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**Perspective Article**

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# Current Context of Pneumonia Amidst the COVID-19 Pandemic in Africa

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**ABSTRACT**

Since the emergence of the coronavirus disease 2019 (COVID-19) pandemic, several countries have been strongly affected by the different impacts of the disease. This has not been different in Africa, where in addition to the current load of COVID-19, there are other epidemics (such as pneumonia) that have aggravated the situation. In this perspective article, we discuss various aspects of pneumonia amidst the COVID-19 pandemic in Africa, including its burden, current status and efforts, and related challenges.

**Keywords:** COVID-19, pandemics, pneumonia, Africa, health status disparities

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## INTRODUCTION

With a change in demographic structure [1], Sub-Saharan Africa (SSA) is witnessing a double burden of communicable and non-communicable diseases. Despite the ongoing national and international efforts to combat the high infection rates in the region, [2] these programs continuously face a multitude of challenges, such as weak healthcare systems, instabilities, and new emerging outbreaks [3]. The latest outbreak still underway– the coronavirus disease 2019 (COVID-19) pandemic – has further amplified the impediment to achieving the goals of the World Health Organization (WHO). Among these goals is the WHO Global Vaccination Action Plan with the mission to protect populations – especially children – from vaccine-preventable diseases and outbreaks by 2020 [4].

Pneumonia is the leading cause of death among children worldwide, yet it has been understudied in research, which pressed the United Nations Children's Fund (UNICEF) to identify it as the major "forgotten killer of children" [5]. Moreover, pneumonia imposes high risks on the elderly aged above 65 years [6] and can be critical for immune-deficient individuals, who are more prone to infection by different pathogens [7]. For the aforementioned reasons, the WHO launched the community case management of pneumonia (CCMp) strategy in 1986 [8].

In fact, according to the WHO, the SSA has the highest children pneumonia-related mortality compared to other regions of the world [9]. In addition, the CCMp strategy was lightly applied in this region at first [10], and gradually proved to be effective almost two decades later [11].

Africa is home to most infectious diseases, hence worsening pneumonia's incidence and mortality. First, measles or pertussis viruses can cause pneumonia [8,12], which could be prevented by effective vaccines. However, many African nations were far behind the WHO vaccination goals, even before the COVID-19 pandemic [13,14].

Second, Africa accounts for 29% of global tuberculosis cases [15] that cause pneumonia [16]. Even worse, its symptoms are typical of other bacterial pneumonia, which leads to inadequate treatment [17]. Third, the continent carries almost two-thirds of the total HIV infections responsible for the immunodeficiency syndrome [18], exposing these patients to increased risks of complications from pneumonia [7].

The COVID-19 pandemic has caused more disruptions in the fight against these diseases, given that it has slowed down different vaccination programs and campaigns that target the prevention of pneumonia-related infections [18-20]. To help fight pneumonia amidst COVID-19, it is of utmost importance to investigate contemporary challenges, as well as the efforts that are employed to combat them. Here we discuss various aspects of pneumonia amidst the COVID-19 pandemic in Africa, including its burden, current status and efforts, and related challenges.

## BURDEN AND CURRENT STATUS OF PNEUMONIA IN AFRICA DURING THE COVID-19 PANDEMIC

During the COVID-19 pandemic, the 'all-cause' pneumonia deaths increased by over 75% [21]. Most recently, 60% to 80% of pneumonia cases have been associated with COVID-19. Before the emergence of the COVID-19 pandemic, the majority of the pneumonia cases were community-acquired. Since the rise of the pandemic, however, pneumonia has become the most common complication of COVID-19 [22]. Compared to other regions worldwide, Africa experienced a later emergence of COVID-19, with the first case reported on February 14, 2020 in Egypt [23]. As of August 2021, the cases of COVID-19 have surpassed 7.7 million [24], where about 15% of the cases are severe – that is, the patient necessitates supplemental oxygen in a hospital setting, while around 5% of people battle critical infections [25], requiring a ventilator.

The majority of deaths due to pneumonia have occurred in SSA involving children aged under five years. Per UNICEF Executive Director, "While the globe grapples with the pandemic and also the severe consequences it poses for the foremost vulnerable, we must not lose sight of the fact that pneumonia continues to claim over 2,000 young lives every day". In low-income countries, the rationale behind pneumonia mortality is not always linked to the case severity or delivery of treatment; the financial crises among these countries mark for another key explanation. Despite the fact that treatment for pneumonia often requires simple tools and facilities (e.g., medical oxygen and antibiotics), families from low-income countries cannot afford treatment costs. For reference, the standard treatment costs a minimum of £30-45 per child, serving as an outsized barrier against the treatment of pneumonia [26]. It should be noted that 60% of the world's population who lives under the line of poverty is concentrated in SSA [27]. Withal, the COVID-19 pandemic particularly struck the African countries' economic pursuits, [28] resulting in an elevated poverty rate and subsequently higher pneumonia mortality in Africa during this period.

## CURRENT EFFORTS AND CHALLENGES FACING RESPONSES TO PNEUMONIA IN AFRICA DURING THE COVID-19 PANDEMIC

The response to the pandemic was rapid in public health systems in Africa. On February 3, 2020, the African Novel Coronavirus Task Force was established by the African Centers for Disease Control and Prevention. The task force works with the WHO African Region on several axes: community participation, surveillance, screening at entry points, prevention and control of infections in health facilities, and clinical examination of people with severe COVID-19 [29].

At the same time, African countries have set up emergency operations centers to coordinate rapid response activities. Public health programs have also been stepped up by national authorities. Most significant is the creation of an interactive dashboard for the WHO African Region to view the COVID-19 situation in the region. Moreover, some countries have increased their healthcare capacity in preparation for a potential rise in cases. Many countries have also created specific quarantine centers [30].

Currently, efforts continue to ensure effective tracking of potential contacts with infected people. In addition, the partners have also indicated their support to countries to implement early detection studies, such as the First Few X (FFX) case and the COVID-19 contact investigation protocol and severity in a timely manner. Airports across the continent are testing temperatures for passengers upon arrival and departure, and most African airlines have temporarily suspended flights to endemic countries. Most governments have suspended educational institutions to limit transmission of the virus [30].

With the support of governments and donors, some African countries are making considerable efforts to provide food, relief resources, and other forms of support to the poor. However, the challenges facing the African nations with regards to delivering appropriate health care amidst COVID-19 are numerous [30]. According to the Johns Hopkins Center for Health Security, Africa is least prepared to treat patients, respond to emergencies, and protect health workers [31].

Unfortunately, Africa has the lowest critical healthcare capacity in the world. COVID-19 severe cases lead to respiratory insufficiency syndrome requiring ventilation support. To address these complications, electricity for utilizing ventilators and oxygen is needed, which is often inaccessible. The central challenge involves social and religious gatherings. Although numerous countries have banned such gatherings, the decision has often faced resistance from some people, reducing physical distancing and exacerbating the epidemic. Lockdowns have interrupted commercial activities, making the poor more vulnerable to economic problems. Furthermore, the ease of crossing borders greatly facilitates the transmission of the virus, while overcrowded cities represent an additional burden for many African countries [30].

Not least important, the global scenario of COVID-19 vaccination is also quite worrying in Africa. Africa has so far (September 21, 2021) registered 5,926,202 confirmed COVID-19 cases [32]. If, on the one hand, estimates indicate that 43.5% of the world population has received at least one dose of a COVID-19 vaccine, on the other only 2% of people in low-income countries are in this situation [33]. COVID-19 vaccination rates in Africa are shown in **Table 1**.

**Table 1.** Current status of COVID-19 vaccination in Africa

| Continent | Share of people fully vaccinated against COVID-19 | Share of people only partly vaccinated against COVID-19 |
|---|---|---|
| Africa | 3.99% | 2.14% |

Adapted from: Our World in Data (September 21,2021) [33]

## FINAL CONSIDERATION

The emergence of new variants of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), together with low rates of COVID-19 vaccination in Africa in the face of inequality in the vaccine distribution [34] and low vaccination rates for other diseases [35], demand rapid and urgent action by governments and health authorities. This is essential not only to control the COVID-19 spread and the increase in cases of pneumonia, as well as to control several other epidemics taking place on the continent [36,37].

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