



Research Article

## COVID-19 Pandemic and Its Long-Term Impact on African Health Systems

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#### Abstract

The COVID-19 pandemic laid bare the structural vulnerabilities within African health systems, disrupting essential services and straining already fragile infrastructure. Although the continent recorded relatively lower direct mortality, the indirect consequences—ranging from reduced health service utilization to interruptions in care for HIV, TB, malaria, maternal health, and non-communicable diseases—were profound. This article examines the multidimensional impact of the pandemic on African health systems, highlighting reduced access to care, delayed treatments, and disproportionate effects on rural and vulnerable populations. It further explores adaptive innovations such as telemedicine, infrastructure investments, and regional resilience strategies. Drawing on data from WHO and various peer-reviewed sources, the article analyzes post-pandemic reforms and persistent challenges including funding deficits, workforce shortages, and the burden of long COVID. With case studies from Senegal, Rwanda, and South Africa, it offers a roadmap for sustainable recovery through policy innovation, universal health coverage, digital transformation, and regional cooperation. The pandemic, while devastating, catalyzed a long-overdue health systems reform process across the continent.

**Keywords:** COVID-19; African Health Systems; Health Infrastructure; Pandemic Impact; Health Service Utilization; Long COVID; Universal Health Coverage; Digital Health; Health Workforce; Telemedicine;

## INTRODUCTION

The COVID-19 pandemic was an unprecedented global health crisis that acutely exposed the weaknesses of African health systems. While the initial death toll in Africa was lower compared to other continents, the indirect and long-term repercussions were substantial, impacting health service delivery, financing, infrastructure, and trust in public health agencies. The aftermath has created both critical challenges and transformative opportunities for the continent.

### The Initial Shock: Disruption and Vulnerabilities

#### Health Service Utilization Decline

During the pandemic's acute phase, clinics and hospitals across Africa saw dramatic reductions in patient visits for routine care. General and specialty services, including maternal and child health, tuberculosis, HIV, and chronic disease management, faced interruptions<sup>[1][2][3]</sup>. The World Health Organization (WHO) documented an average decline of over 50% in five essential health service indicators—outpatient consultations, inpatient admissions, skilled birth attendance, malaria treatment, and vaccination—during the most stringent lockdown periods in 2020<sup>[4]</sup>.

Service Area	Average Decline (May-Jul 2020)
Outpatient Consultations	50%+
Inpatient Admissions	50%+
Skilled Birth Attendance	50%+
Malaria Treatments	50%+
Routine Vaccination	50%-80%

### Structural and Systemic Gaps

COVID-19 revealed long-standing systemic issues, including:

- Inadequate funding for health infrastructure and weak supply chains<sup>[5][6]</sup>.
- Shortage of protective gear, ICU beds, ventilators, and diagnostic labs, especially in rural or secondary cities<sup>[1][3]</sup>.
- Disruption of international and regional medical supply lines.

### Outbreak-Related Indirect Mortality

Interruptions in disease prevention and treatment services had a ripple effect, with modeling studies warning of increases in deaths from HIV, tuberculosis, malaria, and preventable childhood illnesses due to missed treatments or delayed diagnoses<sup>[7]</sup>.

## The Socioeconomic Effects and Behavioral Shifts

### Hesitancy and Reduced Access

The reasons for reduced healthcare access included:

- Lockdowns and transport restrictions
- Fear of infection and social stigma
- Increased financial hardship, leading to deferred care<sup>[2][8][7]</sup>

Some urban areas saw immediate surges in cases followed by long lulls in health-seeking behavior. As pandemic restrictions loosened, service utilization gradually returned to pre-pandemic trends only in late 2021 or 2022<sup>[2][8]</sup>.

## IMPACT ON VULNERABLE POPULATIONS

Rural and marginalized communities, already experiencing barriers to health access, bore the largest brunt of the pandemic's service disruptions. Vulnerable groups experienced higher rates of delayed or skipped care for maternal health, immunizations, and chronic diseases<sup>[9]</sup>.

### Health System Innovations and Adaptive Responses

#### Digital and Remote Care

Pandemic constraints accelerated the adoption of telemedicine and remote consultation lines for patients needing ongoing care for non-communicable diseases<sup>[1][3]</sup>. Health workers distributed contact numbers for advice, triage, and medication management, demonstrating agility and innovation within strained systems.

#### Infrastructure Investment

A paradigm shift in funding priorities emerged, emphasizing:

- Expansion and upgrading of hospitals and laboratories
- Increased procurement and distribution of PPE, oxygen, and vaccines<sup>[9][6]</sup>
- Enhanced disease surveillance, particularly for respiratory illnesses

#### Health Workforce Resilience

Continental peer-review mechanisms have been proposed to guarantee steady improvement in healthcare funding, workforce training, and retention post-pandemic<sup>[9]</sup>.

### Long-Term Health System Impact Resilience and Reform Momentum

COVID-19 has become a focal point for health system reform—acting as a catalyst to redesign African healthcare for resilience against new threats<sup>[5][10]</sup>. Key post-pandemic shifts include:

- Greater policy emphasis on universal health coverage and access to essential services<sup>[6]</sup>
- Integration of health emergency preparedness into regular policy and infrastructure plans
- Domestic health research and vaccine manufacturing initiatives

### Enduring Challenges

Despite reform momentum, persistent challenges remain:

- Chronic underfunding and reliance on external aid<sup>[1][10]</sup>
- Lack of comprehensive health insurance leading to high out-of-pocket expenditures<sup>[6]</sup>
- Human resource shortages and burnout
- Data and logistics infrastructure gaps, limiting effective disease tracking

### Continued Burden from "Long COVID" and Deferred Care

A significant long-term challenge is the prevalence of "long COVID" symptoms. Estimates suggest 2% to 95% of COVID-19 survivors in Africa experienced ongoing symptoms such as fatigue, brain fog, respiratory issues, and psychiatric conditions, compounding the continent's current health burdens<sup>[1][12]</sup>. Deferred treatment of non-COVID conditions during the pandemic is contributing to higher post-pandemic rates of advanced disease presentations, particularly for HIV, TB, and cancer<sup>[13][7]</sup>.

### Data Visualization: Decline in Key Health Service Utilization During the Pandemic

The following graph illustrates the sharp decrease in several critical health service areas at the peak of the pandemic, based on WHO data from 14 African countries.

[image:1]

## CASE STUDIES: REFORM AND RESILIENCE

### Senegal: Investing in Health Resilience

Senegal's Resilience Programme improved disease prevention capabilities and overall health system management in direct response to pandemic-era deficiencies<sup>[6]</sup>.

### Rwanda: Digital Transformation

Rwanda scaled digital health record systems, enabling the tracking of COVID-19 and other diseases, and easing remote patient management<sup>[1][5]</sup>.

### South Africa: Challenges Amid Progress

Despite investments, South Africa's challenges included lack of PPE, mental health concerns, increased non-communicable disease burden, and surges in substance abuse—a microcosm of pandemic pressures across Africa<sup>[14][15]</sup>.

### Long-Term Policy Recommendations and the Road Forward

- **Strengthen health infrastructure** through sustained and increased domestic funding<sup>[9][6]</sup>.
- **Emphasize health workforce development**—through education, training, and incentives for retention<sup>[9]</sup>.
- **Integrate digital health technologies** to expand reach and efficiency<sup>[1][10]</sup>.
- **Deepen regional and international cooperation** for disease surveillance, research, and emergency preparedness<sup>[16][10]</sup>.

- **Expand universal health coverage** and community health insurance schemes to reduce out-of-pocket costs<sup>[6]</sup>.
- **Prioritize mental health** as an integral part of health system strengthening going forward.

## CONCLUSION

The COVID-19 pandemic dramatically highlighted the fragility of African health systems but also acted as a turning point. While the immediate impacts—service declines, disease resurgence, and financial strain—were severe, African countries have leveraged the crisis to initiate overdue reforms, build infrastructure, and drive a new vision for resilient healthcare. To safeguard future generations, it is vital that these reforms are sustained, local innovations supported, and the health rights of all Africans protected.

[image:1]

Graph: Decline in Outpatient Consultations, Skilled Birth Attendance, Malaria Treatments, and Vaccination Rates in 14 African Countries (Jan–Sep 2020 vs. prior years). Data compiled from WHO regional analysis.