



FUTURE AFRICA FORUM

State of Play: Pandemic Preparedness and Response in Africa

24 April 2022



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Africa Pandemic Resilience is a joint initiative between
Future Africa Forum and Pandemic Action Network

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Executive summary

Background

This report is developed by the Future Africa Forum in collaboration with Pandemic Action Network. It provides a summary of the latest developments in policies and interventions for African pandemic preparedness and response, as a starting point for further targeted action. The report is based on a systematic review of regional policies, guidelines and protocols on pandemic preparedness and response complemented by additional research on the intervention landscape and stakeholder perspectives. [LS1] It highlights promising areas to focus new programs and partnerships and makes recommendations for policy innovation and implementation, towards improving health security in Africa.

Summary findings

The report reveals regional policymakers' concerns with existing health security challenges, areas of broad agreement on the desired direction of continental initiatives, and current priorities for enhancing regional healthcare delivery.

Shared concerns range from coordination failures such as low harmonization of systems and protocols, to poor implementation of policies which are particularly evident in low compensation for health workers and underinvestment in research and development. Insufficient public funding for national health systems underlies many of these challenges. Effective policy implementation is thus contingent on increasing national budget allocations and following through on regional commitments. This includes living up to the [Abuja declaration](#) commitment to allocate 15% of national budgets to healthcare and contributing to the operationalization of regional programs such as the AU-proposed continental epidemic fund.

The common threads running through regional policy documents provide a foundation for consensus building, international policy advocacy, and joint action towards the realization of a new public health order for Africa. Where there is variation in policy agendas, it is typically one of degree rather than of direction. Joint policy action should therefore focus on transforming areas of widespread regional progress into fully operational continental systems by bridging highlighted gaps and accelerating the realization of nascent initiatives.

Most regional policy documents highlight the need to establish data sharing platforms for enhanced surveillance mechanisms. The broad acceptance across regions of the value of building International Health Regulations (IHR)/Integrated Disease Surveillance and Response (IDSR) capacities at the national level bodies well for cross-border surveillance and response. A key message here is that duplication of effort and expenditure can be minimized through effective data sharing. This would

include funneling integrated diseases surveillance and response (IDSR) data collected under National Public Health Institutions (NPHIs) to both regional and continental databases and agencies for wider coordination and joint emergency response. These integration efforts could benefit from regional funds for epidemic control such as those already proposed by the East African Community (EAC) and Economic Community of West African States (ECOWAS).

Similarly, harmonization of medical regulation and approaches, such as One Health initiative that underlies several regional epidemic response plans) presents an opportunity to convert regional progress into realization of continental goals. For example, regional medicines regulation is already underway in EAC, ECOWAS and Southern African Development Community (SADC). Taking these regional regulatory approaches as a starting point for African Medicines Regulatory Harmonization (AMRH) greatly reduces the time and effort required to achieve continental consistency that in turn supports joint procurement, manufacturing, and distribution objectives.

African manufacturing of essential medical supplies is a regional policy agenda that has so far lagged behind the separate initiatives of national governments and their private partners. While there is strong regional and continental support for African pharmaceutical production, especially for vaccine manufacturing, intellectual property restrictions on recent global innovations such as COVID-19 vaccines present high barriers to joint production at scale, necessitating national workarounds.

Resourcing pandemic preparedness and response (PPR) interventions is a central concern and many of the challenges identified in existing policies relate in some way to a funding gap hindering appropriate implementation. The question of sustainable financing for African PPR will be dealt with more fully in a separate paper. One promising proposal is the structuring of a dedicated pandemic fund to pool and direct resources toward these areas. This report hints at regional funding for a few cutting-edge research hubs and national investment in public health institutes. It also considers commercialization and scale of medical equipment and supplies manufacturing across the region; and the adoption of harmonized regulations, protocols and databases for disease surveillance. Furthermore, information sharing and pandemic response coordination present some of the immediate opportunities for catalyzing and scaling up promising innovations.

Recommendations

The strategic recommendations from this analysis center on elevating and mainstreaming pandemic preparedness in national and regional plans. They also focus on building upon lessons learned from recent continental epidemics and insights from relevant policy documents and landscaping of recent interventions. Key recommendations:

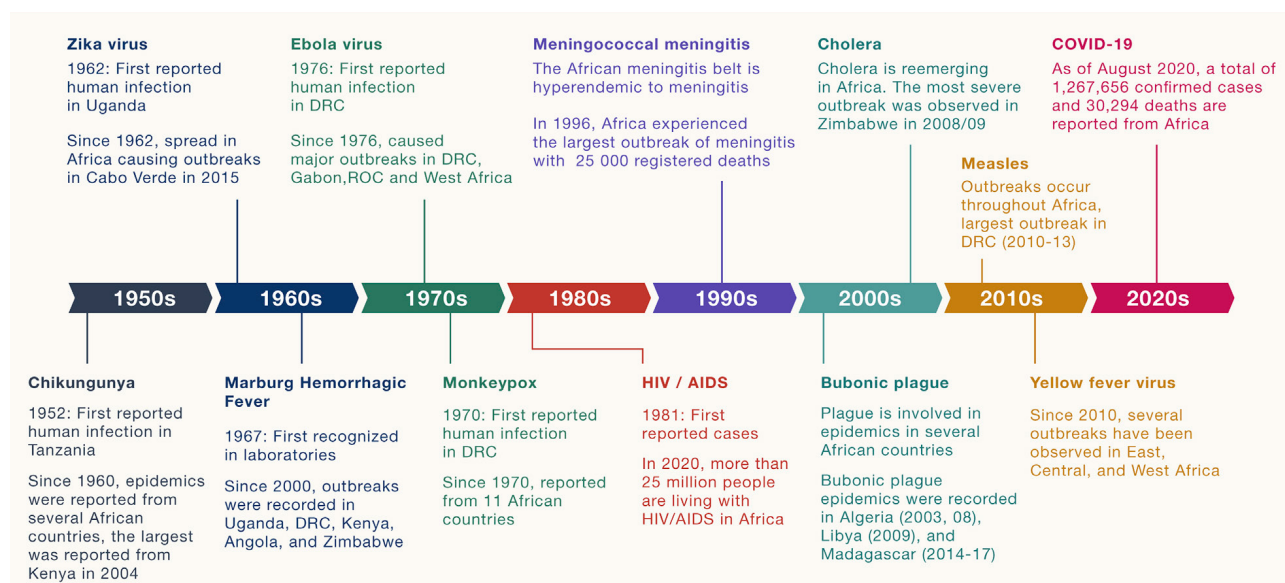
- Elevate and mainstream pandemic preparedness in national and regional policies and guidelines.
- Establish and strengthen national and regional public health institutions.
- Support regional coordination and harmonization through adoption of common regulations.
- Prioritize African participation in research and development (R&D) of medicines and critical supplies.
- Expand regional manufacturing, procurement and distribution of medical supplies.
- Strengthen and expand existing regional initiatives such as disease surveillance, equipment procurement, and regulation and distribution of medicines.
- Enhance and engage with existing community knowledge, resources and relationships for effective engagement.
- Recognize and tailor responses to the differential impact of health emergencies across populations, particularly related to gender.

A centralized, regional approach to financing these recommendations can help to realize a coherent package of sustainable and collaborative initiatives. A proposed [Global Health Security and Pandemic Preparedness Fund](#), technically known as a financial intermediary fund (FIF), could provide predictable resources, disincentivize siloed interventions, and combine new funding streams from diverse sources.

Introduction

African experiences with regional epidemics offer useful insights for policy makers and implementers investing in pandemic preparedness and response today. [Recent Ebola outbreaks](#) have been particularly instructive in bringing to the fore necessary collaborations and innovations. Between 2014-2016, the continent witnessed the devastating loss of over 11,000 lives because of the most severe and complex [Ebola epidemic](#) since the virus was first discovered in 1976. Not only were there more cases and deaths in this outbreak than all others combined but also, unlike previous localized outbreaks, it moved across national borders, seriously affecting three African countries (Guinea, Sierra Leone and Liberia), and spreading to seven other countries in three continents (Italy, Mali, Nigeria, Senegal, Spain, the United Kingdom, and the United States). The 2014-2016 Ebola outbreak highlighted the urgency of strengthening capacities for pandemic preparedness, response, and recovery. Among other developments, it led to the establishment of the [Africa CDC](#), a specialized technical institution of the African Union. The Africa CDC is geared towards strengthening the capacity and capability of Africa's public health institutions, as well as partnerships to detect and respond quickly and effectively to disease threats and outbreaks, based on data-driven interventions and programs.

Figure 1: [Timeline of Emerging and Re-emerging infectious Diseases in Africa from 1950 to 2020](#)



In 2020, a novel coronavirus-SARS-CoV-2, began to ravage the world, leaving no country untouched. The WHO declared the disease a Public Health Emergency of International Concern in March 2020, and by April 2022, it had claimed over [6.2 million](#) lives. Over [500 million](#) cases have been confirmed, with [11.4 million](#) of those cases in Africa. Despite the global nature of the pandemic, international cooperation continues to fall far short of expectations, with strong nationalist sentiment impinging on the collective efforts of regional and global mechanisms. These efforts include the Access to

COVID-19 Tools (ACT) Accelerator, a joint effort of the WHO, the Global Alliance for Vaccines and Immunization (Gavi) and the Coalition for Epidemic Preparedness Innovations (CEPI). [COVAX](#), is one of three pillars of the ACT Accelerator that was set up to pool national, multilateral, and philanthropic resources to support the procurement and distribution of several vaccines and deliver equitable access across countries by using a two-tiered funding model and guaranteed allocation of vaccines to lower-income countries.

“Maybe the Ebola outbreak of 2014 to 2016 was a call to action that something bigger was to come. And maybe COVID-19 is the signal that something even bigger will come. So, we must be prepared and take our health security destiny into our own hands.”

Dr. John Nkengasong, Director of the Africa CDC

The demonstrated inequity in global health systems and dependence of African countries on external support demonstrate an urgent need for a new approach. Whereas most countries in the global north have managed to fully vaccinate 70% of their populations, just over [15% of the African population has been fully vaccinated](#). Several African countries faced discriminatory travel bans, with many SADC members unnecessarily travel-restricted after the genome sequencing efforts of a South African lab alerted the world to the existence of the Omicron variant.

The ongoing pandemic has therefore been a wake-up call for Africa, on the urgent need to build resilient public health systems and strengthen continental health security. The Africa CDC is championing this effort and has called for a ‘[New Public Health Order](#)’ (NPHO) for Africa. This is an independent and sustainable move towards continental health security. The ambition is that the NPHO will be built on the coordination of health systems by [National Public Health Institutes](#) and supported by strong political leadership and consistent funding. The New Public Health Order prioritizes progress in five areas:

1. Stronger regional institutions to guide priorities, coordinate policies and programs, and drive standard-setting and disease surveillance.
2. Local production of vaccines, therapeutics, and diagnostics to drive down procurement costs and increase response speed.
3. Investment in the public health workforce and leadership programs.
4. Strong, high-level partnerships including between donors and governments, as well as the public and private sector, and with public health institutions.
5. A greater role for regional organizations in pandemic governance, through the decentralization of institutions and the inclusion of regional representatives in key agencies to ensure that the specificities and needs of each region are considered in the planning of central mechanisms such as surveillance systems.

There are already several regional agreements and initiatives underway that indicate promising progress toward these objectives. These include plans, partnerships and investments in vaccine manufacturing and distribution capacity, medicines regulatory harmonization, and public engagement. The New Public Health Order provides an opportunity for the region to apply learnings

gained over the years from managing pandemics and outbreaks. It will also harmonize and accelerate the realization of key initiatives in the region that were initiated prior to or during the pandemic for the purpose of strengthening national and regional PPR efforts.

This State of Play report is a targeted summary of the status quo in African pandemic preparedness and response. It outlines the progress made to date in policy and implementation and identifies gaps and opportunities for immediate action ahead. The main objective of the report is to frame discussions around African health policy and focus on the specific models and initiatives that catalyze progress toward enhanced pandemic preparedness and response in Africa.

The report is divided into three main sections that consider the public health challenges across Africa. The sections explore range and focus of policy content; and the latest trends and developments in implementation of initiatives. Lastly, it condenses a set of policy recommendations and intervention proposals from this analysis and specifies points for urgent actions by African health actors to build on current momentum and capitalize on present opportunities to improve pandemic preparedness and response, and realize a NPHO for Africa.

The demonstrated inequity in global health systems and dependence of African countries on external support demonstrate an urgent need for a new approach.



Methodology

This report is based on an analysis of regional policies, guidelines and protocols on pandemic preparedness and response, supplemented by literature review and stakeholder engagement on existing initiatives and perspectives on improving African regional health security. The documents reviewed encompassed official policies, strategies, guidelines, manuals, and frameworks from regional (African Union/CDC) and specific regional economic communities: EAC, ECOWAS, and SADC. The list of reviewed documents is in Appendix 1. To identify these documents general and site-specific searches were conducted using the keywords “Pandemic preparedness and response”; “Epidemics”; “emergency preparedness and response”; “EAC”; “ECOWAS”; “SADC”; “Africa CDC”; “Africa Union”.

We identified prevailing policy elements in pandemic preparedness and response policy documents at the African Union and regional economic communities (RECs) level. We then developed a data charting framework and extracted, and indexed identified policy elements to facilitate a comparative analysis. The identified prevailing policy elements include:

- Networks and partnerships
- Financing
- Governance
- One Health approach
- Implementation plans (including monitoring and evaluation)
- Research and development
- Innovation
- Community engagement including communication plans
- Surveillance systems (data systems)
- Infrastructure, logistics (transport, communication) and supply chains
- Health systems strengthening, especially laboratory systems
- Vaccine, medicines, and diagnostics manufacturing, and distribution

These policy elements were further categorized into four overarching themes:

- **Governance** including One Health, networks, and partnerships and financing
- **Public Health systems strengthening** for emergency response including surveillance and data systems, community engagement, and lab systems
- **Supply chain management and infrastructure** including infrastructure, logistics, transport, communication, and supply chains
- **Vaccine, medicines and diagnostics manufacturing, and distribution** including legal frameworks, research and development, innovation, and technology

Analysis of these themes was designed to highlight commonalities, differences, and potential areas of learning across EAC, ECOWAS, SADC, and the African Union in general.

Table 1: Example of documents by type and level

Type/Level	Regional	Continental
Policy	The East African Community Regional contingency plan for epidemics due to communicable diseases, conditions, and other events of public health concern 2018 - 2023	Maputo Declaration on Strengthening of Laboratory Systems
Strategy	Regional GMP Road map Framework for the Pharmaceutical Manufacturing Industry in ECOWAS	Joint Continental Strategy for COVID-19, 2020
Guideline	Protocol of Health in SADC, 1999	

We also scanned policy documents, databases, organization websites, and health news archives to identify cutting edge initiatives that were aligned to challenges and policy proposals. Agnostic of implementer sector type, we categorized initiatives primarily by their approaches to improving pandemic preparedness and response, and health security across the full set of issues covered. Active interventions range from the manufacturing of drugs, vaccines, and medical equipment to investments in diagnostics and laboratory facilities. Furthermore, we explored improvements in data collection and management such as upgraded surveillance systems, as well as efforts to harmonize and rationalize bureaucracies.

Table 2: Example initiatives by type and sector

Sector/Type	Data / surveillance	Materials / infrastructure	Regulation / Harmonization
Public led	National Public Health Institutes The Surveillance Outbreak Response Management and Analysis System (SORMAS)	Diatropix rapid tests plant	African Medicine Agency (AMA) Treaty
Private led		Revital medical supplies	
Partnerships	AUDA-NEPAD and Vodacom Mezzanine mVacciNation	Rwanda/BioNTech vaccine plant	Joint development of the Research and Development Priorities for COVID-19 in Africa by the African Academy of Sciences (AAS), African Center for Disease Control (Africa CDC), and WHO-AFRO.

Findings

Findings are broken down into the following sections: challenges identified and emerging policy and program directions. These sections underpin the related policy recommendations which are also aligned to the pillars of the New Public Health Order for Africa agenda.

Identification of challenges

The focus areas and problem framing of reviewed policy documents reveal policymakers' assumptions about the nature, extent, and priority of challenges the policies are designed to address. A few common themes and problem frames occur frequently across documents. Prominent issues relate to the contextualization of international standards, the adoption of regional ones, the adequate funding of both routine and emergency systems, and the procurement and manufacturing challenges and how they are being addressed. Notably missing across the reviewed documents are consideration of gender-based impacts of health emergencies, and integration of opportunities for youth in healthcare management and provision.

Unpredictable and unsustainable funding

Policy documents recognize the need for increased and sustained financing across pandemic preparedness and response areas including surveillance, and laboratory systems strengthening, beyond the peak of outbreaks. The steep decline in donor and private funding for Ebola response during the final recovery stage of the 2014-16 epidemic is an example of [premature ramp down](#). This can be avoided via multi-year commitments to national and regional programs backed by secure and routine fund replenishments, national budget allocations and timely disbursements.

The proposal to create a [\\$10 billion annual Financial Intermediary Fund \(FIF\) for Global Health Security and Pandemic Preparedness](#), housed at the World Bank if successful, would help mobilize additional financing from governments, multilateral development banks, philanthropy, and the private sector to close critical preparedness gaps at national, regional, and global levels.

Poor and weak implementation of policies

Despite the proliferation of commitments, agreements and declarations, African countries continue to lag on set targets and timelines: Most signatories to the 2001 Abuja Declaration for instance [are yet to raise their public health funding to 15% of total expenditure](#). No African Union (AU) members [currently meet](#) the continental body's [2007 recommendation](#) of committing 1% of GDP to research and development expenditure. The recent adoption of the Integrated Disease Surveillance and Response (IDSR) initiative, which was established by countries in the WHO African Region, is a step towards implementing comprehensive public health surveillance and response systems for priority

diseases, conditions, and events at all levels of health systems. [As of December 2017](#), 44 of 47 African countries (94%) were implementing IDSR. Thirty-two countries (68%) had achieved the timeliness and completeness threshold of at least 80% of the reporting units. However, only 12 countries (26%) had the desired target of at least 90% IDSR implementation coverage at the peripheral level. Noted gaps were in implementing event-based surveillance.

Lagging adoption and adaptation of international standards and tools

These issues have recently been illustrated by difficulties meeting the [International Health Regulations](#) (IHRs) requirements. The IHRs are an international legal instrument adopted by 196 countries that covers measures for preventing the transnational spread of infectious diseases. They define national core capacities, including at points of entry, for the management of acute public health events of pandemic potential or actual national and international concern, as well as related administrative procedures. Over the years the African region has lagged in meeting the score requirement, standing at an [average capacity of 50%](#). The major technical gaps identified include antimicrobial resistance, biosafety and biosecurity and chemical events and radiation emergencies. They also include preparedness, emergency response operations, medical countermeasures, and personnel deployment and points of entry (PoE), chemical events and radiation emergencies. The WHO's Joint External Evaluation (JEE) [dashboard](#) rates African countries as mostly 2 ('limited capacity') and 3 ('developing capacity') on a [5-point IHR scale](#) ranging from 'no capacity' to 'sustainable capacity'. While these tools provide a basis for country measurement for their level of pandemic preparedness and response, [several studies have](#) also highlighted the need to continuously evaluate them to better prepare for future global public health crises. For example, Haider et al demonstrated that the Global Health Security Index (GHSI) and JEE scores had minimal predictive value in determining COVID-19 detection response capabilities and mortality outcomes, whereby 10 countries with the worst COVID-19 mortality rates are among the top 20 countries in terms of their overall GHSI scores. It is worth noting that countries with lower preparedness scores had a narrowed gap of duration to detection of the first COVID-19 case, and documentation of COVID-related deaths differs across countries. Other reasons for the disparities in tools that are able to predict country level preparedness and response include not considering country population dynamics such as demographics (aged versus young population), and comorbidity vulnerabilities and the social and political factors.

Vulnerable supply chain management systems

COVID-19 magnified the vulnerabilities of the region's supply chains to meet public health demands. These vulnerabilities included: low domestic capacity to meet all PPE requirements in any country; high dependence on international products; weak infrastructure; limited market opportunities for existing manufacturers, lack of structures and frameworks, and limited capability to accredit new producers and products. These challenges are compounded by global procurement challenges such as supply chain breakdowns and export bans or restrictions from high-income countries. The African Medicine Supply Platform (AMSP) and African Vaccine Acquisition Task Team (AVATT) are two platforms designed to alleviate these respective challenges.

Inadequate scaling up of innovations

According to the [Africa Sustainability Index](#), the innovation vital sign had the lowest average score of any of the six Vital Signs. COVID-19 just like Ebola exposed the failures of, and presented opportunities with regards to, how Africa's biomedical R&D system delivers solutions for outbreaks and emergencies. Equally, it presented opportunities to explore and introduce better practices. Of note is the underinvestment in R&D across Africa, which is still less than 1% of GDP. In addition, it is worth highlighting the lack of international co-creation or African participation in global R&D efforts. COVID-19 called for new innovations and improvements to existing technologies such as ICT-based 3D printing, robotics in surveillance, contact tracing, community engagement, treatment, laboratory systems and infection, prevention, and control. More remains to be seen in terms of the usability, scalability, and sustainability of these technologies in different contexts. Furthermore, appropriate legal and strategic frameworks are needed to ensure mature, fit for use and context-relevant technologies are rolled out and scaled up for improved public health systems.

Weak laboratory systems

Public health laboratories are essential to early detection, and response of outbreaks. While acknowledging the efforts made over the years and especially during COVID-19 in expanding and strengthening laboratory systems, challenges remain in a number of areas. For example, coverage at national level, national policy and strategy for laboratory services and the need for sustained relationships and data sharing between NPHIs and agencies that are not traditionally considered public health. [Further challenges](#) relate to insufficient funding, inadequately trained laboratory staff in areas like bioinformatics (essential for genomic analysis), weak laboratory infrastructure, low operational efficiency and quality, lack of formal sample transportation and networking mechanisms nationally and regionally, and inconsistent supply of laboratory supplies, reporting and feedback mechanisms. The [Regional Integrated Surveillance and Laboratory Network \(RISLNET\)](#) could greatly alleviate some of these challenges through coordination and integration of laboratory, surveillance, and emergency response assets, including public health data, supporting the prevention, detection, and response to public health threats. However, RISLNET is currently operational in only one of five regional collaboration centers, Southern Africa [Central Africa leading the Eastern Africa, Northern Africa, Southern Africa and Western Africa RCCs](#).

Limited manufacturing capacity for diagnostics, therapeutics, and vaccines

Local production of vaccines, medicines, and diagnostics is critical to safeguard Africa's health security. Despite the threats posed by infectious diseases emerging and re-emerging in Africa, the [continent produces less than 0.1% of the world's vaccines](#) and lacks the adequate capacity to manufacture them at scale. Local production of medicines is equally critical. [Africa imports between 70% and 90% of its drugs](#), which demonstrates the huge gap in this industry. Additionally, weak regulatory bodies to support the local manufacturing of medicines remains a challenge. For example, [in West Africa six countries have policies or legislations](#) that provide a mandate for recognition of regulatory decisions made by other regulatory agencies. Cooperation and collaboration are most needed in the fight against Substandard and Fake (SF) medicines and the much-desired harmonization of regulatory practices in Africa.

Policy and program direction

The reviewed documents cover a wide range of public health issues related to pandemic preparedness and response. The policy documents provide recommendations that require implementation at not only regional level but at the national level as well. The four overarching themes from the policy analysis include:

- **Governance** including One Health, networks and partnerships, financing.
- **Public Health systems strengthening** for emergency response including surveillance and data systems, community engagement, and lab systems.
- **Supply chain management and infrastructure** including logistics, transport, communication, and supply chains.
- **Vaccine, medicines and diagnostics manufacturing, and distribution** including legal frameworks, research and development, innovation, and technology.

Governance

National public health institutions

The findings demonstrate a common movement toward establishment of national public health institutions and their regional equivalents as the central coordinators of regional health interventions. The AU, EAC, and ECOWAS have all established specialized departments or agencies for pandemic preparedness and response while the SADC region has situated regional coordination of health needs within the SADC Social and Human Development Directorate. Establishment and operationalization of NPHIs such as the Nigeria CDC provide learning opportunities that can inform similar efforts in other African countries (Box 1). Some of the lessons learned include: establishing legal frameworks through an Act of parliament, articulation of a clear strategy and implementation plan, required strong political will, investment in human resources, and establishing a reliable supply chain and management systems.

Integrated healthcare delivery

There is also a common movement toward holistic governing frameworks for national healthcare systems. Several regional actors have embraced the One Health approach, including Africa CDC, EAC, and ECOWAS, as a fundamental framework to guide governance, policies, and pandemic preparedness and response implementation. However, based on the solutions suggested by these regional bodies, a significant challenge remains in combining relevant expertise and existing data on animal, human health, and environmental experts for joint decision-making on disease prevention and control.

Routine and emergency financing

Funding shortfalls emerge as one of the most fundamental issues underlying a range of challenges. Effective policy implementation is therefore contingent on mobilizing national budget allocations and contributions to regional funds. Recent African Union proposals to form continental epidemic and pandemic funds could go some way to resolving this issue if these prove well-resourced and governed (once established) with the necessary accountability to ensure actual disbursement of committed funds.

Across the RECs and the AU, policies repeatedly mention the need to establish regional emergency funds for pandemic preparedness and response. The [35th session of the AU](#) decided in February 2022 to upgrade the existing AU COVID-19 Response Fund into the Africa Epidemics Fund to mobilize resources to address threats from multiple diseases. While acknowledging the need for more financial investments, emphasis should be placed on effective allocation of these funds, and existing mechanisms (legal or administrative). This will ensure the smooth flow of such funds and clear guidelines on the process of operationalization, prioritization and monitoring and evaluation and learning across the regional bodies. Moreover, there is consistent mention that the region lacks an enabling environment for public private partnership in health, R&D, and infrastructure, which provides an opportunity to put in place strategies for coordinating such public-private partnerships.

Partnership models

Good governance is built on inclusive and responsive partnerships. Findings show interventions tend to cluster around partnership models, whether public-private; global north and global south; or across national authorities within continental sub-regions. These partnerships are an important indicator of the direction pandemic preparedness will need to evolve for greater effectiveness and sustainability. The shared nature of security threats and the location of required resources and expertise in different geographies, sectors, and organization types makes partnership a prerequisite for progress. This will require organizations to adapt their processes and protocols to accommodate atypical partners and explore new and innovative vehicles that can respond to the public health issues in question.

Public health systems strengthening for emergency response

Pandemic surveillance

(Early detection, verification, assessment, and communication of public health threats)

A disease surveillance or laboratory strengthening agenda is perhaps the most promising area for achieving continental integration. All regions highlight the need to put in place data-sharing platforms for enhanced surveillance mechanisms.

Progress toward further harmonization and regionalization could see national governments working closely with Africa CDC and potentially multilateral funders such as the African Development Bank. These new relationships would help to prioritize and finance adaptation and integration of IHR/IDSR technical guidelines into the programs of national laboratories and public health institutes. Accelerating the operationalization of RISLNET would then link this improved national capacity to regional coordination infrastructure. Regional projects such as the EAC's East Africa Public Health Laboratory Networking Project (EAPHLN), SADC's Southern African Centre for Infectious Disease Surveillance (SACIDS), and ECOWAS' West Africa Regional Centre for Surveillance and Disease Control (RCSDC) could provide a head start toward feeding data into RISLNET in the four Regional Collaborating Centers where it is not yet active. Key here is that duplication of effort and expenditure can be minimized through effective data sharing and the funneling of IDSR data, which has been collected under NPHIs to both regional and continental databases and agencies for wider coordination and joint emergency response. These integration efforts could benefit from regional funds for epidemic control such as those already proposed by the EAC and ECOWAS. In keeping with data strengthening efforts, the COVID-19 pandemic has highlighted the [glaring gaps in availability](#)

[of robust gender-disaggregated data](#) needed to develop appropriate public health responses that demonstrate the diverse ways women are disproportionately impacted.

Putting in place regional data sharing mechanisms, are highlighted as key gaps and opportunities to improve regional surveillance and response. These mechanisms include the legal frameworks and data review and translation platforms that integrate a One Health approach. The analysis suggests that each of the regional bodies reviewed planned to put in place their own data systems for regional surveillance. Considering the regional bodies' present reliance on data from member states, continental alignment efforts may provide an opportunity for harmonizing data collection, analysis, and monitoring tools to avoid overburdening countries with multiple data platforms and protocols.

Surveillance interventions lend themselves to public sector leadership. Regulation and harmonization are rightly led by regional hubs and bodies, coordinating the alignment of member states, who bear the primary responsibility for domestic investment in national surveillance systems that make regional coordination and response possible. There currently seems to be more movement on the regional level rather than national level, in terms of resourcing laboratories and information networks. National public health institutes (NPHIs) present an opportunity for national governments to catch up with and support this progress. Government efforts can be completed by multi-partner tools and capacity. For example, the [Surveillance Outbreak Response Management and Analysis System \(SORMAS\)](#) is an open-source mobile and web application software that grew directly out of the experience of tackling Ebola in Nigeria. It has been developed by a multitude of partners, sponsors, and contractors. It provides comprehensive disease surveillance and outbreak management in a single digital platform, processing real-time data that is critical in enabling health workers to notify health departments about new cases of epidemic-prone diseases, detect outbreaks, and simultaneously manage outbreak response.

Both Africa CDC and the RECs acknowledge the importance of improving IDSR and IHR implementation capacities at the national and regional level for cross border surveillance and response. ECOWAS and EAC have established regional centers for surveillance and disease control - ECOWAS Regional Center for Surveillance and Disease Control (ECOWAS-RCSDC) and East African Integrated Disease Surveillance Network (EAIDSNet) respectively. To address the same, five Member States of the Southern African Development Community (SADC), the Democratic Republic of the Congo, Mozambique, South Africa, Tanzania, and Zambia, established the Southern African Center for Infectious Disease Surveillance (SACIDS). The SACIDS is a nonprofit designed to address infectious diseases in the endemic settings of Africa. Given Africa CDC's mandate to strengthen health-related surveillance systems. A network analysis of initiatives, projects and centers across Africa CDC's Regional Collaborating Centers, could establish potential opportunities for more effective collaboration, operations and funding allocation to bring to life a New Public Health Order. Both Africa CDC and the RECs acknowledge the importance of improving IDSR and IHR implementation capacities at national and regional level for cross border surveillance and response. ECOWAS and EAC have established regional centers for surveillance and disease control -ECOWAS Regional Center for Surveillance and Disease Control (ECOWAS-RCSDC) and East African Integrated Disease Surveillance Network (EAIDSNet) respectively. To address the same, 5 Member States of the Southern African Development Community (SADC) – Democratic Republic of the Congo, Mozambique, South Africa, Tanzania, and Zambia established the Southern African Center for Infectious Disease Surveillance (SACIDS)- a nonprofit- to address infectious diseases in the endemic settings of Africa. Given Africa CDC's mandate to strengthen health-related surveillance systems

through its five Regional Collaborating Centers, a network analysis of initiatives, projects, centers across the RECs could establish potential areas to avoid duplication and to create/ enhance synergy for more effective collaboration, funding allocation and smooth operations, bringing to life the New Public Health Order.

Data management and information sharing play an important supporting role in the distribution of physical materials. Interventions in this area focus on making public health information widely accessible and informing pandemic response decision making in as close to real-time as possible. An example of data management and sharing information for public health during COVID-19 includes the [mVacciNation initiative](#) partnership between AUDA-NEPAD and Vodacom Mezzanine. mVacciNation is a digital, cloud-based solution that connects all stakeholders engaged in the provision, management and monitoring of vaccines. It has been established to respond to the AU vaccine strategy objective of supporting the widespread distribution and management of vaccines with an African developed solution. mVacciNation addresses two critical priorities for African health systems. Firstly to ensure people get the right vaccine at the right place and time, and secondly to provide real-time information for health workers of available vaccines and medical equipment. The initiative takes on a multi-stakeholder approach engaging both the public and private sector, providing a learning opportunity on how to tackle public health emergencies through collaborative approaches. The strengths of this approach can be replicated and scaled across other data-driven emergency responses.

Strengthening laboratory systems

In 2008, the continent committed to strengthening laboratory systems through the [Maputo Declaration](#) on strengthening of laboratory systems with a focus on improving implementation of HIV, TB, and malaria programs. The Maputo declaration called for countries to develop national strategic laboratory plans, engage in public private partnerships, establish a department of laboratory systems within the Ministry of Health, strengthen human resource capacity, increase funding through donor support, and establish quality assurance standards. Years later, strengthening laboratory networks at national and regional levels has been noted as a core element for the prevention, rapid detection, and response to current and emerging public health threats. Several initiatives to strengthen laboratory systems exist across the region including Africa CDC's Regional Integrated Surveillance and Laboratory Network (RISLNET) and EAC's East Africa Public Health Laboratory Networking Project (EAPHLNP) both funded by World Bank and the West African Network of Medical Biology Laboratories (RESAOLAB) initiated by Mérieux Foundation with support from the Agence Française de Développement. A productive next step would be to audit and improve their interconnections and alignment to the Africa CDC RCC/RISLNET frameworks. [The European Union's 'Team Europe' initiative](#) committed eight billion euro to pandemic preparedness and response in Africa as a result of COVID-19, including €1 billion in support for manufacturing of vaccines, medicines and health technologies and strengthening pharmaceutical and health systems. The goal of these efforts is to increase African research capacity and intercontinental scientific cooperation.

Beyond pandemic surveillance and strengthening laboratory systems, the need for inclusive, culturally appropriate, and evidence-based risk communication plans is an ancillary theme within policy documents. The Ebola and COVID-19 crises show that public health threats often affect the social fabric of communities. Policy documents signal existing challenges in trust between government and communities especially in times of crisis such as pandemics in the era of infodemics,

without specifying concrete plans for regional responses to this issue. In public engagement, the COVID-19 infodemic led to the creation of the [Africa Infodemic Response Alliance \(AIRA\)](#), a first-of-its-kind regional body that brings together fact-checking and media organizations, big data, AI and innovation bodies, and leading inter-governmental and non-governmental organizations working in public health to respond to infodemics with accurate and accessible information for public use.

Supply chain management and infrastructure

With a focus on pharmaceutical manufacturing, regional policy documents recommend development of regional pooled procurement channels for pharmaceutical products in addition to establishment of pharmaceutical manufacturing centers. The development of such channels and centers has demonstrated the need to invest in the associated legal, financial (tariffs and taxes), physical (road and air networks), and information infrastructure (e.g., ICT) that make manufacturing supply chains work. In the SADC region, for example, the SADC Pooled Procurement of Essential Medicines and Medical Supplies document recommends undertaking a comprehensive inventory of existing tax and duty instruments to understand their effects on purchasing behavior and pricing; mapping existing programs for strengthening PSM systems and/or quality assurance systems; and alignment of legal, regulatory, financial, and pharmaceutical procurement systems across countries. In addition to pharmaceutical manufacturing, there is a need for stronger guidelines for supply chain and management systems and infrastructure standards, as this is key for effective functioning of regional surveillance platforms and regional laboratory system networks to facilitate sample transportation and provision of essential health products among other areas.

The African Union has established a special purpose vehicle, the [African Vaccine Acquisition Trust \(AVAT\)](#), to accelerate access to and roll out of COVID-19 vaccines in Africa. AVAT serves as a centralized purchasing agent on behalf of the African Union (AU) Member States, to secure the necessary vaccines and blended financing resources for achieving Africa's COVID-19 vaccination strategy. AVAT, with the support of financing the African Export-Import Bank (Afreximbank), signed an agreement with Johnson & Johnson for the purchase of 220 million doses of the single-shot COVID-19 vaccine, making this the first time that the African Union Member States have collectively purchased vaccines to safeguard the health of the African population.

COVID-19 also saw the establishment of the Africa Medical Supplies Platform (AMSP) aimed at providing AU member states access to an African and global base of vetted manufacturers and procurement strategic partners for the purchase of certified medical equipment such as diagnostic kits, PPE, and clinical management devices. The platform's interface offers the capability of volume aggregation, quota management, payment facilitation as well as logistics and transportation to ensure not only equitable and efficient access to critical supplies for African governments but also increased cost effectiveness and transparency.

Vaccine, medicines, and diagnostics manufacturing and distribution

Research and development

The most glaring gap in building the future of African pandemic preparedness and response is in local R&D of diagnostics, vaccines, and medicines for diseases impacting the continent. Sustained

investment in this area could go a long way towards eroding inequities and dependencies in the global health landscape. Progress toward deployable outcomes can be accelerated by public partnerships with private pharmaceuticals and research laboratories, collaboration with research networks and vaccine and drug manufacturers beyond the continent, and greater use of reverse engineering or waiving of patents on existing formulations.

Health R&D on the continent has historically been publicly underfunded and dominated by isolated private sector efforts. In addition to prioritization of funding for R&D, building an Africa-led and owned consensus on the top priorities for R&D partnership and funding may be one way to drive greater engagement by national governments and regional organizations. In light of this, the African Academy of Sciences (AAS), together with various partners including AUDA-NEPAD, conducted a series of priority setting engagements for R&D for COVID-19, with over 1,400 African scientists contributing to a consolidated list of priorities that can form a basis for united advocacy toward concrete funding commitments at national and regional levels.

West African Health Organization (WAHO) is unique in its promotion of [including traditional medicine](#) as a key aspect of its regional pharmaceutical plan developed in 2014. An indication of the region's acknowledgment of the value of diverse and local knowledge in R&D of drugs. Additionally, the plan refers to the establishment of a regional Center for Bioequivalence and Bio-pharmaceutical Research (CBBR) in Ghana. Knowledge-sharing platforms established in other disease areas serve as learning opportunities. For example, the [Medicines for Malaria Ventures Pathogen Box](#) was an open source platform providing researchers with a free collection of 400 active compounds against neglected tropical diseases (NTDs), such as Chagas', human African trypanosomiasis, and schistosomiasis. The Pathogen Box had a pre-condition that researchers had to make public knowledge resulting from experimentation with the compounds within two years.

Standardization

Harmonization of medical regulation and approaches (such as One Health, underlying several regional epidemic response plans) presents an opportunity to convert regional progress into realization of continental goals. Regional medicines regulation is already underway in EAC, ECOWAS, and SADC. The East Africa Community Medicines Regulatory Harmonization Programme aligns the regulatory requirements, guidelines, standards, and tools of EAC National Medicines Regulatory Authorities (NMRA), while the Southern Africa Regional Programme on Access to Medicines and Diagnostics (SARPAM) represents SADC's commitment to harmonization. Taking these regional regulatory authorities as starting points for the African Medicines Regulatory Harmonization (AMRH) greatly reduces the time and effort required to achieve continental consistency that in turn supports joint procurement, manufacturing, and distribution objectives.

All RECS have established Medicines Regulation Harmonization programs to facilitate access to safe, efficacious, and quality essential medicines, vaccines, and medical devices for treatment, management, and diagnosis of conditions of public health importance. However, challenges exist in the lack of NMRAs in some countries and low harmonization and contextualization of national NMRAs where they do exist. The WAHO Regional Pharmaceutical Plans are available online, whereas the EAC seemed to have one in draft, but not accessible online. Moreover, the RECs acknowledge the importance of putting in place pooled procurement channels to take advantage of economies of scale

and thus better pricing of essential medicines and vaccines. SADC has had an existing policy since 2012, especially for procurement of HIV drugs.

The [African Medicines Regulatory Harmonization \(AMRH\)](#) program works with Regional Economic Communities (RECs) to increase access to good quality, safe and effective medicines through harmonizing regulations and expediting registration of essential medicines. To formally coordinate harmonization of medical regulation through a centralized specialized agency, the [Africa Medicines Agency](#) has been established. The Treaty for the establishment of the AMA entered into force in November 2021, having been signed and ratified by the required 15 AU member states. Now, [28 of 55 AU members have signed the treaty](#), and advocacy continues for the further signatures and ratifications towards a broader sense of shared ownership and commitment.

Manufacturing

Manufacturing provides an opening for private actors of different scales to align themselves to national and regional objectives, lending their capacities to public health priorities, including pandemic and response priorities in times of need. However, there is also a need for greater involvement of local manufacturers in pandemic preparedness, helping to build supply stockpiles and critical equipment in arms-length contracts with relevant public agencies. While there is strong regional and continental support, especially for vaccine manufacturing, intellectual property restrictions present high barriers to joint production at scale, necessitating national workarounds.

A challenge noted in Africa CDC documents on regional vaccine manufacturing is the capacity restriction presented by intellectual property rules enshrined in the The Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPs). The ECOWAS/WAHO TRIPS guidelines outline plans to mobilize efforts of its member states in accessing TRIPS flexibilities and safeguards including establishing a platform for technological transfers between the International Federation of Pharmaceutical Manufacturers Association (IFPMA) and the West Africa Pharmaceutical Manufacturers Association (WAPMA). Considering the huge barrier TRIPS raises towards realizing transfer of technology to facilitate regional vaccine, medicines, and diagnostics manufacturing, a regional strategy to address institutionalized inequities is warranted.

Towards regionalizing production of essential medicines, vaccines, and diagnostics, the Africa CDC has established the [Partnership for Africa Vaccine Manufacturing \(PAVM\)](#) that aims to leverage pan-African and global partnerships to scale-up vaccine manufacturing in Africa. The PAVM seeks to realize a continental vision for vaccine manufacturing in the region by putting in place mechanisms to manufacture 60% of Africa's routine immunization needs on the continent by 2040. The AU has also put forward the [Pharmaceutical Manufacturing Plan for Africa \(PMPA\)](#) to strengthen the region's ability to produce high quality, affordable pharmaceuticals across all essential medicines. The PMPA led to the establishment of the AMRH program. The program works with Regional Economic Communities (RECs) to increase access to good quality, safe, and effective medicines through harmonizing regulations and expediting registration of essential medicines. To formally coordinate harmonization of medical regulation through a centralized specialized agency, the [Africa Medicines Agency](#) has been established. In diagnostics, the [Africa Collaborative Initiative to Advance Diagnostics \(AFCAD\)](#) is a strategic partnership between the Africa Centers for Disease Control and Prevention, the African Society for Laboratory Medicine the Institut de Recherche, de Surveillance Epidémiologique et de Formation, WHO-AFRO the Clinton Health Access Initiative, the African Field

Epidemiology Network, UNITAID, and other partners to increase access to quality diagnostics in support of universal health coverage in Africa.

Manufacturing interventions mainly consist of licensed production of existing drugs and processes owned by major pharmaceutical firms, demonstrating the predominance of intellectual property residing outside the continent, and the possibilities of accessing patented technologies through licenses and waivers. There is still a large gap in local R&D and in fully utilizing the potential of waivers to address global emergencies, but some recent initiatives are indicative of progress. A December 2021 [agreement between BioNTech, the Rwandan government, and Institut Pasteur de Dakar in Senegal](#) heralded the construction of the first mRNA vaccine manufacturing facility in Africa starting in mid-2022. While aimed at easing vaccine access disparities between Africa and other world regions, increasing continental manufacturing capacity beyond a handful of facilities in Tunisia, Senegal, Egypt, Ethiopia, and South Africa, it remains to be seen what producing under license to BioN Tech will mean for costs, prices, and distribution. The [diaTROPiX production platform](#) was launched by Institut Pasteur of Dakar, the Mérieux Foundation, the Foundation for Innovative New Diagnostics (FIND), and the Institut de Recherche pour le Développement (IRD) in 2020. It is a non-profit effort to produce high quality rapid tests to diagnose a wide range of infectious diseases that remain major public health challenges, including COVID-19 and neglected tropical diseases (NTDs), at affordable prices for resource-limited countries. This is possible due to the low technology barriers (relative to vaccine production) of manufacturing diagnostics.

Beyond pharmaceuticals, medical supplies, and equipment such as masks and syringes are less encumbered by intellectual property restrictions, lending themselves to a lower scale and larger number of independent private sector efforts. [Revital Healthcare \(EPZ\) Ltd](#) is a medical devices manufacturer based in Kenya, producing more than 45 medical devices ranging from various syringes (RUP/AD and conventional), rapid COVID antigen test Kits, rapid Malaria test kits, oxygen related products (bCPAP), PPE Kits, Surgical Face Masks, viral transport medium kits among others. It is accredited by several international organizations including WHO-PQS, ISO 13485, ISO 14001, ISO 9001, CE-TUV, WHO-GMP, and US-FDA-EUA. In 2020, the company received grant funding to ramp up syringe manufacturing to address looming shortages beyond Kenya.

Distribution

Regional distribution of medical supplies stands to benefit from the [African Continental Free Trade Area \(AfCFTA\)](#), through the creation of a single continental market for goods and services. The necessary cross-border infrastructure could be financed in part by the New Partnership for African Development (NEPAD) [Infrastructure Project Preparation Facility](#), a consortium led by the African Development Bank with financial donors and major infrastructure consultancy firms for the improvement of investment in the energy, transport, ICT, and transboundary water sectors.

Recommendations

The following recommendations build on existing momentum to improve pandemic preparedness and response within the broader context of a new public health order for Africa. The recommendations are interdependent, building upon each other across type, sector, and level. There is scope for national policy makers to support regional coordination efforts, for the private sector to partner with the public sector, and for social and community initiatives to plug into health systems and bureaucracies. Overall, now is the time to take advantage of low-hanging opportunities in the short to medium term, make catalytic investments that lead to functional and sustainable ecosystems, and amplify the efforts of a wide range of actors who are championing Africa's resilience to health emergencies, including pandemic threats.

The recommendations center on elevating and mainstreaming pandemic preparedness in national and regional plans, building on lessons learned from recent continental epidemics, and are broadly aligned to the pillars of **Africa CDC's calls for a New Public Health Order**:

1. Strong continental public health institutions
2. Local manufacturing of vaccines, drugs, and diagnostics
3. A strengthened public health workforce
4. Respectful local and international partnerships
5. Regional organizations empowered for pandemic governance

A centralized, regional approach to financing these recommendations can help to realize a coherent package of sustainable and collaborative initiatives. A new Fund for Global Health Security and Pandemic Preparedness, technically known as a financial intermediary fund (FIF) for Pandemic Preparedness and Response would provide predictable resources, disincentivize siloed interventions, and combine new funding streams from diverse sources.

The recommendations also assume progressive changes to health governance at national, regional and global levels towards further collaboration, harmonization and accountability. Two major lessons from the COVID-19 pandemic were a lack of coherent preparedness measures across jurisdictions, and the danger of fragmented, competitive responses to health emergencies. Both of these challenges can be minimized by proactive agreement of common standards, norms and values; strong international governance measures relating to public health risks; and improved leadership and accountability for health outcomes at all levels.

Strengthen national and regional public health institutions

African capacity for disease surveillance, policy and program coordination can be vastly improved by the further establishment and interconnection of national public health institutions across the continent. This calls for increased funding to NPHIs and further harmonization of operations around Africa CDC guidelines. Invest in holistic health systems strengthening through higher national

budget allocation, prompt disbursements, coordination and utilization, and alleviation of public financial management issues at the executive level of national governments.

- There is an urgent need for member states to invest in holistic health systems strengthening through increased domestic budget allocation, prompt disbursements, coordination, and utilization. This also demands heightened efforts to improve public financial management to curb leakage of finite resources.
- The investment priorities by member states must also consider strengthening national public health institutes (NPHIs) through secure, predictable funding, and integration of their mission into national health plans.
- Member states must also strive to disburse adequate budget allocations to laboratory facilities for diagnostic equipment, implementation and performance improvements in Integrated Disease Surveillance and Response and Community-based Surveillance. They should also commit to funding regional implementation initiatives such as the Regional Integrated Surveillance and Laboratory Network.

These proactive investments in preparedness and prevention will position African countries to limit the occurrence, scale, and cost of future outbreaks, and improve the general effectiveness of national health systems towards enhanced health security.

Support regional coordination and harmonization of healthcare provision

This includes domestication of relevant standards and guidelines towards consistency of approaches. It also means increasing support for regional bodies to better coordinate pandemic governance. AU member states through the African Union Commission (AUC), should fast-track implementation of the decision by AU Heads of State to transition the Africa CDC from a specialized technical institution of the AU to a Public Health Agency, and support the expanded mandate with the financial and technical capacity to coordinate regionalized (AU) responses, working closely with regional economic communities among other relevant continental bodies.

African Union member states should also rally support for the proposal to create a Fund for Global Health Security and Pandemic Preparedness, housed at the World Bank, with at least US\$75 billion over the next five years and investment of a minimum US\$10 billion annually. Such a Pandemic Fund, would mobilize additional financing from governments, multilateral development banks, philanthropy, and the private sector to close critical preparedness gaps at national, regional, and global levels. International funding from the Fund should be structured to incentivize domestic co-financing, and should be more predictable and sustainable, acknowledging that pandemics are a collective security and systemic threat that requires a whole-of-government, whole-of-society response.

Aligning standards and protocols across countries will close identified technical gaps in national management of health emergencies and reduce frictions in joint response operations and participation in regional initiatives.

Elevate and mainstream pandemic preparedness

Use Universal Health Coverage (UHC) or One Health frameworks as appropriate to elevate and mainstream pandemic preparedness as a national issue, plugging remaining gaps in implementation of either approach for them to function as a viable foundation for holistic health security. The goal should be to integrate pandemic preparedness into all health services rather than roll it out as a siloed program.

- African Union member states should develop national pandemic preparedness plans with clear priorities and action in national policy and legislative frameworks.
- The preparedness plans at the member state level would be bolstered further with the establishment of regional funding programs for joint initiatives. In this regard, regional bodies, donors and multilaterals should consider developing grant, loan structures, and project design protocols that incentivize pandemic preparedness and response partnerships across borders.

Increase investment and support programs on research, development, and innovation

Policy and decision makers across African member states should prioritize R&D supported by global knowledge-sharing and respectful partnerships. At the regional level, regional institutions like the Africa CDC and AUDA-NEPAD should be supported to marshal public and private funding and pool resources, knowledge and existing technology (including large-scale surveillance) for cross-border efforts, using licenses, waivers, and/or reverse engineering to accelerate progress toward deployable solutions.

- The Africa CDC, through its regional collaborating centers, should support member states to establish policies and mechanisms to enhance data availability, accessibility, and sharing across the region.
- The centers of excellence across the region should strengthen collaboration with existing research consortiums with the aim of strengthening pandemic R&D in areas such as epidemiological modeling. Importantly, there is a need for regional platforms that can link research institutions and industry to improve utilization of research in product development for medical products and devices.

Increasing Africa's investment in R&D, participation in global partnerships and directing relevant funding platforms to innovation and data management will help to reduce the continent's deficit in relevant health technologies and systems.

Expand regional manufacturing

There is an urgent need for national governments to support regional manufacturing of drugs, vaccines, and other medical supplies to reduce and share procurement costs and reliably ensure their

continued availability. This requires partnerships in technology and expertise, regional public funding and private investment to drive production and distribution.

- Member states must ensure that appropriate policy and legal frameworks are enacted and that national budget allocation enables public-private partnerships and joint ventures in the production of basic medical supplies and PPE.
- At the regional level, efforts should be accelerated in the implementation of the African Union's Pharmaceutical Manufacturing Plan for Africa (PMPA) and the operationalization of the Partnership for Africa Vaccine Manufacturing (PAVM). This demands funding, partnerships and commercial relationships to serve regional markets for medical supplies and equipment. It also requires accelerated investments in cross-border infrastructure, reduction of trade barriers, championing of trade partnerships between local suppliers and systematic elimination of factors that limit the potential of AfCFTA.

The current sense of urgency from African public, private actors, and their global partners toward expanding continental production capacity and access to vital health technologies should be capitalized on to support the roll out of regional manufacturing facilities that will close the continental supply deficit in medicines and health technologies.

Strengthen public health workforces

Maintaining a cadre of well-equipped and motivated health workforce is critical to a public health system's ability to respond to the increased demand and specific needs of a large-scale disease outbreak. Throughout the pandemic, the pleas of frontline health workers have been glaring. From being overworked, to being inadequately remunerated, and under trained to handle outbreaks of such proportions. In addition to lacking protection from having limited access to PPES and psychological support. Strengthening our response to public health emergencies therefore requires interventions that address the physical, mental and social well-being of health care workers. This includes:

- Increasing long term investment in education and training of health workers, ensuring training is responsive to current and future needs of the population. This includes strengthening infrastructure, policies and curricula of training institutions that are also gender-responsive.
- Establishing readily available platforms that provide continuous psychological support to healthcare workers.
- Member states to conduct regular human resource for health capacity needs assessment to guide decision-making around, prioritization of training, recruitment, and retention of health workers.
- Putting in place financial and non-financial incentives mechanisms that promote the performance and welfare of healthcare workers including their safety and security and healthcare needs.
- Increase investment towards all cadres of health workers, including providing them with decent work conditions and appropriate remuneration.

Embedding pandemic preparedness and response interventions within communal social and economic contexts and emphasizing the role of community health workers in healthcare provision would increase the relevance, acceptance and efficiency of the above interventions, helping to avoid

issues such as vaccine hesitancy and underreporting of notifiable diseases. Prioritizing and investing in community-integrated solutions involves meaningful community engagement in the design, implementation and review of initiatives, innovations and programs, including community-based disease surveillance, public health messaging, and collaborating with civil society organizations and community leaders in pandemic response actions.

Integrate gender-transformative and youth-friendly approaches

In many African countries, health and other sectoral policies have not adequately addressed the differential impact of health emergencies across dimensions of age and gender among others. Despite women and youth making up 50% and 60% of African populations respectively, they face poorer health outcomes and higher economic burdens of pandemics. For example, routine health care for women remains an issue of concern on the continent, with [East and Southern Africa](#) accounting for two thirds of maternal deaths around the world every year. Young people, already disproportionately represented in the unemployed population, faced [steeper declines in employment](#) during the COVID-19 pandemic, with young women worse affected than young men. [African women](#) have been and continue to be vulnerable to the economic impacts of COVID-19 due to limited financial independence underpinned by paternalism, poor and unequal labor compensation and challenges in access to safety nets. Addressing these disparities in a new public health order requires integrating more balanced health and economic policies from the onset that specifically address hidden labor, financial exclusion, and gender-related gaps in social safety nets. Similarly, [youth](#) will bear the brunt of future health threats and economic disruption of the latest pandemic. Therefore it is imperative that women and young people participate in and lead in the design of interventions, to ensure that decision-making spaces are inclusive and adequately address the needs of all. This calls for:

- Member states and regional bodies to include youth and women representatives within the governing mechanisms including boards, advisory and technical councils and many others.
- Member states and regional bodies put in place and update existing pandemic preparedness and response policies, strategies, guidelines, and initiatives to include youth and gender-responsive considerations, ensuring they are represented in existing or upcoming boards, committees, working groups, and or councils.

Now, more than ever, AU member states, regional bodies and institutions, and the wider global community need to work with urgency to seize the opportunities and take the necessary steps towards strengthening pandemic preparedness and response.



Conclusion

Taken together, these recommendations address the most pressing challenges in African pandemic preparedness and response, providing direction, capacity, and interoperability to the continent's health systems. A major step towards successful implementation of these recommendations would be to structure and resource a centralized funding mechanism, such as the proposed Fund for Global Health Security and Pandemic Preparedness, directed to nationally and regionally identified needs.

The COVID-19 pandemic has provided urgent lessons on preparedness and response measures, and current global efforts to minimize the impact of future health emergencies create a window of opportunity for Africa to model the needed changes in leadership, governance, and implementation. The above recommendations are designed as a bridge between the current state of play in health security policy and a continental vision of a stronger and more resilient public health system. Now, more than ever, AU member states, regional bodies and institutions, and the wider global community need to work with urgency to seize the opportunities and take the necessary steps towards strengthening pandemic preparedness and response.

Appendix 1

List of Documents Reviewed

African Union

1. Africa CDC Strategic Plan 2017-2021
2. Joint Continental Strategy COVID-19, 2020
3. Strengthening National Public Health Institutes, 2018
4. Declaration on accelerating implementation of International Health Regulations in Africa, 2017
5. PARTNERSHIP FOR AFRICA VACCINE MANUFACTURING (PAVM), 2020
6. The Critical Role of Community Health Workers in COVID-19 Vaccine Roll Out, 2020
7. The Critical Role of Community Health Workers in COVID-19 Vaccine Roll Out, 2020
8. Strategies for Managing Acute Shortages of PPE during the COVID-19 Pandemic, 2020
9. Statement of guidance and recommendations to African Union Member States on the epidemic modeling of the COVID-19 pandemic, 2020
10. Africa CDC Framework for AMR 2018 to 2023
11. Africa Medicines Agency, 2019
12. 2021 COVID-19 Strategic Preparedness and Response Plan (SPRP) for WHO AFRO, 2020
13. Framework for One Health Practice in National Public Health Institutes
14. Zoonotic Disease Prevention and Control
15. Africa CDC – 2020
16. The Maputo Declaration on Strengthening of Laboratory Systems
17. Africa Health Strategy 2016-2030

ECOWAS

1. WAHO Strategic Plan, 2016 - 2020
2. ECOWAS Regional Pharmaceutical Plan (ERPP), 2014
3. ECOWAS TRIPS Guidelines, 2012
4. Regional GMP Roadmap Framework for the Pharmaceutical Manufacturing Industry in ECOWAS, 2019

SADC

1. SADC Regional Indicative Strategic Development Plan
2. (RISDP), 2020–2030
3. Strategy for Pooled Procurement of Essential Medicines and Health Commodities, 2013-2017
4. Protocol of Health in SADC, 1999

EAC

1. Regional Risk and Crisis Communication Strategy, 2018/2019

2. The East African Community Regional contingency plan for epidemics due to communicable diseases, conditions, and other events of public health concern 2018- 2023
3. Cross border surveillance in the EAC region, 2018
4. Establishing a Regional Pool of Rapidly Deployable Experts in the EAC, 2018
5. How to develop key messages, 2018
6. Logistics Management of Regional Outbreak Preparedness, Early Warning and Response, 2018
7. How to Engage and Involve Stakeholders, 2019
8. How to Generate and Gain Approval for a Press Release, 2019
9. How to Manage Rumors, 2019
10. Reporting Emergencies and Activating EAC Regional Emergency Response, 2018
11. EAC Regional Strategy on the Prevention and Control of Transboundary Animal and Zoonotic Diseases, 2012
12. Regional Plan of Action for Avian Influenza pandemic preparedness and Response in East Africa, 2006
13. Institutional Framework for Cross-Border Integrated Disease Surveillance and Response in the
14. East African Region, 2011
15. Country pandemic preparedness and Response Funds (EPRF) plans
16. EAC Disaster Risk Reduction and Management Strategy 2012-2016.
17. East African Community Regional Health Sector Strategic Plan (2015-2020)
18. EAC Regional Health Policy 2016
19. EAC Regional Health Sector Strategic Plan 2015-2020
20. East African Community Medicines and Health Technologies Strategic Plan (2018-2022)
21. EAC GMP Standards for Pharmaceutical Manufacturers
22. EAC Harmonized Compendium on Safety and Vigilance of Medical Products and Health Technologies
23. Regulatory Framework for Medical Devices including in-Vitro Diagnostic Medical Devices
24. Requirements for Assessment and Market Authorization of In Vitro Diagnostic Medical Devices
25. EAC Medicines and Health Technologies Policy and Strategy (2018-2022)
26. EAC Post-Marketing Surveillance Strategy (2019-2023)

Appendix 2

List of References Cited

1. [Africa Academy of Sciences. https://www.aasciences.africa/publications/update-research-and-development-goals-covid-19-africa](https://www.aasciences.africa/publications/update-research-and-development-goals-covid-19-africa)
2. [Africa CDC COVID-19 Dashboard, accessed February 2022](#)
3. [Africa CDC. Regional Integrated Surveillance and Laboratory Network \(RISLNET\). https://africacdc.org/rislnet/](https://africacdc.org/rislnet/)
4. [Africa CDC. Regional Integrated Surveillance and Laboratory Network \(RISLNET\). https://africacdc.org/rislnet/](https://africacdc.org/rislnet/)
5. [Africa Centres for Disease Control and Prevention \(Africa CDC\). https://africacdc.org/about-us/](https://africacdc.org/about-us/)
6. [Africa Collaborative Initiative to Advance Diagnostics. https://africacdc.org/program/laboratory-systems-and-networks/africa-collaborative-initiative-to-advance-diagnostics/](https://africacdc.org/program/laboratory-systems-and-networks/africa-collaborative-initiative-to-advance-diagnostics/)
7. [Africa Sustainability Index. https://www.futureproofinghealthcare.com/en/africa-sustainability-index](https://www.futureproofinghealthcare.com/en/africa-sustainability-index)
8. [Africa's leaders call out discriminatory omicron travel bans. 8 Dec 2021. https://qz.com/africa/2099475/africas-leaders-call-out-discriminatory-omicron-travel-bans/](https://qz.com/africa/2099475/africas-leaders-call-out-discriminatory-omicron-travel-bans/)
9. [African Development Bank Group. NEPAD Infrastructure Project Preparation Facility \(NEPAD-IPPF\). https://www.afdb.org/en/topics-and-sectors/initiatives-partnerships/nepad-infrastructure-project-preparation-facility-nepad-ippf](https://www.afdb.org/en/topics-and-sectors/initiatives-partnerships/nepad-infrastructure-project-preparation-facility-nepad-ippf)
10. [African Union and Africa CDC launches Partnerships for African Vaccine Manufacturing \(PAVM\), framework to achieve it and signs 2 MoUs. https://africacdc.org/news-item/african-union-and-africa-cdc-launches-partnerships-for-african-vaccine-manufacturing-pavm-framework-to-achieve-it-and-signs-2-mous/](https://africacdc.org/news-item/african-union-and-africa-cdc-launches-partnerships-for-african-vaccine-manufacturing-pavm-framework-to-achieve-it-and-signs-2-mous/)
11. [African Union. CFTA - Continental Free Trade Area. https://au.int/en/ti/cfta/about](https://au.int/en/ti/cfta/about)
12. [African Union. National Public Health Institutes and Research. https://africacdc.org/program/national-public-health-institutes-and-research/](https://africacdc.org/program/national-public-health-institutes-and-research/)
13. [African Union. Treaty for the establishment of the African Medicines Agency. https://au.int/sites/default/files/treaties/36892-treaty-0069_-_ama_treaty_e.pdf](https://au.int/sites/default/files/treaties/36892-treaty-0069_-_ama_treaty_e.pdf)
14. [AUDA-NEPAD. https://www.nepad.org/program/african-medicines-regulatory-harmonisation-amrh](https://www.nepad.org/program/african-medicines-regulatory-harmonisation-amrh)
15. [Binder, S. et al. 2021 'African NPHI Responses to COVID-19'](#)
16. [Coltart, C. E., Lindsey, B., Ghinai, I., Johnson, A. M., & Heymann, D. L. \(2017\). The Ebola outbreak, 2013-2016: old lessons for new epidemics. *Philosophical transactions of the Royal Society of London. Series B, Biological sciences*, 372\(1721\), 20160297. https://doi.org/10.1098/rstb.2016.0297](https://doi.org/10.1098/rstb.2016.0297)
17. [Digital Diagnostics for Africa Network. https://www.imperial.ac.uk/global-development-hub/research/digital-diagnostics-for-africa/](https://www.imperial.ac.uk/global-development-hub/research/digital-diagnostics-for-africa/)
18. Documents reviewed included 14 from Africa CDC; 21 from the EAC; 4 from ECOWAS (WAHO); 4 from SADC. A detailed report of the policy analysis conducted by Future Africa Forum, will be made available for further reference.
19. Fall IS, Rajatonirina S, Yahaya AA, et al. Integrated Disease Surveillance and Response (IDSR) strategy: current status, challenges and perspectives for the future in Africa. *BMJ Global Health* 2019;4: e001427.
20. [Fitchett, J. R., Lichtman, A., Soyode, D. T., Low, A., Villar de Onis, J., Head, M. G., & Atun, R. \(2016\). Ebola research funding: a systematic analysis, 1997-2015. *Journal of global health*, 6\(2\), 020703. https://doi.org/10.7189/jogh.06.020703](https://doi.org/10.7189/jogh.06.020703)
21. [Future Proofing Healthcare. Africa Sustainability Index. https://www.futureproofinghealthcare.com/en/africa-sustainability-index](https://www.futureproofinghealthcare.com/en/africa-sustainability-index)
22. [Haider, N., Yavilinsky, A., Chang, Y. M., Hasan, M. N., Benfield, C., Osman, A. Y., Uddin, M. J., Dar, O., Ntoumi, F., Zumla, A., & Kock, R. \(2020\). The Global Health Security index and Joint External Evaluation score for health preparedness are](#)

- not correlated with countries' COVID-19 detection response time and mortality outcome. *Epidemiology and Infection*. 148, e210. <https://doi.org/10.1017/S0950268820002046>
23. [How COVID spurred Africa to plot a vaccines revolution.21 April 2021. https://www.nature.com/articles/d41586-021-01048-1](https://www.nature.com/articles/d41586-021-01048-1)
 24. [Inauguration of the diaTROPIX production platform at the Institut Pasteur of Dakar. https://www.fondation-merieux.org/en/news/inauguration-of-the-diatropix-production-platform-at-the-institut-pasteur-of-dakar/](https://www.fondation-merieux.org/en/news/inauguration-of-the-diatropix-production-platform-at-the-institut-pasteur-of-dakar/)
 25. [Kamwanja L, Saka J, Awotedu A, Fute I, Ndomondo-Sigonda M \(2011\) Situation analysis study on the medicines registration harmonization in Africa final report for the economic community of West African States. New Partnership For Africa's Development https://www.nepad.org/publication/situation-analysis-study-medicines-registration-harmonisation-africa-final-report-2](https://www.nepad.org/publication/situation-analysis-study-medicines-registration-harmonisation-africa-final-report-2)
 26. [Kenyan Auto-Disable Syringe Manufacturer Revital Healthcare Receives Grant Funding To Ramp Up Syringe Manufacturing To Address Looming Shortfall In Low- And Middle-Income Countries. https://africanmediaagency.com/kenyan-auto-disable-syringe-manufacturer-revital-healthcare-receives-grant-funding-to-ramp-up-syringe-manufacturing-to-address-looming-shortfall-in-low-and-middle-income-countries/](https://africanmediaagency.com/kenyan-auto-disable-syringe-manufacturer-revital-healthcare-receives-grant-funding-to-ramp-up-syringe-manufacturing-to-address-looming-shortfall-in-low-and-middle-income-countries/)
 27. [Medicines for Malaria Venture. https://www.mmv.org/mmv-open/pathogen-box/about-pathogen-box](https://www.mmv.org/mmv-open/pathogen-box/about-pathogen-box)
 28. [Mo Ibrahim Foundation. COVID-19 in Africa one year on: Impact and Prospects. 2021. https://mo.ibrahim.foundation/sites/default/files/2021-06/2021-forum-report.pdf](https://mo.ibrahim.foundation/sites/default/files/2021-06/2021-forum-report.pdf)
 29. [mVacciNation - Frequently Asked Questions \(FAQs\). https://www.nepad.org/microsite/mvaccination-frequently-asked-questions-faqs](https://www.nepad.org/microsite/mvaccination-frequently-asked-questions-faqs)
 30. [Nature. World's second-deadliest Ebola outbreak ends in Democratic Republic of the Congo. https://www.nature.com/articles/d41586-020-01950-0](https://www.nature.com/articles/d41586-020-01950-0)
 31. [Nigeria Centre for Disease Control. https://ncdc.gov.ng](https://ncdc.gov.ng)
 32. Njidda AM, Oyeibanji O, Obasanya J, et al. The Nigeria Centre for Disease Control. *BMJ Global Health* 2018;3: e000712.
 33. Njidda AM, Oyeibanji O, Obasanya J, et al. The Nigeria Centre for Disease Control *BMJ Global Health* 2018;3:e000712.
 34. Nkengasong, J. 2020, 'Africa Needs a New Public Health Order to Tackle Infectious Disease Threats'
 35. [Pharmaceutical Manufacturing Plan for Africa.https://www.nepad.org/publication/pharmaceutical-manufacturing-plan-africa](https://www.nepad.org/publication/pharmaceutical-manufacturing-plan-africa)
 36. [Razavi, A., Erondy, N., & Okereke, E. \(2020\). The Global Health Security Index: what value does it add?. *BMJ global health*, 5\(4\), e002477. https://doi.org/10.1136/bmjgh-2020-002477](https://doi.org/10.1136/bmjgh-2020-002477)
 37. [Shortage of personal protective equipment endangering health workers worldwide. https://www.who.int/news/item/03-03-2020-shortage-of-personal-protective-equipment-endangering-health-workers-worldwide](https://www.who.int/news/item/03-03-2020-shortage-of-personal-protective-equipment-endangering-health-workers-worldwide)
 38. [Strengthening public health laboratories in the WHO African Region: a critical need for disease control https://www.afro.who.int/sites/default/files/2017-06/ahm12-page-47-52-phl-in-afr.pdf](https://www.afro.who.int/sites/default/files/2017-06/ahm12-page-47-52-phl-in-afr.pdf)
 39. [Strengthening public health laboratories in the WHO African Region: a critical need for disease control. https://www.afro.who.int/sites/default/files/2017-06/ahm12-page-47-52-phl-in-afr.pdf](https://www.afro.who.int/sites/default/files/2017-06/ahm12-page-47-52-phl-in-afr.pdf)
 40. Talisuna A, Yahaya AA, Rajatonirina SC, et al Joint external evaluation of the International Health Regulation (2005) capacities: current status and lessons learnt in the WHO African region *BMJ Global Health* 2019;4: e001312.
 41. The Lancet Infectious Diseases. Time for Africa to future-proof, starting with COVID-19. *Lancet Infect Dis*. 2022 Feb;22(2):151. doi: 10.1016/S1473-3099(22)00011-1. Epub 2022 Jan 13. PMID: 35033233; PMCID: PMC8758148.
 42. [The Maputo Declaration on Strengthening of Laboratory Systems. 2008. https://www.who.int/publications/m/item/the-maputo-declaration-on-strengthening-of-laboratory-systems](https://www.who.int/publications/m/item/the-maputo-declaration-on-strengthening-of-laboratory-systems) Africa Infodemic Response Alliance (AIRA). <https://www.afro.who.int/aira>
 43. Tom-Aba, D., Silenou, B. C., Doerrbecker, J., Fourie, C., Leitner, C., Wahnschaffe, M., Strysewske, M., Arinze, C. C., & Krause, G. (2020). The Surveillance Outbreak Response Management and Analysis System (SORMAS): Digital Health Global Goods Maturity Assessment. *JMIR public health and surveillance*, 6(2), e15860. <https://doi.org/10.2196/15860>
 44. [West Africa Health Organization \(WAHO> Traditional medicines. https://www.wahooas.org/web-ooas/en/programmes/p06-traditional-medicine](https://www.wahooas.org/web-ooas/en/programmes/p06-traditional-medicine)
 45. [WHO COVID-19 Dashboard, accessed February 2022](#)

46. [WHO Director-General's opening remarks at the media briefing on COVID-19 - 11 March 2020. https://www.who.int/director-general/speeches/detail/who-director-general-s-opening-remarks-at-the-media-briefing-on-covid-19---11-march-2020](https://www.who.int/director-general/speeches/detail/who-director-general-s-opening-remarks-at-the-media-briefing-on-covid-19---11-march-2020)
47. [WIPO. Rwanda and Senegal will host Africa's first COVID-19 vaccine plants: what's known so far. https://www.wipo.int/wipo_magazine/en/2021/04/article_0002.html](https://www.wipo.int/wipo_magazine/en/2021/04/article_0002.html)
48. [World Health Organization. Ebola outbreak 2014-2016 - West Africa https://www.who.int/emergencies/situations/ebola-outbreak-2014-2016-West-Africa](https://www.who.int/emergencies/situations/ebola-outbreak-2014-2016-West-Africa)
49. [World Health Organization. IHR Score per capacity. https://extranet.who.int/e-spar/#capacity-score](https://extranet.who.int/e-spar/#capacity-score)
50. [World Health Organization. Less than 10% of African countries to hit key COVID-19 vaccination goal. 28 Oct 2021. https://www.afro.who.int/news/less-10-african-countries-hit-key-covid-19-vaccination-goal](https://www.afro.who.int/news/less-10-african-countries-hit-key-covid-19-vaccination-goal)
51. [World Health Organization. International Health Regulations \(2005\) Third Edition. https://www.who.int/publications/i/item/9789241580496](https://www.who.int/publications/i/item/9789241580496)

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