMENT, AND INNOVATION IN AFRICA: A CALL FOR STRATEGIC INVESTMENTS AND COLLABORATIVE OPPORTUNITIES

SIDE SESSION SUMMARY REPORT: AFRICA HEALTH AGENDA INTERNATIONAL CONFERENCE (AHAIC) 2025

MARCH 3RD 2025

KIGALI, RWANDA

AHRIDA
African Health Research Innovation and Development Alliance

1. Background

Africa faces unique public health challenges that require tailored solutions driven by research and innovation. However, the continent's capacity to conduct Health Research, Development, and Innovation (HRD&I) remains underdeveloped, hindered by limited resources, shortage of skilled researchers, scientists, insufficient funding, and fragmented collaborations. In many sub-Saharan African countries, there is a non-conducive environment for research: the legislative framework has not kept pace with new trends in research, such as genetics research, ethical conduct of clinical trials, material exchange, and intellectual property rights. These legislative gaps hamper multi-institutional research such as clinical trials. Building the necessary capacity to conduct HRD&I is critical for developing evidence-based solutions that address Africa's most pressing health issues and contribute to global health knowledge. African governments should recognize that funds allocated for research are a good investment. More appreciation of the benefits of research might lead to greater commitment to providing dedicated funding to national research budgets.

The Africa Health Research, Innovation and Development Alliance (AHRIDA), a collaboration among Amref Health Africa, Speak Up Africa, Southern Africa Health Technologies Advocacy Coalition (SAHTAC) and Coalition for Health Research and Development (CHReaD) was set up in March 2024. It aims to strengthen Africa's health research, development and innovation (HRD&I) policy, and resource capacity to accelerate the development of, access to, and uptake of innovations with the highest potential for health impact. This alliance works across three pillars: product manufacturing, financing, and capacity building, alongside research, policy advocacy, and communication to support all the three. AHRIDA is open to working with like-minded partners, and presents a huge opportunity for a more coordinated effort, aimed at ensuring an Africa-led and owned health research, development and innovation agenda.

On March 3rd 2025, AHRIDA convened a side session entitled, ***"Enhancing Capacity to Conduct Health Research, Development, and Innovation in Africa: A Call for Strategic Investments and Collaborative Opportunities".*** This was during the Africa Health Agenda International Conference (AHAIC) held in Kigali, Rwanda. The session underscored the urgent need to strengthen Africa's HRD&I capacity, through strategic investments, enhanced partnerships, and targeted interventions that can elevate the continent's HRD&I ecosystem.

2. Objectives

The objectives of the session were to:

I. Identify opportunities to strengthen Africa's capacity for HRD&I.
II. Map out strategic partnerships and collaborations among African health research and academic institutions to strengthen technical capabilities and innovation potential.
III. Document innovative strategies to increase domestic funding for HRD&I initiatives.
IV. Identify and share innovative strategies to attract and retain HRD&I talent within African institutions.
V. Identify emerging trends that are likely to shape the future of HRD&I in Africa.

3. Participants

The event attracted over 120 participants in person and over 500 participants virtually; including 8 distinguished speakers from Loncama Group, Africa Centers for Disease Control and Prevention (Africa CDC), Global Health European and Developing Countries Clinical Trials Partnership (EDCTP), Coalition for

Epidemic Preparedness Innovations (CEPI), the AURUM Institute, University of Southern California (Institute of Inequalities in Global Health) and Afrigen Biologics.

4. Session Structure

The session included a presentation of finding from a desktop review on the ***"Capacity to Conduct Health Research Development and Innovation in Africa",*** panel and plenary discussions.

5. Session Proceedings

Below is a summary of the proceedings:

Opening Remarks

Caroline Mbindyo, Chief Innovation Officer, Amref Health Africa

In her opening remarks and as the session moderator, Caroline cited Dr. Githinji Gitahi— Amref's Health Africa's Group Chief Executive Officer's statement during the AHAIC 2025 opening ceremony, ***"We are living in unprecedented, and not unexpected times".*** Carol said***, "Enhancing local investment in HRD&I is critical for Africa's autonomy, ownership and sustainability, more so when there is a lot of uncertainty in global health financing".***

To further emphasize the importance of investing in HRD&I, she cited H.E President Paul Kagame's statement during the opening ceremony of AHAIC, which read, ***"Africa cannot outsource its health security".***

Caroline highlighted AHRIDA as an important model that is leveraging partnerships and collaborations with SAHTAC –in Southern Africa, Speak Up Africa in Francophone West African, and CHreaD in East Africa. AHRIDA is an alliance for all, and open to all like-minded organizations to advocate for improving HRD&I in Africa.

Findings from the Desktop Review on Capacity to Conduct Health Research Development and Innovation in Africa

Nontsikelelo Mazibuko- Consultant, Loncama Group

Below is a summary of Nontsikelelo's presentation (*details are in the slide deck)*:

Gaps:

- Investment Shortfalls: African governments currently spend $4.5 billion annually in health infrastructure, despite a required $26 billion in the next decade;
- Research Output and Capacity: With 18.3% of the world's population, Africa produces less than 1% of the world's research output (Wits University, 2020). Only 4% total trials held in Africa in 2023
- Collaboration Challenges: African scientists often collaborate with European and American researchers, primarily due to limited access to advanced technologies and research infrastructure.
- Training, Language and Regulatory: Some countries are better equipped than others. Research does not guide policy; therefore, it is overlooked. Researchers are not always fluent in English (translating and validating data is expensive). Lack of policies, inconsistent standards and weak intellectual property rights.

Opportunities:

- Establishing equitable international research partnerships
- Focus on Local Context and Relevance
- Investing in Youth and Innovation/ Advocating for political support
- Robust Research Infrastructure/ Increase budget for health.

Best Practices:

- **Strong Collaborative networks:** international organizations, universities and NGOs. Increase funding, shared knowledge and research resources.
- **Focus on local context and relevance:** research focus on African diseases (Malaria, TB, HIV & AIDS and Ebola). Community engaged research.
- **Capacity building and investment in Human Capital:** African Research Excellence Fund. African Minds. African Institute for Health Research, Kenya Medical Research Institute, South African Medical Research Council.
- **Agile response to emerging health challenges:** through interventions of Africa CDC and implementing the Integrated Disease Surveillance and Response (IDSR) Framework. The Field Epidemiology Training Program (FETP) and strengthening lab diagnostic capacity. Development of RTS,S malaria vaccine was key milestone in Africa-led research.
- **Strong Leadership and vision:** African researchers are patriotic and pursue community goals.
- **Innovation in Health Technologies and solutions:** Mobile Health (mHealth), technology for disease surveillance. Indigenous knowledge and traditional medicine in research and healthcare systems.
- **Robust Infrastructure:** Through Africa CDC. Africa Development Bank Strategy for quality Health Infrastructure in Africa 2022-2030.
- **Policy support and government commitment:** Aus Science, Technology and Innovation Strategy for Africa.
- Improved access to research funding: the African Excellence Research Fund, South African National Research Foundation. Some researchers have been leveraging international donors for research that is equitable to Africa.
- **Private sector and Philanthropic contributions:** Science for Africa Foundation, EU Africa Rise, Fondation Merieux, BioNTech, Bill and Melinda Gates Foundation, Wellcome Trust.

The importance of building capacity for HRD&I in Africa:

- **Address Health Challenges:** Have homegrown solutions. Develop medication within the continent. Reduce over reliance on Global Health initiatives.
- **Improving Local Research Capacity**: African countries do not invest 2% of GDP to HRD&I and this hinders progress in the field.
- **Promoting Innovation in Health Technologies:** Develop low-cost, sustainable health technologies & innovation. Invest in the Innovation (i3) Africa Initiative and the Health Research and Innovation Strategy for Africa (HRISA) 2018-2030.
- **Enhancing Disease Prevention and Control:** Research into disease surveillance, early detection and public health interventions can lead to more effective and cost-effective health programs. Research-drive interventions like vaccination campaigns or vector control strategies have helped with malaria and polio.
- **Reducing Reliance in Global Health Initiatives:** African can generate research evidence that is relevant to Africa. Treatments would be localized. Reduce over reliance on external donors and donor funding.

Opportunities for collaboration:

- Academic and research institutions can partner with industry (pharma & biotech) to enhance capacity for HRD&I e.g. Tackling Infections to Benefit Africa (TIBA) for institutions in Ghana, Sudan, Rwanda, Uganda, Kenya, Tanzania, Zimbabwe, Botswana and South Africa and the United Kingdom. There is an opportunity to use the Pan-African Clinical Trials Registry (PACTR), the Coalition for Epidemic Preparedness Innovation (CEPI) and the African Medicines Agency (AMA).
- Use Science and Technology Parks to establish National Intellectual Property Management (NIPMOs).
- Industry and academic institutions can create programs to strengthen technical skills.
- Collaborations between academic researchers, governments, and industry players can facilitate the creation of data-driven strategies, tools, and technologies for disease control and prevention.
- Competitively, ensure access grants and funding programs from international and philanthropic funding sources aimed at addressing health issues unique to Africa. Consider- Africa Research and Innovation Commercialization Summit.
- Collaborations on Policy Advocacy and regulatory Alignment: Higher-income institutions can offer African partners online resources, statistical expertise, and database development through initiatives like the African Medicines Agency, African Pharmaceutical Technology Foundation, and African Vaccine Manufacturing Framework.

Gender disparities in HRD&I:

- There are still huge gender disparities between female and male in HRD&I.
- Only 24% of the top 200 universities in the world are led by females (Times Higher Education, 2023).
- Sub-Saharan Africa has 61% male first authors, 65% males as last authors and 66% males as single authors or research/academic materials (Baobeid, 2022).
- 62.8% of funding goes to males (in 15 countries studied), and who have a larger share of funding (Jackson et al., 2022).

Strategies for gender equity:

- Promote Gender-Inclusive Leadership.
- Increase Research Opportunities and Visibility for Women.
- Enhance Access to Funding for Women Researchers.
- Address Cultural and Societal Barriers.

Implementation of recommendations from the Desktop Review on Capacity to Conduct Health Research Development and Innovation in Africa

Dr. Mosoka Papa Fallah- Acting Director Science, Research and Innovation, Africa CDC

Dr. Mosoka raised the following during his discussions:

- Africa CDC's mandate is to enhance local manufacturing capacity that will achieve the goal of producing 60% of Africa's vaccines by 2040.
- Africa contributes 8% of the global population and 25% of infectious diseases.
- He observed that the ratio of scientists to people is very low. ***"In Africa it is estimated at 4 scientists: 1 million people in Africa, as opposed to 1 scientist: 400 people in developed countries".***
- The biggest challenge in Africa is African scientists working in silos. To address this, in November 2024, Africa CDC brought together 170 Scientist from 47 countries to create a framework that enhances coordination, governance and research ethics.
- There is need to send scientist to centers of excellence for mentorship programs. This for example, can contribute to enhancing and transform physicians to scientists (physician scientists).

- Scientists need to improve their advocacy. It is important for scientists to make politicians understand the importance of conducting HRD&I and its contribution to social economic development.
- It is important to identify local Africa based clinical research organizations (CROs) and NGOs, as a way of enhancing capacity in HRD&I.
- ***"Africa has a lot of data, but what it lacks is information".*** There is need to enhance the use of the available data to inform contextually appropriate HRD&I, and response to disease outbreaks.
- Africa CDC in collaboration with UNICEF, shipped the JYNNEOS Mpox vaccine, aimed at preventing the further spread of Mpox in the Democratic Republic of Congo (DRC).

Strategic partnerships and collaborations that African Health Research and Academic institutions can leverage to strengthening technical capabilities and innovation potential

Dr. Michael Makanga- Executive Director, Global Health EDCTP 3

- Dr. Makanga spoke about the need to embrace to the 3ps in HRD&I.

- ***"It is important to develop people/ a workforce that is highly competitive, understands the local landscape, and able to take on the leadership mantle".*** Global Health European and Developing Countries Clinical Trials Partnership (EDCTP) 3 has enhanced the capacity of more than 2,000 researchers in Africa to conduct research in Africa. These numbers grew during the COVID-19 response.

- Institutions should work on the continent and on **problems** that are relevant to local context. EDCTP launched a scheme of long-term regional networks of excellence in Africa, tailored to the to address local needs.
- EDCTP launched a call in 2025, aimed at enhancing networking and collaboration among institutions, to develop capacity for medical interventions and epidemic preparedness.
  - EDCTP set up genomics surveillance systems that have informed the Mpox response.
- Scaling up **people**/ workforce training. There is a call aimed at training epidemiologists, biostatisticians, and disease modelers to enhance disease preparedness and response. This builds on the collaboration with Africa CDC that trained 151 epidemiologists, and has been scaled up to more than 450 people.
- Systems development is pivotal to EDCTP: It has developed— the Pan Africa Clinical Trials Registry, supported the development of the Pan African Vaccines Regulators Platform, to ensure that regulators are adoptive to the regulatory environment and handle complex research in Africa.
- EDCTP believes that Artificial Intelligence (AI) will transform the clinical trials space. There is a call for proposals on out-of-the-box thinking and AI related innovations.

Innovative strategies to attract and retain HRD&I talent within African institutions, and how these best practices be shared across African countries

Dr Abebe Genetu Bayih- Local Manufacturing Coordinator, Africa CDC

Dr Abebe underscored the following:

- Highlighted Africa CDC's goal for local vaccine manufacturing (target for Africa to produce 60% of the vaccines needed by 2040). This is with a lens of End-to-End product development.

- To strengthen vaccine manufacturing in Africa, Africa CDC has developed a Framework for Action. Key in it is enhancing HR & D talent development in Africa. ***"If you don't invest in research and development today, you will not have a sustainable***

vaccine manufacturing capacity". Currently there are 25 vaccine manufacturing initiatives in Africa.

- All these are in different stages, some are advanced, while and others just starting. Vaccine manufacturing in Africa is mostly targeting the downstream strategy of Fill and Finish. There is need to strengthen the capacity and the workforce on the continent in End-to-End vaccine development.
- From an assessment done by Africa CDC to fulfill the production of 60% of the vaccines needed by 2040, currently there are only 3,000 skilled individuals for bio-manufacturing/ development in Africa. The capacity required is 12,000 individuals. This presents a big gap.
- Africa needs to prioritize investing in HR&D capacity through Masters, and PhD programs
- Need to establish infrastructure, policy frameworks, and incentive mechanisms for research scientists that can attract and retain talent on the continent. Africa CDC has established regional capability and capacity networks (networks of existing research institutes that will offer practical trainings in bio-manufacturing). ***"1/3 of African scientists live and work in the developed countries"***

Afrigen's innovative formulation of vaccine adjuvants, and how is this contributing to strengthening Africa's Health R&D capacity

Dr. Elize Willenburg - Executive Manager, Formulation Innovation and R&D Operations, Afrigen Biologics

Dr. Willenburg gave a brief background of Afrigen Biologics, as being a Biotech start-up company based in Cape Town South Africa, and is a leading innovator in the field of medical biotechnology in Africa, dedicated to advancing healthcare through cutting-edge research and development. ***" Afrigen aims to bring new tech for Africa in Africa"***

- It is working on setting up an End-to-End facility.
- It is also working with Institut Pasteur Dakar on mRNA technology transfer.
- She explained the importance of why vaccines need adjuvants:
  - Formulation is critical for vaccine development, to elicit immune response.
  - It helps in enhancing understanding of the interactions between vaccines and antigens.
  - Important for the mRNA technology and knowledge transfer
- Since 75% of known diseases are of animal origin and 60% of these affect humans, Afrigen promotes the One Health concept in vaccine development. It recognizes the relationship among human health, animal health and the environment, and how they interplay.

Innovative financing and partnership models that can help create a skilled workforce and sustainable research environments, in this era of dwindling funding from the global north

Prof. Laura Ferguson- Director of Research, Institute of Inequalities in Global Health, University of Southern California (USC)

Prof. Ferguson underscored the AHAIC 2025 theme, ***"Connected for change: Addressing Social-Ecological dynamics of Health"***, to inform her perspectives. In her discussions, she emphasized the following:

- Health research funding should consider basic and social science capacity enhancement.
- Partnership models: ***"Every partnership should be of benefit to every partner"***.
- It is important to identify who decides which health research, and what products to be developed.
- Need to be cognizant of local needs and voices in health research and development.

- There is need to address inequitable sharing of research proceeds (authorships and research profits).
- Ensure synergies and comparative advantages in health research and development collaborations. Cited the collaboration among the University of South California, Amref Health Africa, the Kenya Ministry of Health, and Microsoft to address childhood malnutrition, as a good model that has resulted into the development of a dash board to identify causes of childhood malnutrition within 6 months of birth.
- African universities must be central to health research and development, by leveraging South-South and North to South collaborations.
- Under representation of women in Africa in health research and development: Provide scholarships to young and promising women. Also need to mentor young female researchers.
  Take aways: ***"The best innovations are those that work for the people that need them most"***. Ensure the permeation of equity concerns to all those that need them most in health research and development.

Global Health Initiatives (GHI) and how Africa can leverage them for HRD&I advancement

Shingai Machingaidze- Head of Africa Strategy and Engagement, Coalition for Epidemic Preparedness Innovations (CEPI)

Shingai cited the Lusaka Agenda that was launched in December 2023, to shape Global Health initiatives. This agenda outlines five key shifts:

- Make a stronger contribution to primary health care (PHC) by effectively strengthening systems for health.
- Play a catalytic role towards sustainable, domestically-financed health services and public health functions.
- Strengthen joint approaches for achieving equity in health outcomes.
- Achieve strategic and operational coherence.
- Coordinate approaches to products, research and development (R&D), and regional manufacturing to address market and policy failures in global health.

- Emphasized the importance of leveraging the Lusaka Agenda to improve health research, development and innovation.
- Africa needs to hold Global Health Initiatives accountable to implementing these shifts.
- Need to coordinate better as a continent to address disparities in health research and development.
- African countries need to develop strategies for how to communicate Global Health Initiatives, and how they can be domesticated.
- It is important to explore ways of holding African governments accountable to honor counterpart investments in health research and development.

The emerging trends that are likely to shape the future of health research and innovation in Africa

Dr. Lucy A Chimoyi- Epidemiologist, The Aurum Institute, Johannesburg, South Africa

In her discussions, Dr. Chimoyi mentioned the following:

- The need to take advantage of low hanging fruits such as digital health and telemedicine.
- There's been a progress in internet coverage on the continent. But we still have a great divide. Some countries are reporting more than 90% internet coverage, and some actually just less than 20%.
- There is great penetration of mobile phones, especially the smartphones—standing at an average of 79% coverage.

- With increasing coverage of mobile technology, there will be situations where more virtual medical consultations and remote monitoring of health outcomes will be allowed.
- Mobile phones can also be used to track health data. Most sophisticated smartphones can be used to promote preventive care, and to also empower patients to manage the chronic diseases (patient selfcare).
- Some studies have shown up to 47% reduction in hospital visits, due to patient selfcare. There are very many research opportunities that can support and provide more evidence to implement digital technology in Africa.
- Artificial Intelligence (AI) and machine learning in healthcare delivery can also be leveraged to improve health delivery, as it has proven in some of the developed countries. It can also lead to better diagnostics and early disease detection, when you incorporate the function of predictive analysis, for instance DeepMind AI.
- DeepMind AI was used to detect breast cancer of fatal strains, when performed on thousands of mammograms. It was able to accurately identify 89% of the breast cancer cases, compared to what a normal radiologist could do.
- Unfortunately, in Africa, it is estimated that we have 0.2 doctors for every 1,000 individuals, instead of the WHO recommended 2.5 doctors for 1,000 individuals. AI is thus one way that is going to revolutionize the health R&D in Africa. This means that up-to-date machine learning courses need to be offered in the universities.
- Health data and big data analytics: Much as Africa is getting into the electronic health records space, we are still far behind the rest of the world. We definitely need to improve how we collect and manage our health data. We should strive to move away from paper-based and collect our data electronically.
- Another emerging trend is precision medicine that requires more skills and expertise, more so when comes to the genomics research.

Launch and AHRIDA

Rachel Wood, Senior Programs Officer- Gates Foundation

In her remarks, Rachel underscored the importance of establishing AHRIDA. She mentioned that:

- The Gates Foundation is supportive of AHRIDA as a great example of collaborative partnership in HRD&I advocacy.
- Each partner organization comes with its own comparative advantage in the HRD&I space.
- There is a huge decrease in funding globally, and ARHIDA comes in to fill in the gap to advocate to governments in Africa, for more domestic resourcing for HRD&I, and removing barriers to the uptake of health innovations.
- The intent of AHRIDA is to build champions for HRD&I across Africa.