

Response to the multi-country monkeypox outbreak: a view from Africa

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Early in May 2022, the world was stunned by the concurrent emergence of monkeypox (MPX) cases in many countries outside the known endemic zones of the disease in Africa.¹ This attracted global attention and rapid response, especially in non-endemic countries. Action plans, primarily, the release of smallpox vaccines from the global stockpile, were initiated to control the outbreak, protect cases and their contacts, and stop MPX from becoming endemic in Europe and other non-endemic countries.² Conversely, while MPX ravaged different communities in Africa, the world was silent as calls for support for field investigations during and between outbreaks, and research to generate data for a better understanding of MPX epidemiology, went unheeded, at both national and international levels.

The inattention and lack of adequate response to the continuous transmission of MPX in Africa over the past 30 years, further highlights the past inequities in global health, more recently demonstrated by the poor availability of, and inadequate access in African countries to, COVID-19 vaccines and treatments for MPX including TPOXX (tecovirimat) and Tembexa (cidofovir). This recurrent problem³ should teach Africa a lesson, if not yet learned, that the continent cannot depend solely on equity to solve its infectious disease outbreak problems.

The first report of monkeypox was in 1958, in laboratory monkeys imported from Singapore to Denmark, where they contracted the disease after exposure to other laboratory animals already housed in the Danish facility.⁴ The source of the infection of the monkeys remains a mystery. The first human case of MPX occurred in a 9-month-old boy in the Democratic Republic of Congo (DRC) in 1970.⁵ Currently, MPX is endemic in sub-Saharan Africa,² with human MPX cases first reported in Liberia and Sierra Leone (1970–1971), Cote d'Ivoire and Nigeria (1971), Gabon (1987), Cameroon (1989), Central African Republic (2001), Republic of the Congo (2003), and in Benin, Ghana, and South Africa—all reporting in 2022. In 2003, the USA, became the first country outside Africa, to report human MPX cases. A total of forty-seven confirmed and probable MPX cases were reported in people who became ill after having contact with pet prairie dogs that had contact with MPX-infected rodents imported from Ghana.⁶ Between 2018 and 2022, the MPV was imported into other countries outside Africa, by travellers from endemic regions, including UK (2018, 2019, and 2022) Israel (2018), Singapore (2019) and USA (twice

in 2021). These incidents were self-limiting, with no associated large outbreaks or community transmissions.² However, since 6 May 2022, human MPX began to spread rapidly in non-endemic countries, including in Europe, the Americas, Asia, and Australia. According to WHO, from 1 January through 16 October 2022, a cumulative total of 73 437 laboratory-confirmed cases of monkeypox and 29 deaths have been reported to WHO from 109 countries in all six WHO Regions.⁷ The non-endemic countries accounted for 72 568 of MPX cases (98.82%) while only 869 or 1.18% of reported cases are in endemic countries. In sharp contrast is the estimated case fatality rate (CFR) of 0.02% in non-endemic countries, and a much higher CFR of 1.50% in the endemic countries.⁷ The rapid rise in cases and spread in non-endemic countries and a need for a coordinated upscaled response prompted the WHO to appoint an Emergency Committee (EC), to consider the declaration of MPX as a public health emergency of international concern (PHEIC).⁸ In the absence of a consensus by the Emergency Committee (EC), and with the majority opting for non-declaration, the WHO-Director General (WHO-DG) sided with the minority to declare a PHEIC. This break by the WHO-DG from accepting the decision of the majority of EC members may have been based on reflections on the delayed response and the errors made in the early days of the COVID-19 pandemic, the wish to intervene at an early stage given some similarities with the early days of the HIV pandemic, and a deep desire to try and prevent the expansion of the MPX outbreak in non-endemic high-income countries. This declaration of a monkeypox PHEIC may have been considered necessary or beneficial, especially coming on the back of a COVID-19 pandemic, an exhausted health and research community and fatigued donors, who were more adversely affected by COVID-19, economically and socially, than recipients' countries. By contrast, the MPX epidemic that has been ongoing for so many years in Africa, with a much higher mortality rate than the current outbreak in the western world, and in countries with limited resources and medical care for those affected, drew no such response from the world body. What was the reason for this selective attention and response? The Ebola virus disease outbreak in West Africa from 2014 to 2016 also led to the declaration of a PHEIC, but only after cases were imported into western countries. The Ebola PHEIC declaration not only resulted in a huge change in responding to outbreaks of

neglected emerging diseases that were devastating in areas with very poor public health systems, but also led to the initiation of very successful and landmark studies under difficult field conditions in West Africa for chemotherapeutic agents, vaccines and rapid diagnostic tests and access to significant funding through private/public partnerships. This collaboration enabled the registration of effective vaccines, established regulations needed to support the production and deployment of vaccines and other therapeutics in subsequent outbreaks in resource-limited areas not only for Ebola but also for other emerging pathogens with epidemic potential.

Since August 2022, the WHO has observed a continuous decline in the number of weekly reported MPX cases, especially in the Regions of Europe and the Americas, which is driving the global downward trend.⁷ However, the WHO noted that while the trends are encouraging, the experience with COVID-19 should caution us not to assume that those trends will continue. Moreover, of the 29 MPX deaths reported between 1 January and 16 October 2022, 13 (46.73%) were reported from the 10 MPX endemic countries in Africa, while 16 deaths were reported in 99 countries in the non-endemic regions of the world. The 1.18% CFR reported among laboratory confirmed MPX cases in endemic countries is approximately sixty times higher than the CFR (0.02%) recorded in the non-endemic countries. Given the suboptimal surveillance in the MPX endemic countries, and with only ~10% of suspected cases being laboratory confirmed in DRC,^{7,9} it is difficult to estimate the full burden of the disease in endemic countries.

It is hoped that the declaration of the monkeypox PHEIC will lead to the development of action plans and initiation of studies as previously articulated.² The plan should apply the One Health approach in designing field research and laboratory support that will build the requisite capacity, especially of scientists, in MPX endemic countries. Specifically, studies on the identification of the natural animal hosts and reservoirs of MPV are urgently needed to better understand the transmission dynamics and the epidemiology of the disease. Other areas for research include the development of better therapies and improved access and availability of other therapeutic interventions, including better vaccines.² An immediate step will be generating better efficacy data for the Jynneos/Imvamune or Imvanex vaccine already shown to be safe and efficacious in animal models.¹⁰

It is becoming an undesirable frustration and pattern for the world to ignore, look aside and fail to act when disease outbreaks ravage over a prolonged period, low- and middle-income countries in sub-Saharan Africa. But with the introduction and spread of the same disease in some high-income countries, the situation is suddenly and rapidly declared a public health event of international concern. This glaring health inequality must not be allowed to continue. Action to mitigate the devastating effect of disease outbreaks in LMICs should not wait for the occurrence of outbreaks in high-income countries. To put an end to this perennial inequity, there must be equitable and proactive action from both the HIC and the LMIC, for the world to be better prepared to combat emerging and re-emerging diseases. Global preparedness for an appropriate response to emerging epidemics is hinged on each country taking ownership of finding solutions to the ravages of such diseases at the national level. Equitable contribution to global preparedness efforts by each nation, rather

than dependence on donations and waiting for the crumbs of equity, will enable and empower each nation, especially of the LMIC, to contribute to global action needed to mitigate the effects of emerging infectious diseases.

There should be more funding for disease surveillance, prevention, and control and research into the biology of many emerging viral diseases that are endemic to Africa like Lassa and Marburg in addition to MPX and Ebola. A disease anywhere will spread everywhere, if neglected.²

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