In July 2022, the World Health Organization (WHO) declared an MPXV outbreak across multiple countries a Public Health Emergency of International Concern.

Despite reports of earlier outbreaks from the African continent, the heightened concern focused on the presence of the disease in countries previously considered ‘non-endemic’, with much attention given to the disease’s concentration among gay, bisexual, and other men who have sex with men.

Some outbreaks have appeared to follow the expected rural ‘spillover’ pattern of animal to human transmission, but there have also been examples of human to human transmission, including outbreaks in densely populated urban areas.

Nigerian epidemiologists had been publishing about MPXV detection in their country since 2017, when they detected outbreaks with unknown transmission. However, the picture in Nigeria in 2022 doesn’t seem to be exactly the same as that unfolding in non-endemic countries which has caught the WHO’s attention.

West Africa is considered endemic for MPXV, with Nigeria displaying the largest number of detected cases in Africa in 2022. The spread of infection appears heterogeneous in that it affects people of both sexes, different ages, occupations, and sexual orientations.

Disease surveillance poses a problem for many reasons and the community level of detection often receives less attention in initiatives to strengthen pandemic preparedness. Thus, it is difficult to determine the full picture on the ground in Nigeria. Despite this, the Nigeria Center for Disease Control (NCDC) that was established in 2011...
While the NCDC is making progress, challenges to surveillance, detection, and contact tracing make it extremely hard to tell if the full extent of cases in Nigeria is known.

There is also the question of a "hidden" or "invisible" caseload among individuals who experience social stigma or criminalization, such as men who have sex with men and sex workers. It is difficult in such circumstances to know how to investigate without further stigmatizing and drawing undue attention to people, their sex lives, or their employment.

What is known is that over a third of cases are amongst women, which suggests a wide spread of the infection across Nigerian society. The cases in Nigeria are not just concentrated in one group.

It is also known that circumstances which place one in close regular person-to-person contact can increase the risk of infection. This places health care workers at particular risk.

Those with health complications such as the immuno-compromised are at risk of developing very serious forms of MPXV. Those with untreated HIV are at risk but also face stigma. Stigma can make it difficult for people to seek testing or treatment, especially in the public sector.

As is the case with most infectious diseases, it is the poor who experience the greatest impact of MPXV. Crowded living conditions in some urban informal settlements increase the likelihood of transmission, adding to the difficulties in detection. MPXV looks like other skin conditions such as chickenpox and is not always recognized as concerning by the public.
Much of the private care sought is at the hyperlocal level, either through traditional medicine sellers or patent medicine vendors (essentially grocery stores selling over-the-counter drugs).

These informal providers are often more accessible than formal ones and offer a degree of accountability given their integration into the daily life of their respective communities.

However, this has led to a more patchy understanding of MPOX and its scale at primary care level. As not all providers are linked up to the disease surveillance system.

While effective, these networks rely on volunteers and aren’t widespread enough at this time to account for the challenges presented. Without better understanding, it is also hard for a stretched health care sector to prioritise MPOX among a host of other disease outbreaks and problems.

The picture is further obscured by the nature of health care provision in Nigeria, with over 60% of medical care in the private sector, due to underinvestment in primary health care, challenges to staffing, no universal health coverage and high costs.
Adding to the other challenges, the logistical problems connected to the collection and transportation of samples from suspected cases, especially in remote locations...

...and this is compounded by the fact that there are only a few labs nationwide that are authorised to process the samples.

The hidden cases and patchy test results contribute to owning only a partial and fragmented view of the situation.

This obviously limits the ability to develop an overall understanding of the epidemiology of the disease and to characterise the heterogeneity that seems distinctive in the West African context.

MPOX doesn't appear to be leaving Nigeria anytime soon. The challenges to gaining a better understanding of the disease are indicative of other places where surveillance, particularly at community level, is difficult. Still, there are many in the country who see there is a need to strengthen surveillance response strategies that are feasible within the domestic political climate.
It is a challenge for global health institutions to account for national and regional differences in patterns of disease and also potential differences in regional priorities and resource needs.

Institutions, such as the World Health Organization, bring the weight of their own concerns to any interaction, and it is difficult to balance heterogeneous disease outbreaks, the demands of different constituencies, and also to think about equitable distribution of scarce resources such as vaccines for the most vulnerable.

Existing power relations within such institutions can result in prioritization of high-income country needs, as all institutions (including the WHO) are political and there can be powerful vested interests at play. This was evident during the COVID-19 pandemic whenhart global vaccine equity manifested. The declaration of a public health emergency of international concern was the first time the WHO director-general departed from the advice of the technical emergency committee, and this decision was applauded. This happened after years of managing AIDS within endemic countries in sub-Saharan Africa, and attention to the disease when it became evident in urban, human populations.

The epidemiology of Nigeria’s COVID outbreak is both complex and specific to its context, meaning that the nature of the outbreak is difficult to characterize with certainty. It also highlights the gaps in our global public health emergency architecture whereby it is challenging to take account of heterogeneous manifestations of outbreaks in different parts of the world. The African experience also suggests that it is important to address emerging or shifting outbreaks sooner rather than later.
Africa CDC grasped the post-COVID moment to prioritise science networks and laboratory systems on the continent.

This includes an emphasis on increasing capacities for African countries to produce vaccines. This is important and the strength of the NCoV had been evident in the Nigerian example.

However, the MPOX outbreak illustrates the considerable challenge still to community-level surveillance and detection in the case of infectious disease outbreaks of international concern. There will need to be an emphasis on strengthening primary health care systems and addressing disincentives to seeking care in the state system.

Unless there is more consistent surveillance, uncertainties will remain about the nature of the epidemic in countries like Nigeria and the heterogeneity and differences from other countries will not be appreciated.

The issue of different priorities for pandemic preparedness and for health system investment in different regions of the globe with different disease burdens needs to be addressed, including finding ways in which it can incorporate a heterogeneous approach to epidemiology and responses, rather than relying on ‘one size fits all’ approaches.