

The Global Outbreak of Monkeypox: Enhancing Public Health Preparedness

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Abstract

The monkeypox (MPX) outbreak has been declared a public health emergency by WHO and the U.S. The zoonotic disease with a similar appearance to smallpox named Monkeypox (MPX) has started to reappear and spread globally in recent times although it was endemic to Africa for decades. It has already spread to 88 countries (81 non-endemic) and infected about 30,000 people. Touching an infected individual who has rashes, scabs, body fluids, or lesions on their skin is the most common way to catch and spread monkeypox. The global health system is already substantially exhausted because of the high volume of Covid-19 patients and is unprepared to execute fast response and emergency interventions to combat a new outbreak. Educating general people and health care workers, creating mass awareness, and preparing public health sectors globally are crucial to controlling the MPX outbreak and avoiding another potential pandemic.

Keywords: Monkeypox; MPX; Endemic; Outbreak; Preparedness; Zoonotic disease

Introduction

Recently an outbreak is just ticking at the door of the ravaged world at a time when it just started to recover from the aftermaths of the global Covid-19 situation. A zoonotic disease with a similar appearance to smallpox named Monkeypox (MPX) has started to appear and spread globally in recent times. Monkeypox is endemic to central and western Africa and most concentrated in the Democratic Republic of Congo [1,2]. Smallpox had been eradicated from the world around 1970; surprisingly the first human case of Monkeypox was also identified in 1970 during the smallpox campaign [2]. The first human case was a child who was initially suspected of smallpox but diagnosed with monkeypox later [3]. The first ever case of Monkeypox was identified in Monkeys who fell sick after being shipped to Denmark from Singapore in 1958, hence the name [4]. The purpose of this study was to raise awareness among the general people and health workers about the monkeypox outbreak and give a message to world public health authorities and policymakers for preparedness.

What is known about the virus/disease?

Monkeypox is predominantly endemic in the tropical rainfor-

est areas of central as well as Western Africa [5]. Prior to the current outbreaks, cases were irregularly imported and connected to travel to endemic nations, but in these outbreaks, we observe an exceptional frequency of individuals infected in the community without travel connections. Furthermore, it is disproportionately impacting particular groups, such as men who have sex with men, most likely as a result of close or sexual contact during recent events [6]. Monkeypox (MPX) is a self-limited disease with signs and symptoms that lasts from 2 to 4 weeks [5]. The common symptoms include fever, headache, lethargy, myalgia, lymphadenopathy, and rash mostly prominent on the face and extremities other than the trunk. In extreme cases, complications may also occur. There has been a 3-6% case fatality ratio in current times [5]. African rodents are the natural reservoir of Poxviruses. Besides the monkeys, other species found infected with the poxvirus include rats, mice, squirrels, prairie dogs, and last but not least humans [1,2]. While transmission of poxvirus requires direct and close contact with skin lesions, body fluids, internal mucosal surfaces, and respiratory precipitations of infected individuals, secondary transmission from contaminated bodies can also happen. The incubation period is generally from 7 to 14 days and in some cases up to 21 days [2]. Given the prevalence of

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diagnosed human MPX cases in the current epidemic among males who have sex with other men and the characteristics of some of the presenting lesions, it seems likely that sexual contact is the main mode of transmission [6].

Current situation

The current global monkeypox outbreak starting from May 2022 was declared a Public Health Emergency of International Concern (PHEIC) on July 23 by WHO [7]. US Department of Health and Human Services has already announced that it will declare a public health emergency due to the continuous spread of the monkeypox virus in the country. As of August 5, 2022, according to the Center for Disease Control and Prevention (CDC) 2022 Monkeypox Outbreak Global Map, worldwide a total of 28,220 confirmed cases were identified in 88 countries. Of them, a hefty number of 27,875 cases were identified in 81 non-endemic countries where monkeypox has historically remained unreported in previous years. Only 345 confirmed cases were found in the seven endemic countries [8]. As of August 4, 2022, 13,022 confirmed cases of monkeypox (MPX) had been reported from 28 EU/EEA nations [6]. The virus also spread to Latin America, with Brazil being the worst affected country (2,004 cases as of August 07, 2022) [9]. We observe a consistently increasing trend in the global daily cases of monkeypox and has already exceeded the 800 cases mark a day on average in August [9].

Public health preparedness

Since there has been a continuous rise in the MPX cases in non-endemic countries, the dearth of evidence of the association between the global cases and endemic places is not only eccentric but also alarming. Because this arbitrary pattern of the onset of cases is imposing extensive threats to the public health system making it vulnerable. The world is still dealing with the disastrous repercussions of the COVID-19 epidemic. Worldwide the health system collapsed with the emergence of Covid-19 as there was a lack of available facilities to provide services to treat Covid-19, lack of properly trained medical personnel, limited testing capacity, lack or no health surveillance system, limited protection gear, and scarcity of resources essential for instant interventions and emergency responses at the time of an epidemic. The developed countries were able to cope and absorb the shock quickly, whilst the health systems in developing countries with minimal resources cannot deal with this emerging MPX outbreak through speedy diagnosis and providing effective treatments. This could result in the unrestrained spread of MPX, making the resources even scarce. Timely diagnosis in the laboratory could play a key role in controlling and containing the initial outbreak to stop irrecoverable harm. Laboratory results with accurate sensitivity and specificity can provide important epidemiological information which is crucial for ongoing and future research that can make recommendations for the policy-makers to take essential steps to terminate the spread of the Virus. Limited testing facilities with trouble in diagnosis allow the cases remain undiagnosed accelerating the probabilities of transmission more. Moreover, other than the physical effects on the patients, the physical and psychological stress

among the health workers significantly deters the productivity of the health sector [10]. Creating mass awareness and educating people as well as health care providers in the endemic region is also extremely crucial.

Recommendation and conclusion

The global health system is already substantially exhausted because of the high volume of Covid-19 patients and is unprepared to execute fast response and emergency interventions to combat a new outbreak. Lack of immediate identification and prompt treatment services resulted in the global uncontrolled spread of MPX cases, especially in non-endemic countries. Proper planning and precautionary measures are warranted to deal with the potential public health hazard of escalating MPX cases along with making the traditional smallpox vaccine or a new monkeypox vaccine available. The following initiatives can be successful in restraining the MPX outbreak:

1. Availability of easily accessible and implementable guidelines, effective emergency planning, and prompt response system developed by CDC and WHO with a globally effective code of conduct.
2. The establishment of a close surveillance system of the infected and/or exposed individuals, caregivers, and health care providers at the health facilities, schools, and workplaces, would guide future policy decisions and planning.
3. Encourage the practice of physical distancing, washing hands, use of alcohol-based hand rubs, surgical masks, and personal protective equipment (PPE), and regular cleaning of objects and surfaces that can be contaminated with MPX. Besides, avoid close contact with an infected individual, self-isolation, and practice safe sex.
4. Contact a health professional straightaway if there are any signs and symptoms of MPX. Instantly report about rash-like illness, history of recent travel/s, sex, and smallpox immunization.
5. Rapid isolation in a single room with proper ventilation, lavatory, and assigned caregiver is highly recommended. Wear masks, ensure a minimum of the 1-meter distance, maintenance of isolation until scabs have worn off, refrain from having sex, and use bandages or sheets to cover skin lesions to reduce the chances of contact with skin lesions.
6. Encourage the practice of standard contact and droplet precautionary measures, hygiene, appropriate waste management, and disinfection of contaminated equipment and surrounding environment at health facilities along with proper disposal of the PPE.
7. Identification and dissemination of context-specific appropriate risk communication messages, health advice, and information to educate the community to avoid stigmatization, misinformation, and rumors.
8. Introduction of the "One Health" concept that considers the health of domestic animals, and livestock along with human health to minimize the risk of human-to-animal transmis-

sion at home, in zoos, or wildlife reserves.

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References

1. Sklenovská N, Van Ranst M. Emergence of Monkeypox as the Most Important Orthopoxvirus Infection in Humans. *Front. Public Health*. 2018; 6: 241. [DOI:10.3389/fpubh.2018.00241].
2. Moore MJ, Rathish B, Zahra F. Monkeypox; StatPearls Publishing, 2022.
3. Ladnyj ID, Ziegler P, Kima E. A Human Infection Caused by Monkeypox Virus in Basankusu Territory, Democratic Republic of the Congo. *Bull World Health Organ*. 1972; 46: 593–597.
4. Cho CT, Wenner HA. Monkeypox Virus. *Bacteriol Rev*. 1973; 37: 1–18. [DOI:10.1128/br.37.1.1-18.1973].
5. Monkeypox Available online: <https://www.who.int/news-room/fact-sheets/detail/monkeypox> (accessed on 8 August 2022).
6. Monkeypox Situation Update, as of 4 August 2022 Available online: <https://www.ecdc.europa.eu/en/monkeypox-multi-country-outbreak/situation-update-eueea-western-balkans-turkey> (accessed on 8 August 2022).
7. WHO Director-General Declares the Ongoing Monkeypox Outbreak a Public Health Emergency of International Concern (accessed on 8 August 2022).
8. CDC Monkeypox in the U.S. Available online: <https://www.cdc.gov/poxvirus/monkeypox/response/2022/world-map.html> (accessed on 8 August 2022).
9. Mathieu E, Spooner F, Dattani S, Ritchie H, Roser M. Monkeypox. *Our World in Data* 2022.
10. Mahmud S, Hossain S, Muyeed A, Islam MM, Mohsin M. The Global Prevalence of Depression, Anxiety, Stress, and, Insomnia and Its Changes among Health Professionals during COVID-19 Pandemic: A Rapid Systematic Review and Meta-Analysis. *Heliyon*. 2021; 7: e07393. [DOI:10.1016/j.heliyon.2021.e07393].