



PROMOTING HEALTH INFRASTRUCTURE IN AFRICA:

BRIDGING THE DIGITAL DIVIDE

WEBINAR
REPORT



INTRODUCTION

Over the past decade, Africa has proven its ability and willingness to utilize foreign innovations and develop domestic technologies. In this respect the continent has several factors in its favor:

- The youngest population in the world, with a median age of 19.7. Therefore, the continent has a large population of young people looking for a chance to break into the technology industry.
- The continent is entering the digital market at an ideal time, as it can take advantage of existing globalized internet technology. It can directly adopt and improve upon existing technologies, such as mobile money platforms - one of which was first developed in Sub-Saharan Africa. Sub-Saharan Africa will have more than 130 million new mobile subscribers by 2025, and 272 million Africans are currently connected to the internet through their phones.
- Tech education is booming on the continent. Multiple universities in Africa now offer software engineering, computer science, and other tech programs that compete with top universities around the world. Technology accelerators are rapidly growing too.
- With its late entry into the global tech economy, it can learn from earlier developmental challenges and oversights. Nairobi is already home to Africa's "Silicon Savannah" and Africa is rapidly building its own tech economy.
- Africa is a rich continent in many ways (mineral resources), but has the difficult task of translating what is underground to improving the health of its people.

It is therefore evident that Africa is ripe for digital health solutions. The COVID-19 pandemic has exponentially accelerated the need for e-health, particularly for e-pharmacy, tele-consulting, tele-radiology, and tele-pathology platforms and e-payment solutions, which are all in infancy in the region. These current deficits comprise the digital divide in the provision of healthcare in Africa. Working with global innovation hubs and through partnership with leaders in this arena, Africa can thrive in its healthcare management and in promoting the vision of universal health coverage for the continent.

Chief Guest Commentary:



Dr. Margaret Anyetei-Agama,
Division Head of Health, Nutrition
and Population, The African Union

The Africa Union Commission is addressing digital health as part of the AU Digital Transformation Strategy for Africa. The health component of the strategy is the provision of universal access to affordable, high-speed broadband communications technology to assist health systems to provide higher quality and more focused patient care in rural and remote areas. The Commission is currently undertaking an assessment of the status of the use of digital health in its 55 member states. The findings of the assessment shall advise the Commission and its member states as to what the next steps should be in the rollout of the Digital Transformation Strategy. The COVID-19 pandemic and consequential lockdowns and border closures have brought the need for digital health strategies to the forefront for the continent.



Aday Adetosoye,
Director, Office of Global Health,
Health Resources and Services
Administration (HRSA), US Department
of Health and Human Services

HRSA is the primary federal agency tasked with combating health disparities and promoting health equity for underserved, geographically isolated, and medically vulnerable populations in the United States. From supporting primary care service delivery, to financial relief for hospitals and providers on the frontlines of the pandemic, HRSA programs reach millions of Americans at risk and in need, including families, pregnant women, children, people living with HIV, and hard-to-reach populations. HRSA accomplishes this through grants to more than 3,000 awardees, including community and faith-based organizations colleges and universities; hospitals; state, local, and tribal governments; and private entities. HRSA's direct support to, and close ties with, community, local, and state organizations enables the agency to respond to urgent public health needs. The Office of Global Health (OGH), which is part of the Office of the Administrator, is the primary point of contact for global health engagement at HRSA.

OGH facilitates a mutual exchange of expertise and seeks global solutions in order to strengthen existing health systems and to ensure health services are accessible, equitable, and staffed with high quality personnel, especially for vulnerable and resource poor communities. OGH's partnerships with governments, multilateral and bilateral organizations, as well as the private sector, aim to improve the health of the US and the world. They engage with the President's Emergency Plan for AIDS Relief and US border health, among other things.

Given the nature of the work performed by OGH at HRSA and the topic of this summit:

- There has been a lot of discussion in both the public and private sectors and there have been some successful public-private partnerships (PPP) in the past.

- It is time, however, to discuss sustainable solutions that protect investments and ensure efficient delivery of high-quality healthcare.

- The advent of COVID-19 presented opportunities for virtual engagement that were almost unimaginable a short year ago; it is important to continue to explore what else we can do in the areas of telehealth and ensure that vulnerable populations are not sidelined, but are still able to connect with the right healthcare provider at the right time.

Barriers to healthcare in many African countries include:

- Poverty
- Shortage of qualified health personnel
- Socio-cultural norms or practices
- Transportation

Additional Systemic Barriers During COVID-19

- Hospitals at full capacity
- Diagnostic systems overwhelmed
- Extremely limited resources
- Inability to track data in real time
- Other health conditions de-prioritized
- Technology capacity limited-broadband expenses
- Fear or reluctance by patients to visit hospitals

Here's where tele-health comes in. Telehealth simply refers to the provision of remote clinical and non-clinical services. It has been proven effective in reducing and/or eliminating the distance traveled to seek healthcare, reduced transportation and related costs for patients, can be non-disruptive to key social/family activities, and reduces stigma and discrimination sometimes faced in the facility.

HRSA has been a champion of telehealth because of its ability to reach people where they are. In one of our health centers, patients who utilized telehealth to receive their HIV-related care demonstrated

above 91% of viral load suppression, compared to 84% among their counterparts who attended the clinic in person.

HRSA programs that currently support tele-health activities in Sub-Saharan Africa include amongst others the Skills Sharing Project is connected to HRSA-funded healthcare providers with counterparts in selected African countries. Providers engaged in real-time mentoring, brainstorming, and sharing of proven tools and interventions to ensure the provision of high-quality healthcare services. Illustrative results indicate improvements in patient retention, specifically viral load turnaround times, successful switching of patients to better meds, improvements in pediatric pill swallowing, and consistency in quality improvement outcomes.

How can stakeholders replicate and sustain this type of success in Africa? Who are the right players to be brought to the table for meaningful and actionable conversations? There is a need for increased involvement from the private sector. There is a great need to use cutting-edge technology and make it available for health as a means of bridging the divide. This forum today is a fantastic example of meaningful collaborations and it is my hope that key interlocutors here will continue to recognize and address the urgent need for how to bridge the digital divide in African health infrastructure and ensure long-term gains for populations across the continent.

The Hosts:

The Africa Healthcare Federation (AHF), co-hosting the symposium, represents the private sector voice for Africa, creating solutions that address market challenges, while also harnessing private sector potential to accelerate achievement of universal health coverage. With membership from all regions of the continent, it provided an influential audience for the broad-based deliberations and opportunities in the symposium.

[Dr. Amit Thakker, President, AHF and Executive Chairman, Africa Health Business](#)



spoke of economic and product solution ties that have existed with the US and Africa and encouraged ongoing dialogue for mutual benefit. The USA Healthcare Alliance (USAHA) has a mission to expand overseas export opportunities for US companies through identifying, qualifying, and executing health

infrastructure projects. USAHA sponsored this informative symposium to create awareness of the current state of health infrastructure in Africa and to provide a platform for fruitful discussions on available partnerships and projects to leverage and scale health infrastructure for Africa. USAHA has key official partnerships with the US Government including the US International Development Finance Corporation (DFC) and the US Department of Commerce, as well as Exim Bank.

[Dr. Trevor Gunn, Chair and Founder, USAHA and Vice President, International Relations, Medtronic](#)



often focused on competition in business. He expounded on the benefits of collaboration, emphasized the importance of working with governments and the existing public-private partnerships between the US Department of Commerce and the Commerce Department of

Africa, the role of the DFC with its tight healthcare focus and that of Exim Bank.

The Session:

Speakers from technology, trade, and healthcare/social impact industries discussed these thematic points:

1. The central issues facing the African continent in the digital healthcare sphere and the products and initiatives that are needed for Africa to achieve its healthcare vision.
2. Healthcare infrastructure projects in the region which can foster collaboration between US companies and African companies, government, and organizations.
3. Actions attendees can take in order to involve themselves in these projects and to help bridge the digital divide.

Who better than [Professor Khama Rogo of the African Institute for Healthcare Transformation \(AIHT\)](#) to moderate such a gripping symposium? AIHT

is a union between the Massachusetts General Hospital (MGH) Division of Global Health and Human Rights, the Kenyan medical institutions of Sagam Community Hospital

(SCH), and the Kisumu Medical and Education Trust (KMET). Through this partnership, AIHT aims to expand the availability of healthcare equipment, training, and experience across nations in need. AIHT specifically looks to areas with limited natural resources and limited access to large cities or institutions. AIHT boasts AIHTSagam: the African Innovative Health Transformation Medical Knowledge HUB.



The Panelists:

Microsoft's Global Chief Medical Officer, [Dr. David Rhew](#) spoke about Microsoft's initiatives on the continent and the role they can continue to play in Africa. The Africa CDC, in collaboration with Microsoft and other partners, has launched the Africa Pathogen Genomics Initiative in a US\$100 million, four-year partnership to expand



access to next-generation genomic sequencing tools and expertise designed to strengthen public health surveillance and laboratory networks across Africa. Microsoft is also expanding access to affordable broadband in Africa and other parts of the world through its Airband initiative, which include partnerships, both public and private, to provide hotspots in remote locations, reaching 14 million people globally, including in Africa.

Other areas of focus have been to reach those that are most vulnerable through supply chain and distribution solutions, such as providing vaccines to individuals at highest risk, a COVID-19 BOT that captures key data to ensure patients are triaged well, and tele-health solutions through Microsoft Teams.

Discussions ensued about Google Loons, where African countries were to receive balloons to provide broadband, specially manufactured to within USD300-800.

The BroadReach Group has spent the last 18 years working across emerging markets to improve large-scale healthcare delivery and outcomes using technology and innovation. They are the creators of the award-winning Vantage technology platform. Built on the Microsoft Azure cloud and integrated into Microsoft teams, Vantage is a cloud-based enterprise data, decision support, and workflow population health platform that allows countries to harness the power of data across multiple disparate systems. It transforms data into actionable insights and guides actors at every level of the health system to implement their tasks with fidelity according to local protocols and best practices. Vantage enables countries to maximize on their scarce resources by ensuring that every hour and every dollar is being spent in the most effective way possible and by improving program governance and accountability.

BroadReach is a gold-level Microsoft global co-sell partner. [Dr. Ernest Darkoh-Ampem, Founding Partner, Broad Reach Healthcare](#) spoke on this panel about how big data approaches, analytics, and technology-enabled management solutions can transform healthcare delivery and improve outcomes in Africa. He spoke about deploying resources customized to needs and that implementation was the biggest stumbling block before even scaling. The benefits of collating geolocations for households and their health status from community screening campaigns can be further used for vaccination programs rather than introducing new data collection systems. Government and private sector strengths should be leveraged, as the public sector has access to the masses while the private sector has agility and speed. It is important to practically tackle the obstacles rather than delve into bureaucracies.



The US Trade and Development Agency (USTDA) is a US Government foreign assistance agency focused on supporting commercial partnerships between US providers of key technologies in healthcare, IT, and other sectors and local public and private sector project sponsors globally. [Carl B. Kress, Regional Director for North Africa and Co-Head of the agency's Healthcare Sector Team](#) spoke on how USTDA's project planning tools and events can foster collaborations

to expand access to quality healthcare in Africa, where developing countries can achieve development needs through access to cutting-edge technologies from the US. USTDA has funded technology workshops, conferences, and reverse trade missions (RTM) through the energy, transportation, ICT, telecom, health, and agriculture sectors. He lauded Microsoft's



African initiatives in many of these sectors. USTDA has also supported global procurement initiatives through multinational development banks, for least-cost best-value sustainable projects, including for accessible power and broadband. They provide grant funding for feasibility studies to the financing stage. Some examples

are the Lagos University and Teaching Hospital and Cancer Centre benefitting from Halcyon equipment with 50% less electricity requirement and the Ugandan Ministry of Health receiving radiotherapy training on treatment for cancer through partnerships with the US. The COVID-19 pandemic has reinforced the need for quality healthcare infrastructure. Mr. Kress called for enhanced partnerships with African countries, promoting RTM with hospital and health facility visits and exploring novel solutions across the full spectrum of healthcare facets for the region.

access.mobile has a background working with both the private and public sector in African countries. After helping the Executive Clinic at the Nairobi Hospital reduce missed appointments by 84% and increase patient intake by 220%, access.mobile entered South Africa in 2019 in support of BroadReach's work in the USAID APACE Program. Since the project began, access.mobile has innovated new data-pipeline processes while navigating an evolving regulatory landscape around informed consent and the COVID-19 pandemic to successfully demonstrate improved patient return to care at scale, through intelligent mobile patient engagement. This work has directly impacted hundreds of thousands of people. In 2020, access.mobile expanded its Sub-Saharan footprint in support of the COVID-19 response and digital transformation for a SADC Adolescent Reproductive Health, Rights, and Behaviour program in Lesotho, Malawi, Zambia, and Zimbabwe. [access.mobile's Kaakpema Yelapaala](#) contributed to the session with further anecdotes on bridging the digital divide in Africa and future initiatives through partnerships with BroadReach and Microsoft in mobile/telecoms across Africa through SMS, WhatsApp, and USSD-based platforms. The partners had laid the foundation for access and partnerships scaled the approach. He gave the example of Vantage foundations data infrastructure and how this was scaled further.



regulation compliance, and infrastructure for scaling. There is a generational shift; the African population is young, and the most active users and adoption of digital health solutions should be easy. We must operationalize compliance including scaling informed consent. An interesting observation was the opt-in champions for health demography data collection rolled out in the urban setting in South Africa where of 360,000 targets across all clinics, 270,000 accepted to receive messages in the data collection process. 75% preferred the paper-based mode for data collection with the government logo compared to the 25% that used the USSD platform for direct data flow or collection. The lesson trust supersedes efficiency.

He stated that there was no shortage of digital health innovations, but that the challenges were operational in nature including data management, need for local cloud systems,

Discussions:

The Question:

“Twenty years ago, the definition of infrastructure was brick, mortar, and equipment. Now, finally, we speak of digital infrastructure. The youth are not looking to enter brick and mortar for their health solutions. The COVID-19 pandemic notwithstanding, we still have to manage health/wellness and disease equitably. The “infrastructure” has to manage both in tandem. We need to be cognizant of these points when looking for the best fit for Africa, considering governance structures, the environment, and the population’s understanding and perception.

The greatest proportion of investment in health in Africa is out-of-pocket; the State is the other investor. The third big investors are donor organizations and NGOs, in the form of projects which are time limited. This is what Africa suffers from; projects are time-limited and not designed for sustainability.

How does a business factor these aspects into their plans?

When we speak of universal health coverage (UHC) and digital health, you catch the ear of the Minister for Health. Question to be asked is: are we in that space to communicate with governments? ”

Responses:

David:

PPPs should take advantage of existing opportunities where funding and interest may exist, such as with the drive for vaccine equity around the world. Partnerships to channel delivery of vaccines; build infrastructure for the African landscape, piggy-backing on the drive from COVID-19. The Africa Pathogen Genomics Initiative is a prime example of one such initiative.

Ernest:

There are systemic challenges. BroadReach spent 90% of the time dealing with these challenges. The dynamics and environment in the continent are prohibitive, with red-tape and bureaucracy. There is no shortage of investors and innovators. We must lay down access first, such as through broadband, and impact policy first. Applicability matters. What is the business problem? And then strategize on the technology that is needed. Having the right mix of players, thinkers, and influencers. We need the right drivers.

The Question:

“The most successful sector in Africa has been the breweries. What can we learn from them?”

Response:

Asian investors have been into Africa. The US has also impacted through HIV programs, but many are short-term and not sustainable. We need longer term, sustainable programs through PPPs uniquely tailored to the needs of the institution, city, or region. There are layered issues that require integration of several systems.

The Question:

“Every challenge has an opportunity. We have had the Asian Summit and now the US summit. Comments from the hosts:”

Response:

Amit:

Asia has focused on Pharma, APIs, and medical tourism. With the US, the urgent need for technology enhancement is looming and should be taken advantage of.

Trevor:

What is the next great idea? The threshold to innovation is not that high. Meaning we don't know where the next great innovation is coming from. It could be from Africa. Designing around the cultural norms should be a key take away from this forum.

Participant commentary:

Dr Susi Dattenberg Doyle

Greeting from African Development Bank Group. I manage the healthcare investments across the continent. Amazon Web Services have three hyper-scale data centers in Cape Town, South Africa as well.

Dear Margret, really sorry to miss you. I represent right for education R:Ed Africa's largest independent social media page. We reach 10m ppl weekly in 45 African countries age range 15-30. How can we support your work and increase the reach of health care?

Mwanga

My views in digital system is letting the patients benefit from it at urgency of seeking health care at time of in need of it. I real appreciate the innovation which is going on for Africa so that our patients will benefit from it.

Together we can overcome the challenges as it requires cooperation in financial aspects. Banks in Africa are doing better and I believe even in health care systems we shall succeed on digitalizing the healthcare system and make it beneficial to our patients.

Tarekegn Sarbessa

Majority of the health facility building design doesn't take in to consideration and prepare a space which is suitable to adopt the digitalization system. This makes it difficult to digitalize with a small budget rather requires huge sums of money. I am a physician from Ethiopia and have been involved in one of digital health application. We have been making use of tele medicine for consultation service among senior and specialist physician and junior physician found far away. The major challenge was the poor infrastructure and inconvenience of media of communication. The technology is there but how do bring to the health system. THE POLICY IS NOT WELCOMING IN MAJORITY OF THE CASE

Lynsey Stewart-Isherwood

One of our challenges in Africa is the cost of data for patients and healthcare workers to access real-time data on mobile smart devices, to enable empowerment and ownership of their own health. The technology is available, but not universally accessible. I agree with Dr Darkoh the bureaucracy and amount of red tape in our government offices is often times a hindrance to health innovation. Thank you for the informative webinar.

Salim Hasham

One trend to Kama's point is that while USA is late to the party, there is now a LOT of activity in USA inbound investment in many healthcare sectors in Africa. Given bureaucracy and government is ALWAYS going to be challenging, the question can be how private sector can work to break the barriers while building relationships with government.

Neal Kovach

Hi Everyone this is Neal Kovach from the American College of Cardiology. I wanted to thank everyone for such wonderful insights today. We work with health systems across Africa to benchmark and improve their cardiovascular care and have been increasingly integrating digital health tools to make those efforts more effective. So much of what's been said today has resonated with our team. Really appreciate this forum. For anyone working in cardiovascular health my email is nkovach@acc.org.

Participant commentary:

Brian

Listening with great interest .What strikes me is the obstacles you all talk about are not only in Africa. Sometimes to solve a National problem you have to take action in exporting the many frugal innovations which you have and make the world aware of the amazing work you have done Important to stand tall ,bring practical solutions to the world. Made in Africa needs to become a real endorsement We are happy to help brian@echalliance.com

David Dixon

Hi team, great discussion! My partners are building a platform that could be very beneficial to address the issues outlined by this panel around digital infrastructure and connectivity.

Miriam Nkangu

Thank you all for this wonderful presentation!

Elizabeth Opondo

This was an excellent session. Thank you very much



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