

## VIEWPOINT

# The WHO Declaration of Monkeypox as a Global Public Health Emergency

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Multimedia

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**On July 23, 2022**, World Health Organization (WHO) Director-General Tedros Adhanom Ghebreyesus, PhD, declared the current monkeypox outbreak a Public Health Emergency of International Concern (PHEIC), overriding the WHO Emergency Committee, which decided 6-9 against recommending a PHEIC.<sup>1</sup> That decision was justified, with cases in more than 70 countries, most of which are nonendemic, many with no clear epidemiological links and milder nonspecific clinical presentation. The window for controlling monkeypox is closing and a well-funded global plan for containment is needed.

## Epidemiology and Prospects for Control

Since May, more than 17 300 confirmed and suspected cases of monkeypox have been identified in all 6 WHO regions.<sup>2</sup> Outbreaks have been identified primarily among men who have sex with men (MSM).<sup>3</sup> As of July 25, CDC reported 3487 confirmed monkeypox/orthopoxvirus cases in the US, but cases are probably significantly underreported.<sup>4</sup> The rapid identification of cases across such a large geographic area differentiates current outbreaks from earlier clusters, posing a risk monkeypox virus (MPXV) could become entrenched beyond endemic areas.

National public health authorities have historically controlled outbreaks of MPXV since it was first identified in humans in 1970. MPXV has features more amenable to containment than SARS-CoV-2 because MPXV transmission occurs via close contact and after symptom onset. No clear evidence exists of asymptomatic or long-range airborne transmission. A systematic review estimated the secondary attack rates among unvaccinated household members to be about 8%.<sup>5</sup> A longer incubation period ranging from 5 to 21 days provides additional time to intervene after a known exposure to prevent subsequent cases.

Current outbreaks among MSM suggest transmission is occurring through close and intimate physical contact. An analysis of 528 cases from 16 countries found MPXV DNA in 29 of 32 patients for whom seminal fluid was analyzed,<sup>6</sup> suggesting the virus could also be spreading via sexual transmission. Public health communication must include specific, nonstigmatizing guidance for the MSM community to recognize and seek care for MPXV symptoms and to reduce transmission risks during sexual encounters. Due to the stigma associated with monkeypox, WHO has begun a process to change the name of the virus.

Public health control must include measures to identify and contain the spread of MPXV within and outside MSM populations. Genomic analyses have identified multiple circulating viral strains, indicating several points of entry for the virus into nonendemic countries and undetected viral spread. Many infections are not linked to other known cases, which indicates links in transmission chains are not being identified. Transmission among patients other than

MSM may be underrecognized due to a lower index of suspicion among clinicians and less frequent testing.

Most recent infections have milder clinical presentations, making it more difficult to identify and interrupt transmission. While most reported cases exhibit a rash, some patients have few visible lesions. Patients might not experience prodromal symptoms (eg, subjective fever, lethargy, decreased appetite), which also differentiates this outbreak from classic MPXV presentation, potentially delaying diagnosis and rapid isolation of affected individuals.

The CDC recommends clinicians consider MPXV in any patient with characteristic rashes, which usually manifest as papules, vesicles, or pustules that become firm, deep-seated, and umbilicated over time. These lesions are sometimes painful. At-risk individuals (those with a rash who had recent contact with a person with a similar lesion, or close or intimate contact with individuals in a social network experiencing monkeypox, or recent international travel to countries experiencing outbreaks) should receive education on identifying symptoms and seeking care. Infected patients may remain contagious until rashes resolve, up to 4 weeks, which could create challenges for self-isolation, especially if individuals lack adequate housing and income.

To date, no confirmed monkeypox-related deaths have been reported and only 8% of patients in Europe have been hospitalized for isolation or treatment.<sup>7</sup> However, increased disease severity could occur if the virus reaches more vulnerable populations, such as children, pregnant individuals, or those with immunosuppressive conditions. Historically, the MPXV case fatality ratio has ranged, depending on the strain, from 1% to 11% in endemic and resource-limited settings,<sup>5</sup> but it has been higher among young children. Preventing the virus from spreading to more vulnerable populations is important to limit illness, prevent death, and avoid further strain on health systems.

## Testing Capacities

Limited testing for MPXV is obscuring case detection and undermining prevention and control efforts. Surveillance is expanding, but considerable heterogeneity in case finding among nonendemic countries impairs understanding of true incidence. The UK, for example, has reported nearly as many infections as the US (2228 confirmed as of July 22) despite having a population one-fifth that of the US.<sup>8</sup> Sporadic testing in the US has impeded case identification. Low familiarity with monkeypox among individuals and clinicians, false perceptions that infections are limited to MSM populations, and stigma also hamper case detection.

Accurate case identification requires expanded and streamlined access to testing in clinical settings. Ideally, clinicians should access the same laboratories used for other routine diagnostic services. On June 22, the CDC announced authorization of 5 commercial laboratories to conduct testing for MPXV and the agency has begun shipping

test kits to these companies. This represents an important development, but it is not sufficient. COVID-19 demonstrated the importance of point-of-need testing to ensure rapid test turnaround and timely isolation and contact tracing, and to allow patients to assess their own risks. Commercial and academic diagnostic test developers could augment testing capacity at public health and commercial laboratories by developing new testing technologies, such as point-of-need tests, as well as tests capable of using other specimen types, such as saliva and urine.

### Inequitable Access to Vaccines and Therapeutics

The FDA has approved 2 vaccines to prevent orthopox infection—ACAM2000 and JYNNEOS. JYNNEOS is approved specifically for monkeypox; ACAM2000 is licensed for use against smallpox but may be effective in preventing monkeypox. Given the long incubation period of MPXV and the rapid development of antibodies after vaccination, vaccines may also be administered after exposure to prevent disease.

WHO recently issued interim guidance for monkeypox vaccines<sup>9</sup> and recommended postexposure prophylaxis ideally within 4 days of initial exposure for close contacts, health workers at risk, laboratory personnel working with orthopoxviruses, laboratory staff performing diagnostic testing, and others at risk under national policy.

Rigorous clinical trials are needed to evaluate the efficacy of antiviral drugs for treating MPXV infection. Two antiviral drugs, tecovirimat and brincidofovir, have activity against orthopoxviruses. The role of tecovirimat in ameliorating the course of human infection with monkeypox is unknown, and there is risk of MPXV becoming resistant to the drug. At present, the drug should be reserved for individuals in clinical trials or at high risk for severe disseminated disease. Indiscriminate use could lead to the emergence of resistant strains. Furthermore, brincidofovir is associated with serious adverse events, such as liver toxicity and severe diarrhea and has a black box label warning for increased mortality observed in 1 trial. In the UK, the drug had to be discontinued in some patients being treated for monkeypox due to liver toxicity.<sup>10</sup>

Scarce vaccine and antiviral supplies, and inequitable allocation, have impeded national and global responses. Monkeypox has been endemic in central and west Africa, but these regions have not been prioritized for vaccine distribution except for sporadic clinical studies. High-income countries are already negotiating with manufacturers to procure additional vaccine doses, reminiscent of the COVID-19 pandemic.

To prepare for potential deliberate biological threats, the US has stockpiled 100 million ACAM2000 doses and 36 000 JYNNEOS

doses and is seeking to amass more. The Biden administration recently issued a national MPXV strategy, including deploying nearly 300 000 vaccine doses. WHO plans to create a mechanism for equitable distribution, but multilateral vaccine sharing platforms like COVAX can be undermined by bilateral purchase agreements and export restrictions. As more high-income countries expand eligibility to receive MPXV vaccines, limited global supplies will be further strained.

Failure to ensure equitable access will further erode trust in the international system. Countries where MPXV has been endemic for decades are highlighting the failure to marshal lifesaving medical resources for outbreaks occurring in the African region. Ensuring equitable access to vaccines to protect those at highest risk of severe illness is essential.

### Three Current Global Health Emergencies

Since the International Health Regulations (IHR) were revised in 2005 in the aftermath of SARS, WHO has declared a PHEIC 6 times: for H1N1 influenza, polio, Zika, COVID-19, and Ebola (twice). Currently, WHO has declared 3 emergencies worldwide (COVID-19, polio, and monkeypox), placing major strains on national health systems.

Monkeypox meets all IHR criteria for a PHEIC. Current clusters represent “an extraordinary event” as nontravel-associated cases have never been reported outside endemic areas of central and west Africa.<sup>1</sup> Given the spread of MPXV to more than 70 countries in 6 WHO regions, this outbreak clearly constitutes “a public health risk to other States through the international spread of disease.” Given the pace with which cases are being detected and the global scope, the risk that MPXV will become entrenched globally is increasing and “a coordinated international response” is essential.

WHO should rapidly develop a well-resourced global action plan including strengthening national surveillance and response, supporting and mobilizing MSM communities, and facilitating global scientific cooperation. The IHR requires respect for human rights, with WHO stressing that MSM communities should not be subjected to stigma or discrimination.<sup>1</sup> Although recent cases have been mostly mild, mortality may increase if the virus moves to more vulnerable populations (children, pregnant people, and adults with comorbidities). Tools to counteract the spread of monkeypox exist. International institutions and governments must take coordinated action to ensure that yet another virus does not threaten population health and place additional demands on already stressed health systems.

#### ARTICLE INFORMATION

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