

Establishing the Africa Centres for Disease Control and Prevention: the upside of a crisis

John Nkengasong, the first Director of the Africa CDC, and colleagues, discuss their plans to strengthen Africa's ability to take strategic control of its public health challenge

An historic perspective of establishing the Africa CDC

The Ebola Virus Disease (EVD) crisis^{1,2} in West Africa accelerated the establishment of the Africa Centres for Diseases Control and Prevention (Africa CDC), which was officially launched in Addis Ababa, Ethiopia on 31 January 2017, by African Heads of States and the leadership of the African Union (AU) Commission. By conceiving and launching the Africa CDC, African leadership leveraged the EVD public health crisis that exposed the weakness of the health systems in the affected countries, and did not waste the opportunity. Historically, several public health agencies were established in the aftermath of severe and impactful health emergencies and crisis that necessitated an efficient response. For instance, the creation of the US CDC in 1946, following malaria outbreaks; the China CDC in 2002, the Public Health Agency of Canada in 2003, and European CDC in 2003 were established on the heels of the outbreak of Severe Acute Respiratory Syndrome (SARS).³

The resolve to establish a new continental African public health agency started in July 2013 at the African Union Special Summit on HIV, Tuberculosis (TB) and Malaria in Abuja, in which African leaders recognised the need for an Africa CDC to conduct life-saving research on priority health problems and to serve as a platform to share knowledge and build capacity in responding to public health emergencies and threats in Africa. In January 2014, these African leaders again re-affirmed their support for the Africa CDC. This was followed by commitment from African Ministers of Health (jointly convened by the AU and World Health Organization (WHO), Luanda, Angola (April 2014)), to provide technical support to the Africa CDC. Then in September 2014, at an assembly devoted to responding to the Ebola outbreak, African leaders formally endorsed an accelerated timeline to launch the Africa CDC, together with the five regional centres, by mid-2015. The new resolution expanded the mandate for the Africa CDC to include strengthening of early warning systems, timely and effective response health emergencies, and the coordination and harmonisation of domestic health regulations and interventions as well as the dissemination of best practices.

Several compelling reasons argue for the establish-

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ment of the Africa CDC:

1. Rapid population growth leading to increased and rapid population movement across the continent and the world (the estimated population of Africa was 280 million in 1960 and 1.2 billion in 2016, and will be about 2.9 billion by 2050);⁴
2. Existing endemic (HIV, TB, and Malaria), emerging infectious pathogens, and the ascendance of antimicrobial resistance (AMR);⁵
3. Increasing incidence of non-communicable diseases and injuries;⁶
4. Persistently high maternal mortality rates;
5. Threats posed by environmental toxins.

If successfully implemented, the Africa CDC will be instrumental in assisting the AU to achieve the health goals stated in its Agenda 2063, which is a road map for Africa's growth and development.⁷ Agenda 2063 seeks for every citizen to have full access to comprehensive, affordable and quality healthcare services; universal access to sexual and reproductive health and rights information; and elimination of neglected tropical diseases, all communicable and infectious diseases, such as Ebola. The Agenda also calls for robust integrated systems to significantly reduce non-communicable and lifestyle-related diseases (including obesity, diabetes, cardiovascular conditions). It also strives to achieve zero deaths from HIV/AIDS, malaria and TB. Working closely with the WHO, the Africa CDC will support African countries to achieve these health aspirations and reach the universal health targets established through the International Health Regulations, Sustainable Development Goals, and Universal Health Coverage.

Africa CDC's mandate, mission, and strategic goals

The Africa CDC will provide strategic direction and promote public health practice within AU member states through capacity building, minimisation of health inequalities, promoting continuous quality improvement in the delivery of public health services as well in the prevention of public health emergencies and threats, through partnerships, science, policy, and data-driven interventions and programmes. The Africa CDC's five strategic pillars include:

1. Disease surveillance and intelligence;
2. Innovative information systems, with a focus on improved capacity improved public health decision making and action;
3. Establish functional and linked clinical and public health laboratory networks in the five geographic

- sub-regions of Africa;
- 4. Support member states to develop public health emergency preparedness and response plans;
- 5. Strengthen public health science and institutes for improve decision making and practice.

Enablers for the Africa CDC

In support of the five strategic pillars, the Africa CDC will develop innovative programmes in the areas of:

1. Competency-based workforce development through the auspices of a multi-dimensional Africa Public Health Corps: field-based epidemiology and laboratory leadership programmes, community healthcare, volunteer public health rapid responders, public health fellowship and scholar programmes, and public health informatics;
2. Strategic partnership with the private sector that promotes public health systems strengthening as an investment, not a cost, including innovative approaches to financing of public health activities;
3. Pandemic preparedness including evidence-based governance of vaccines and diagnostics during emergencies;
4. Innovative approaches to lift-frog implementation of public health programmes;
5. Using the unique location of the Africa CDC at the AU to promote public health diplomacy.

Africa CDC's operating model and health security strategy

In 1971 Julian Hart⁸ postulated the inverse care law whereby the availability of good medical or social care tends to vary inversely with the need of the population served; this law applies wholly to public health needs in Africa. The Africa CDC will seek to reverse this phenomenon through the close linkage of its Addis Ababa headquarters to five Regional Collaborating Centres (RCCs) in Egypt, Nigeria, Gabon, Zambia, and Kenya, respectively. Each RCC will be equipped with laboratories with advanced diagnostic capacity to rapidly detect known and unknown pathogens. Each Africa CDC RCC will house a Regional Integrated Surveillance and Laboratory Network (Africa CDC RISLNET) to leverage all available public health assets in their respective regions, including universities, national public health institutes, private laboratories, centres of excellence, non-governmental organisations (NGOs), and veterinary networks. The Africa CDC RISLNET offers a platform architecture to implement Africa CDC's five-year strategic plan, which was recently endorsed by its Governing Board in March 2017. Between 2017 and 2018, as part of the RISLNET activities, Africa CDC will support countries and regions to map existing surveillance and laboratory networks, including private laboratories, in order to provide institutional frameworks and governance to these entities. Africa CDC is also committed to combating resistance to antibiotics, which may cause about four million deaths per year in Africa by 2050.⁹ To begin to address this severe threat, Africa CDC also launched the Antimicrobial Resistance Surveillance Network (Africa CDC AMRSNET).¹⁰ This new network will work closely with the WHO Global Antimicrobial Resistance Surveil-

lance Systems to strengthen continental surveillance by a focus on regional task-based and structured mentorship programmes. Africa CDC will use proven models of medical education to build a community of practice to fight antimicrobial resistance, providing better care to more people, right where they live. Additionally, the Africa CDC will advocate and promote the establishment or strengthening of National Public Health Institutes (NPHIs) in each member state, resulting in an African Public Health Network (APHN) of NPHIs. These institutions can serve as coordinators of the One Health approach to disease control and prevention including the fight against AMR, the effect of climate change and disease outcomes, and coordinating engagements with ministries of agriculture, health, communications, defense, wildlife, and communication. The operating model outlined above, if well implemented, will constitute a practical Africa health security strategy (AHSS).

Leveraging public health assets on the continent

The Africa CDC will work in close collaboration with the WHO and other public health bodies to better coordinate efforts and resources, and create synergies to efficiently respond to disease threats on the continent. WHO and the AU Commission have signed a framework for collaboration to guide both institutions to leverage each other's strengths to improve disease management in Africa in several areas: strengthening capacity for international health relations; improve surveillance; investigation and emergency responses, including surge capacity and stockpiles, and communication and management of public health events. In addition, the Africa CDC will seek to strengthen close partnerships with NGOs including amongst others the Africa Medical Research Foundation, African Field Epidemiology Network, and the African Society for Laboratory Medicine.

Because it is now clear that disease



outbreaks in Africa constitute national, economic, and health security threats, which can quickly evolve to global health crises, the Africa CDC will also work to develop frameworks that will guide donors and technical partners to contribute to the implementation of disease prevention and control activities with specific targets and matrix. It's



The recent Ebola outbreak: a safe and dignified burial in Liberia, by UNMEER via Flickr. <https://www.flickr.com/photos/unmeer/16194422410>

public health diplomacy role will be critical in advocating and promoting the AHSS, as an enabler and key partner in defining a continental dimension and focus of the global health security agenda.

In sum, the recent EVD pandemic was devastating to the continent and clearly calls to action for greater investment and expediency in strengthening national public health systems using innovative approaches and partnerships.^{11,12} It also provided the upside of a crisis by establishing the Africa CDC. The success of the Africa CDC, as a continental leader in public health, will be defined by collective commitment, accountability, and shared responsibilities including the ability to develop the right partnerships with governments, philanthropic organisations, and the private business sector. Several stakeholders at the symposium to launch of the Africa CDC strategic plan in Addis Ababa in March 2017 largely supported this sentiment.¹³ This inclusive approach will enable the Africa CDC to fill a unique niche in a public health ecosystem that increasingly requires expeditious and impactful interventions, requiring a rapid acquisition of accurate, precise, and critical public health surveillance data linked to joint response capabilities, to mitigate existing gaps in response that has traditionally characterised public health events on the African continent. Continuous commitment by members states to fund the Africa CDC will be critical to making it a truly African-owned, sustained, trustworthy, and credible organisation that can quickly establish the operational model outlined above

and become the cornerstone of the AHSS.

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