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Mpox Outbreak in Africa in 2024: A Perspective

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ABSTRACT

Monkeypox is a zoonotic disease caused by the monkeypox virus, which belongs to the Orthopoxvirus genus, along with the variola, vaccinia, and cowpox viruses. In July 2022, the WHO declared monkeypox a Public Health Emergency of International Concern due to the unprecedented global spread of the disease beyond its previously endemic regions in Africa. On August 13, 2024, the Africa Centres for Disease Control and Prevention (Africa CDC) issued a declaration designating mpox as a Public Health Emergency of Continental Security (PHECS) in Africa to tackle the substantial public health threats it presents. Investigations in the DRC indicate that heterosexual transmission, particularly among female sex workers (9%), is driving the outbreak contrarily to the 2022 situation in Europe, where the spread was primarily among men who have sex with men. It underscores the importance of regional collaboration and leadership in managing public health threats, fostering a more resilient and self-reliant Africa in the face of global health challenges.

Keywords: Monkeypox; Mpox; Africa; Surveillance; Vaccine

Abbreviations: Africa CDC: Africa Centres for Disease Control and Prevention; PHECS: Public Health Emergency of Continental Security; DRC: Democratic Republic of the Congo; PEPV: Post-Exposure Prophylaxis; PPV: Primary Preventive Vaccination

Introduction

Monkeypox is a zoonotic disease caused by the monkeypox virus, which belongs to the Orthopoxvirus genus, along with the variola, vaccinia, and cowpox viruses [1]. Since the first human case was identified in the Democratic Republic of the Congo in 1970, the disease has led to occasional infections and outbreaks, primarily confined to certain countries in West and Central Africa [2]. In July 2022, the WHO declared monkeypox a Public Health Emergency of International Concern due to the unprecedented global spread of the disease beyond its previously endemic regions in Africa declaration highlighted the need for global cooperation to address this previously neglected illness [3]. The 2022 outbreak has been largely linked to consuming wild game that was not properly cooked and poor hygiene, as well as close intimate contact, including sexual activity. Most cases have been diagnosed in men who have sex with men, who often show new epidemiological and clinical features, while the disease has affected women less frequently [4,5]. During the 2022 outbreak, the incubation period typically ranges from 7 to 10 days. Most patients develop a systemic illness characterized by fever, muscle aches, and a distinctive rash. The rash begins as papules and progresses to vesicles, pustules, and crusts, commonly appearing in the genital, anal, or oral regions and often affecting the mucous membranes [6]. Up to 40% of patients experience complications that necessitate medical treatment such as antiviral therapy, antibiotics, and pain management. These complications include rectal pain, difficulty swallowing (odynophagia), swelling of the penis (penile edema), and the development of skin and anorectal abscesses [7].

Most individuals experience an illness that resolves on its own. However, between 1% and 13% may need to be hospitalized for treatment or isolation, and the case-fatality rate remains below 0.1%. Diagnosis is achieved by detecting Orthopoxvirus DNA using PCR tests on samples from lesions or body fluids. Patients exhibiting severe

symptoms and those at higher risk for serious disease, such as immunosuppressed individuals, may benefit from antiviral treatments like tecovirimat [8]. On August 13, 2024, the African Centres for Disease Control and Prevention (Africa CDC) issued a declaration designating mpox as a Public Health Emergency of Continental Security (PHECS) in Africa to tackle the substantial public health threats it presents [9]. The decision was prompted by the deteriorating mpox situation in Africa, where since 2022, there have been 40,874 reported cases and 1,512 deaths across 15 African Union member states [9]. In 2024, there have been 17,541 reported cases and 517 deaths across 13 African Union member states. These numbers reflect a 160% increase in cases and a 19% rise in deaths compared to the same period in 2023 [9]. In 2023, there was a 79% increase in the number of mpox cases compared to 2022. The Democratic Republic of the Congo (DRC) is responsible for 96% of all reported cases and 97% of all deaths in 2024 [10].

Investigations in the DRC indicate that heterosexual transmission, particularly among female sex workers (9%), is driving the outbreak. This pattern contrasts with the 2022 situation in Europe, where the spread was primarily among men who have sex with men [11,12]. Also, in Democratic Republic of Congo, the number of confirmed cases is 196,57,38 respectively in July 28, August 04 and August 11, 2024 (Figure 1-3). In addition, in Burundi, the number of confirmed cases is 9,31,43,70, respectively in July 28, August 04,11 and 18, 2024. (Figure 1-4) Furthermore, in Central African Republic, the number of confirmed cases is 3,8,1 respectively in July 28, August 04 and August 11, 2024. (Figure 1-3) Effective control of the outbreak relies on early diagnosis, isolation, partner notification, and contact tracing, complemented by appropriate vaccination strategies and behavior changes in response to increased transmission. Mass vaccination against mpox was neither required nor recommended, and this stance remains valid. Mpox vaccines can be utilized for post-exposure prophylaxis (PEPV) or primary preventive vaccination (PPV).

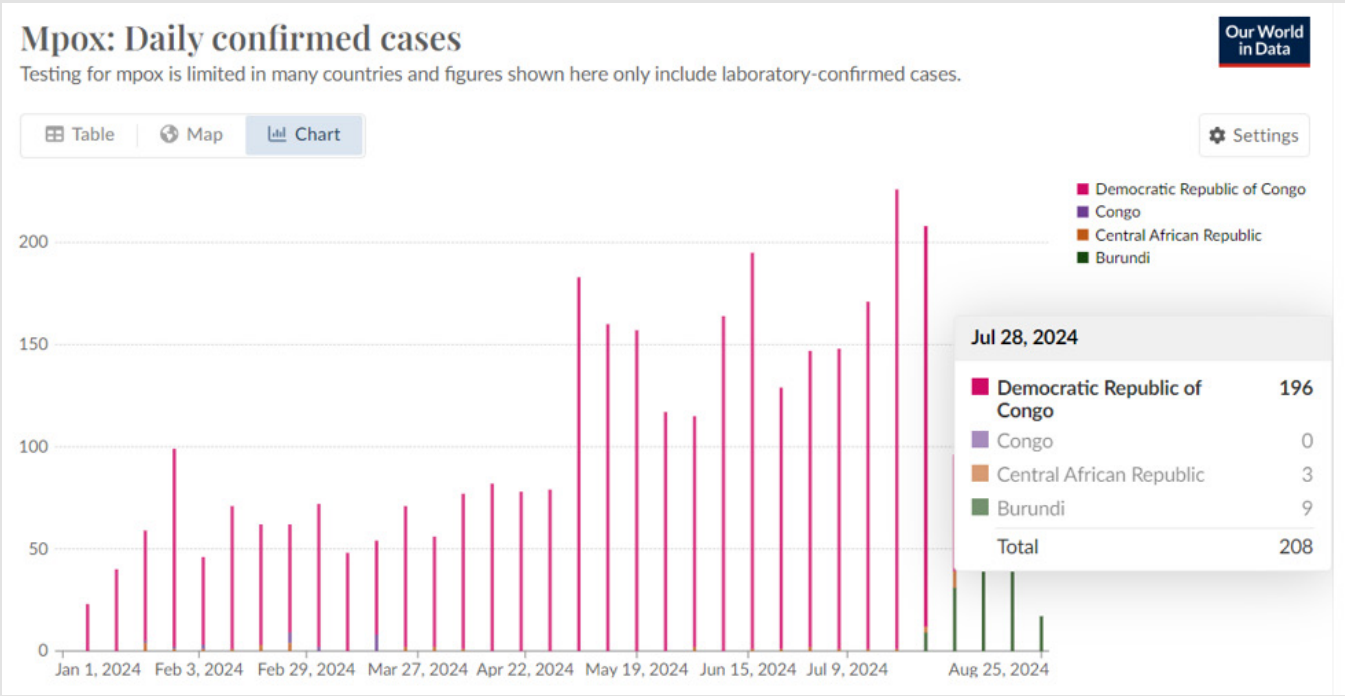

Figure 1: Mpox: Daily Confirmed cases [12].

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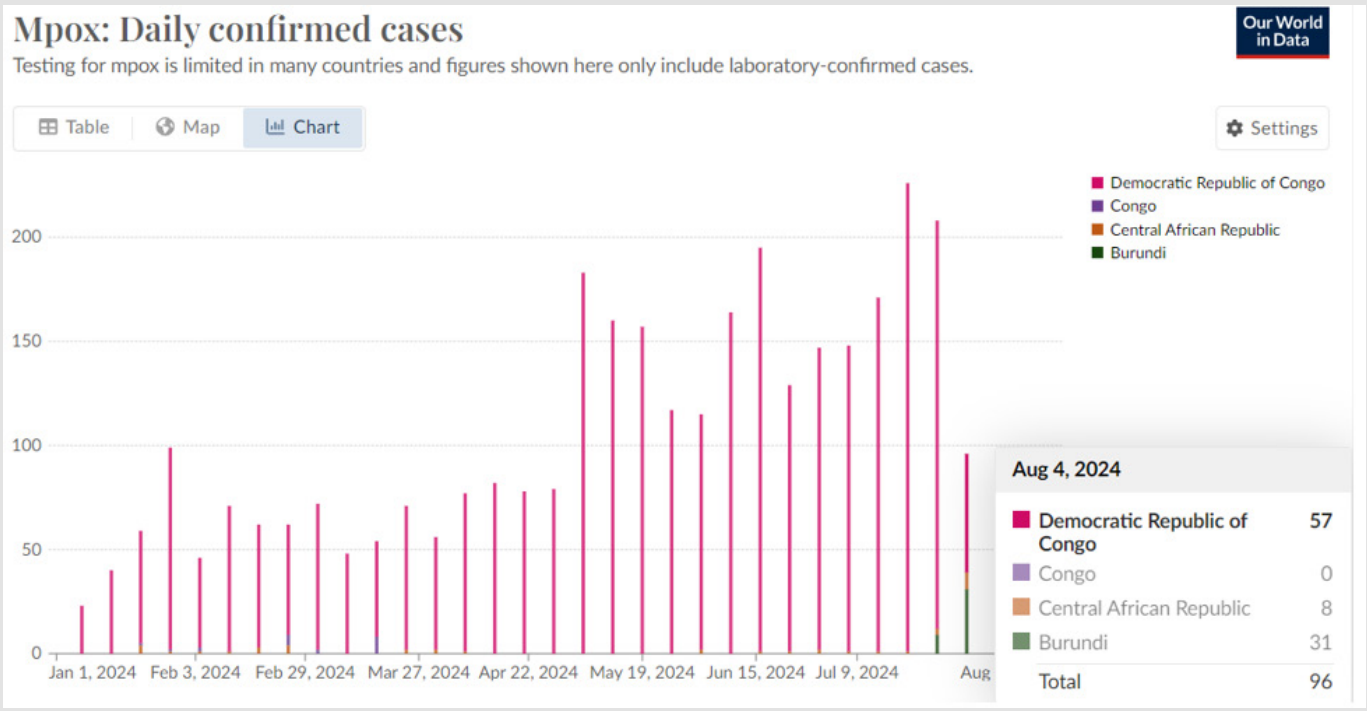

Figure 2: Mpox: Daily Confirmed cases [12].

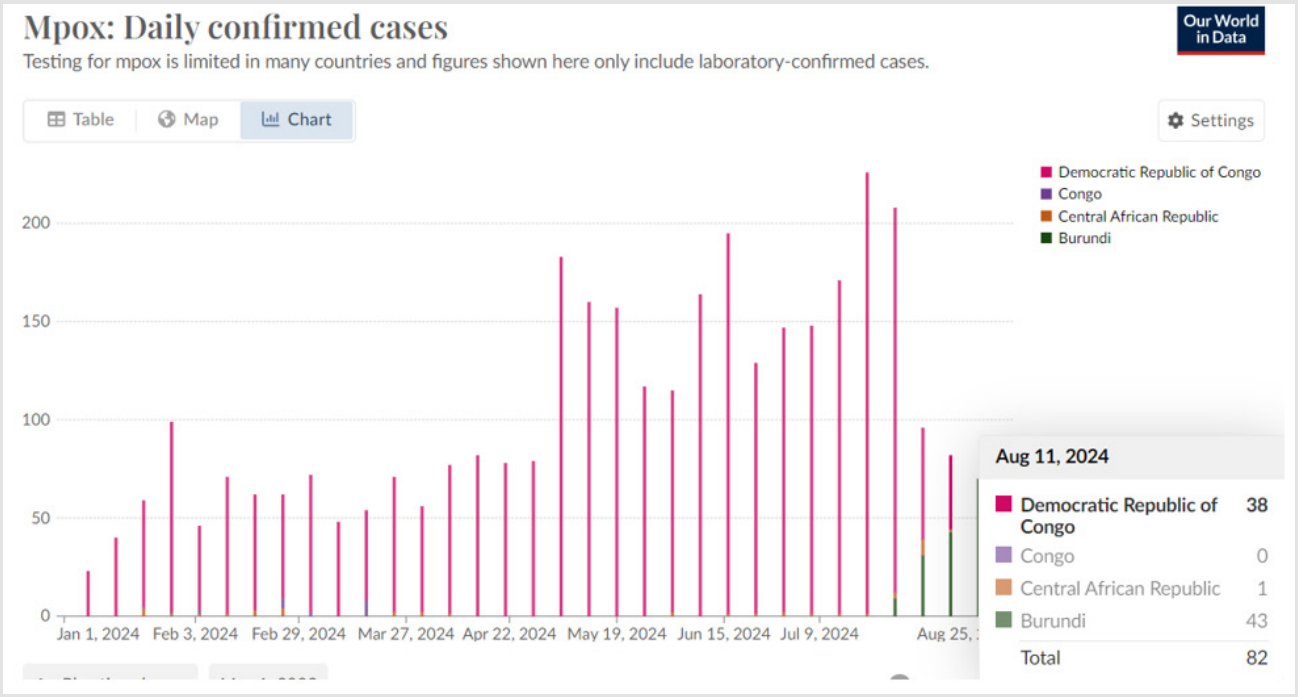

Figure 3: Mpox: Daily Confirmed cases [12].

Vaccination efforts should be supported by comprehensive surveillance and contact tracing, along with a robust information campaign and rigorous pharmacovigilance. Furthermore, a research collaborative group should be formed to advance mpox research, provide up-to-date epidemiological data, facilitate information sharing among African countries, and address gaps in understanding the disease's spread, particularly in the DRC. It is important to mobilize governments, and partners and also strengthen coordination among key stakeholders, ensuring a unified and proactive approach to addressing this and other future health crisis in the region. Also, it underscores the importance of regional collaboration and leadership in managing public health threats, fostering a more resilient and self-reliant Africa in the face of global health challenges.

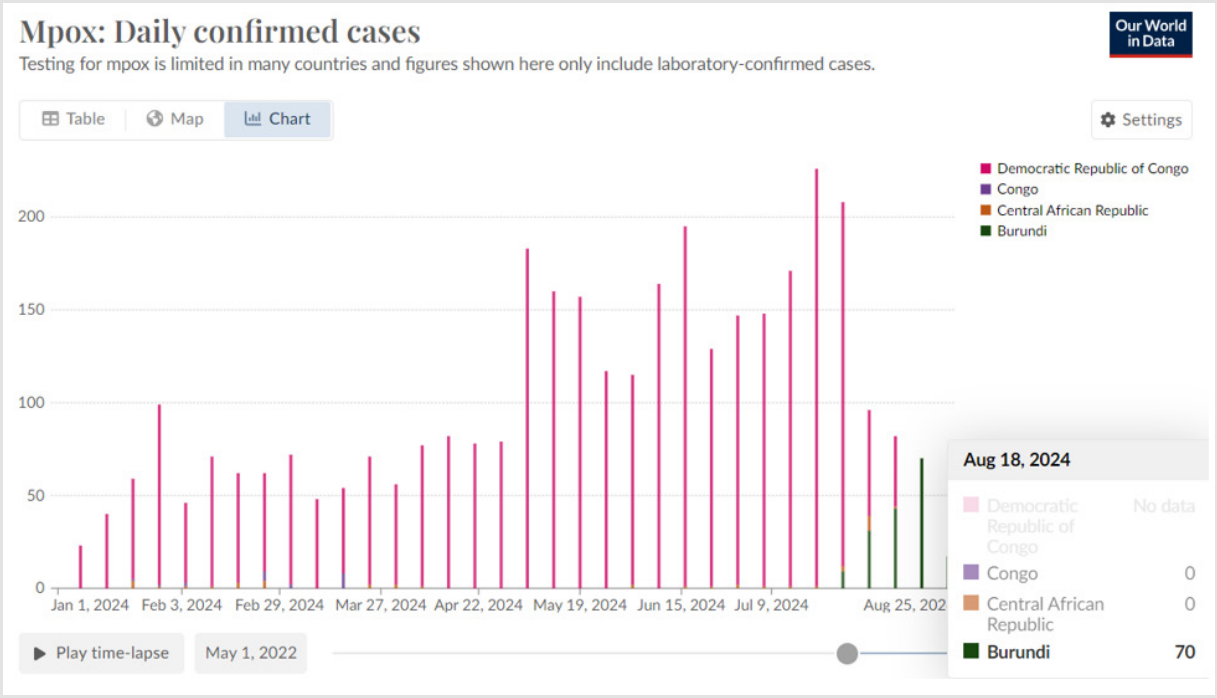

Figure 4: Mpox: Daily Confirmed cases [12].

Authors' Contributions

RA: study selection, data extraction, data synthesis, quality assessment, and drafting the manuscript. AB: research design, study selection, data extraction, and revision of the manuscript. MC: research design and revision of the manuscript. All authors read and approved the final manuscript.

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Conflicts of Interest

The authors declare no conflict of interest.

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