

BIGMUN 2023  
World Health Organization (WHO)

# Research Report Guide

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Topic 1: Concerned about the increase of cases of Mpox



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## Introduction:

On July 2022 the World Health Organization's director general, Tedros Adhanom Ghebreyesus, declared the ongoing outbreak of Mpox a Public Health Emergency of International Concern<sup>1</sup>. Since early May 2022, cases of Mpox have increasingly been reported from countries where the disease is not endemic, this is the first time that Mpox has cases have been reported concurrently in non-endemic and endemic countries in widely disparate geographical areas<sup>2</sup>. The first clusters of cases outside of endemic countries predominantly in the US, UK, Australia, Europe, and Canada<sup>3</sup>. As of January 4<sup>th</sup> 2023 there have been a total of 84,075 cases globally<sup>4</sup>.

Mpox is a viral zoonosis belonging to the orthopoxvirus genus that causes diseases with symptoms similar to but less severe than smallpox<sup>5</sup>. Symptoms of Mpox usually manifest within three weeks of exposure, with flu-like symptoms following the development of a rash and lesions 1-4 days later that usually lasts between 2-4 weeks<sup>6</sup>. Other non-specific symptoms of Mpox include<sup>7</sup>,

- fever
- headache
- muscle aches
- backache
- swollen lymph nodes
- chills
- exhaustion
- joint pain
- rash and lesions

There are two distinct clades of Mpox in humans that have been identified, Clade II (formerly known as the west African clade[4]), and Clade I (formerly known as the Central African Clade)<sup>8</sup>. Clade II's subclade, is named Clade IIb and is the primary group of variants circulating in the 2022 global outbreak<sup>9</sup>. Clade II and its subclade Clade IIb, are known to be

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<sup>1</sup> *Who director-general declares the ongoing monkeypox outbreak a public health emergency of international concern*, World Health Organization, 2022. Available at: <https://www.who.int/europe/news/item/23-07-2022-who-director-general-declares-the-ongoing-monkeypox-outbreak-a-public-health-event-of-international-concern> (Accessed: January 14, 2023).

<sup>2</sup> *Mpox (monkeypox) outbreak 2022 – Global*, World Health Organization, 2022. Available at: <https://www.who.int/emergencies/situations/monkeypox-oubreak-2022> (Accessed: January 12, 2023).

<sup>3</sup> *Multi-country monkeypox outbreak: situation update*, World Health Organisation, 2022. Available at: <https://www.who.int/emergencies/disease-outbreak-news/item/2022-DON390> (Accessed: January 13, 2023)

<sup>4</sup> *2022 Outbreak Cases & Data*, Centers for Disease Control and Prevention, 2023. Available at: <https://www.cdc.gov/poxvirus/monkeypox/response/2022/index.html> (Accessed: January 13, 2023)

<sup>5</sup> *Mpox (monkeypox)*, World Health Organisation. Available at: <https://www.who.int/health-topics/monkeypox> (Accessed: January 13, 2023)

<sup>6</sup> *Ibid.*

<sup>7</sup> *Signs & Symptoms*, Centers for Disease Control and Prevention, 2022. Available at: <https://www.cdc.gov/poxvirus/monkeypox/symptoms/index.html> (Accessed: January 12, 2023)

<sup>8</sup> *Monkeypox: experts give virus variants new names*, World Health Organisation, 2022. Available at: <https://www.who.int/news/item/12-08-2022-monkeypox--experts-give-virus-variants-new-names> (Accessed: January 12, 2023)

<sup>9</sup> *Monkeypox*, World Health Organisation, 2022. Available at: <https://www.who.int/news-room/fact-sheets/detail/monkeypox> (Accessed: (Accessed: January 15, 2023)

less severe and cause less severe symptoms than Clade I, with a case fatality of around 1%. On the other hand Clade I is more virulent with a case fatality of around 10%<sup>10</sup>.

According to the World Health Organisation, Mpox virus is transmitted from one person to another by close contact with lesions, body fluids, respiratory droplets and recently contaminated materials<sup>11</sup>. The incubation period of Mpox is usually from 6 to 13 days but can range from 5 to 21 days<sup>12</sup>. In addition to this various animal species have been identified to be susceptible to Mpox, these include squirrels, pouched rats and different species of monkeys<sup>13</sup>. Animal to human transmissions can occur through the consumption of infected meat or inadequately cooked meat, or via bites and or scratches<sup>14</sup>.

The confirmation of Mpox virus is based upon nucleic acid amplification testing, using real-time or conventional polymerase chain reaction (PCR) for the detection of unique sequences of viral DNA<sup>15</sup>. The PCR test can be used alone or in combination with sequencing<sup>16</sup>. The World Health Organisation recommends that laboratory specimens, for the purpose of laboratory confirmation, should be taken from skin lesions, including swabs of the lesion surface, exudate or crusts<sup>17</sup>. The WHO has also recommended that all manipulations of specimens conducted in a laboratory should be handled according to a risk-based approach<sup>18</sup>. Moreover, all test results, negative or positive as well as laboratory tests awaiting confirmation, should be reported to national authorities and member states in accordance to the International Health Regulations<sup>19</sup>.

Most reported cases of Mpox been identified through sexual health or health services and have mainly involved MSM communities (men who have sex with other men) well as individuals with multiple sexual partners<sup>20</sup>.

There is no treatment specifically for Mpox but because smallpox is also an orthopox virus antiviral drugs developed to protect against smallpox may be used to treat Mpox effectively. A 1988 study found that the smallpox vaccine (discontinued in 1980) imparted approximately 85% protection against Mpox<sup>21</sup>. In addition to this a new antiviral drug tecovirimat (TPOXX) has been approved by the Food and Drug Administration (FDA) to treat smallpox in adults and children, and has become an investigational drug to treat people with severe symptoms of Mpox or those at high risk of infection, such immunocompromised people<sup>22</sup>. Other antiviral drugs such as cidofovir, vaccinia immune globulin intravenous may

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<sup>10</sup> *Ibid.*

<sup>11</sup> *Monkeypox, World Health Organisation, 2022.* Available at: <https://www.who.int/news-room/fact-sheets/detail/monkeypox> (Accessed: January 15, 2023)

<sup>12</sup> *Signs & Symptoms, Centers for Disease Control and Prevention, 2022.* Available at: <https://www.cdc.gov/poxvirus/monkeypox/symptoms/index.html> (Accessed: January 12, 2023)

<sup>13</sup> *Monkeypox, World Health Organisation, 2022.* Available at: <https://www.who.int/news-room/fact-sheets/detail/monkeypox> (Accessed: January 15, 2023)

<sup>14</sup> *Ibid.*

<sup>15</sup> *Ibid.*

<sup>16</sup> *Laboratory testing for the monkeypox virus: Interim guidance, World Health Organization, 2022.* Available at: <https://www.who.int/publications/i/item/WHO-MPX-laboratory-2022.1> (Accessed: January 15, 2023)

<sup>17</sup> *Ibid.*

<sup>18</sup> *Ibid.*

<sup>19</sup> *Ibid.*

<sup>20</sup> *2022 Outbreak Cases & Data, Centers for Disease Control and Prevention, 2023.* Available at: <https://www.cdc.gov/poxvirus/monkeypox/response/2022/index.html> (Accessed: January 15, 2023)

<sup>21</sup> *Recommendations to better understand the origins of and factors for the emergence and re-emergence of mpox, World Health Organization, 2022.* Available at: [https://cdn.who.int/media/docs/default-source/scientific-advisory-group-on-the-origins-of-novel-pathogens/sago\\_monkeypox-statement\\_final\\_21.pdf?sfvrsn=c9e5b8a\\_1&download=true](https://cdn.who.int/media/docs/default-source/scientific-advisory-group-on-the-origins-of-novel-pathogens/sago_monkeypox-statement_final_21.pdf?sfvrsn=c9e5b8a_1&download=true) (Accessed: January 16, 2023)

<sup>22</sup> *TPOXX Patient Data, Centers for Disease Control and Prevention, 2023.* Available at: <https://www.cdc.gov/poxvirus/monkeypox/response/2022/demographics-TPOXX.html> (Accessed: January 16, 2023)

also be used to treat Mpox<sup>23</sup>. Case fatality rate in the 2022-23 outbreak is low, usually between 1-10% and so symptoms of Mpox are mild and most of those who become infected will be able to recover within a few weeks without the need for treatment<sup>24</sup>.

### Definition of Key Terms:

Orthopoxvirus is a virus genus with several species that can cause disease in humans and animals. These viruses are distinguished by their ability to grow and replicate in the skin and mucous membranes, and they are responsible for a variety of symptoms such as fever, rash, and blistering. Orthopoxviruses include the variola virus and the mpox virus. Orthopoxviruses are extremely contagious and can be spread through direct contact with infected bodily fluids or through inhalation of respiratory secretions. There is no specific treatment for orthopoxvirus infections, but vaccines are available to protect against specific species, such as variola virus.

A zoonotic virus is one that can spread from animals to humans. Zoonotic viruses can be spread through a variety of routes, including bites from infected animals, contact with contaminated body fluids or tissues, and consumption of infected animal products. Rabies, Ebola, and SARS-CoV-2 are examples of zoonotic viruses (the virus that causes COVID-19). Many zoonotic viruses have the potential to infect humans and cause serious illness or death, and some have the potential to spread rapidly and cause outbreaks or pandemics. Individuals must take precautions to avoid zoonotic virus exposure, such as washing their hands frequently, avoiding contact with infected animals, and thoroughly cooking animal products.

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<sup>23</sup> *Clinical Treatment*, Centers for Disease Control and Prevention, 2022. Available at: <https://www.cdc.gov/poxvirus/monkeypox/clinicians/treatment.html> (Accessed: January 14, 2023)

<sup>24</sup> *Ibid.*

## Background Information:

Mpox is a disease that has become a global public health concern, as it affects not only countries in West and Central Africa, but also other parts of the world. The disease was first discovered in 1958 when outbreaks occurred in monkeys kept for research in an animal facility in Denmark<sup>25</sup>. It was later identified in humans in 1970 in the Democratic Republic of Congo<sup>26</sup>. Since then, most cases have been reported in rural, rainforest regions of the Congo Basin, particularly in the Democratic Republic of Congo, but cases have increasingly been reported across Central and West Africa<sup>27</sup>.

In 2003, the first Mpox outbreak outside of Africa occurred in the United States and was linked to contact with infected pet prairie dogs<sup>28</sup>. This outbreak led to over 70 cases in the US<sup>29</sup>. Mpox has also been reported in people traveling from Nigeria to Israel in September 2018, to the United Kingdom in September 2018, December 2019, May 2021 and May 2022, to Singapore in May 2019, and to the United States in July and November 2021<sup>30</sup>.

Since May 2022, cases of Mpox have been reported in countries where the disease is not endemic, and continue to be reported in several endemic countries<sup>31,32</sup>. This has led to it becoming a disease of global public health importance. Some scientists argue that the African connection to the virus is misleading and that the virus's presence in Africa is a result of unequal access to global vaccine stockpiles and healthcare resources.

The severity of Mpox is not fully understood, and there have been outbreaks with varying case fatality ratios. For example, in 1996-1997, an outbreak was reported in the Democratic Republic of Congo with a lower case fatality ratio and a higher attack rate than usual<sup>33</sup>.

The current outbreak is the first time that cases and clusters of Mpox have been reported concurrently in non-endemic and endemic countries in widely disparate geographical areas<sup>34</sup>. Some healthcare experts suspect that the virus might have been circulating undetected in human populations in a number of countries outside of Africa for several months before the outbreak was detected<sup>35</sup>. The fear of COVID-19 and reluctance to seek medical care may have contributed to this<sup>36</sup>.

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<sup>25</sup>About Mpox, *Centers for Disease Control and Prevention*, 2022. Available at: <https://www.cdc.gov/poxvirus/monkeypox/about/index.html> (Accessed: January 14, 2023)

<sup>26</sup> *Ibid.*

<sup>27,28</sup> *Monkeypox*, *World Health Organisation*, 2022. Available at: <https://www.who.int/news-room/fact-sheets/detail/monkeypox> (Accessed: January 15, 2023)

<sup>28</sup> *Ibid.*

<sup>29</sup> *Ibid.*

<sup>30</sup> *Ibid.*

<sup>31</sup> *Ibid.*

<sup>33</sup> *Ibid.*

<sup>34</sup> Mpox (monkeypox) outbreak, *World Health Organisation*, 2022. Available at: *Multi-country monkeypox outbreak: situation update*, *World Health Organisation*, 2022. Available at: <https://www.who.int/emergencies/disease-outbreak-news/item/2022-DON390> (Accessed: January 13, 2023)

<sup>35</sup> *Multi-country monkeypox outbreak: situation update*, *World Health Organisation*, 2022. Available at: <https://www.who.int/emergencies/disease-outbreak-news/item/2022-DON390> (Accessed: January 13, 2023)

<sup>36</sup> *Ibid.*

One theory that medical experts agree on to explain the spread of the virus is waning immunity following the eradication of smallpox<sup>37</sup>. It is believed that the seizure of the smallpox vaccine and inadequate access to vaccines led to waning immunity, which caused Mpox to become endemic in parts of West Africa and Central Africa. The origins of the outbreak are unknown, and the outbreak itself represents a "highly unusual event." Studies are currently underway to further understand the epidemiology, sources of infection, and transmission patterns of the disease<sup>38</sup>.

## Major Countries and Organisations Involved:

### The World Health organization

The World Health Organisation is a United Nations agency founded in 1948 that connects nations, partners and people to promote health, keep the world safe and serve the vulnerable<sup>39</sup>. The World Health Organisation is collaborating with health authorities to prevent the further spread of disease<sup>40</sup>.

The organisation is continuing to provide support to countries through five interdependent components which include emergency coordination, collaborative surveillance, community protection, safe and scalable care, and countermeasures and research<sup>41</sup>. Through these five interdependent components the WHO is issuing guidance to help countries on surveillance, laboratory work, clinical care, infection prevention and control as well as risk communication and community engagement to inform communities at risk as well as the general public about Mpox<sup>42</sup>. The organisation is working especially closely with countries in Africa, regional institutions, technical and financial partners, to support efforts to bolster laboratory diagnosis, disease surveillance, readiness and reposes actions to prevent further infections<sup>43</sup>. The World Health Organisation has also renamed the virus to mpox to “mitigate a rise in related racist and stigmatising language associated with the ailment”<sup>44</sup>.

### Centers for Disease Control and Prevention

In addition to the WHO, other international organisations, such as the Centers for Disease Control and Prevention (CDC) in the United States and the European Centre for Disease Prevention and Control (ECDC) have also played a role in responding to Mpox outbreaks. The CDC has provided detailed information on how to identify and test for mpox through several clinical channels, provided expertise and resources to help advise US state, tribal, local

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<sup>37</sup> Smallpox/Monkeypox VIS, Centers for Disease Control and Prevention, 2022. Available at: <https://www.cdc.gov/vaccines/hcp/vis/vis-statements/smallpox-monkeypox.html> (Accessed: January 13, 2023)

<sup>38</sup> *Monkeypox*, World Health Organisation, 2022. Available at: <https://www.who.int/news-room/fact-sheets/detail/monkeypox> (Accessed: January 15, 2023)

<sup>39</sup> *About WHO*, World Health Organisation. Available at: <https://www.who.int/about> (Accessed: January 16, 2023)

<sup>40</sup> *Mpox (monkeypox) outbreak 2022 – Global*, World Health Organization, 2022. Available at: <https://www.who.int/emergencies/situations/monkeypox-oubreak-2022> (Accessed: January 12, 2023).

<sup>41</sup> *Strategic Preparedness, Readiness and Response Plan*, World Health Organisation, 2022. Available at: [https://cdn.who.int/media/docs/default-source/documents/health-topics/monkeypox/sprp-monkeypox-final-\(05oct22\).pdf?sfvrsn=711814b6\\_2&download=true](https://cdn.who.int/media/docs/default-source/documents/health-topics/monkeypox/sprp-monkeypox-final-(05oct22).pdf?sfvrsn=711814b6_2&download=true) (Accessed: January 12, 2023).

<sup>42</sup> *Ibid.*

<sup>43</sup> *Ibid.*

<sup>44</sup> *Monkeypox: experts give virus variants new names*, World Health organization, 2022. Available at: <https://www.who.int/news/item/12-08-2022-monkeypox--experts-give-virus-variants-new-names> (Accessed: January 14, 2023).



and territorial health departments on how to monitor and control the spread of the disease as well as participating in global collaboration with other countries experiencing mpox and supporting their efforts to control the spread of disease<sup>45</sup>. The EDC has similarly supported and educated on how to identify and isolate mpox, raised awareness by appropriately target communication to those most at risk, facilitate the process of early detection of mpox, facilitate the process of contact tracing, and support and help develop appropriate vaccination strategies to control the outbreak<sup>46</sup>.

## The U.S. Food and Drug Administration

The The U.S. Food and Drug Administration is an organisation protecting public health by ensuring the safety and security of human and veterinary drugs, biological products and medical devices<sup>47</sup>. The Food and Drug administration was officially created in 1906<sup>48</sup>.

The FDA has issued Emergency Use Authorizations (EUA) for several diagnostic tests for the mpox virus<sup>49</sup>. These tests are intended for use by authorized laboratories and are designed to detect DNA from the mpox virus in human lesion swab specimens from individuals suspected of mpox by their healthcare provider<sup>50</sup>. The FDA has also provided templates and recommendations for developers of antigen diagnostic tests for Mpox and has launched a web-based application for single-patient emergency use IND requests for a therapeutic option for patients with human Mpox disease<sup>51</sup>. The FDA has also updated its mpox and Medical Devices page to provide lists of certain laboratories that have notified the FDA of their laboratory-developed Mpox diagnostic tests<sup>52</sup>.

## Bavarian Nordic

Bavarian Nordic is a danish Pharmaceutical Company founded in 1992<sup>53</sup>. Bavarian Nordic are working on developing a freeze-dried version of MVA-BN smallpox/mpox vaccine as part of a collaboration with the U.S. government<sup>54</sup>. The goal of the project is to improve the shelf-life and storage conditions of the vaccine, and replace the existing stockpile of the liquid-frozen version<sup>55</sup>. Alongside this Bavarian Nordic has contracts with Canada's public health agency and the European union to supply Mpox Vaccines<sup>56</sup>.

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<sup>45</sup> *What CDC is Doing*, Centers for Disease Control and Prevention, 2022. Available at:

<https://www.cdc.gov/poxvirus/monkeypox/about/cdc-response.html> (Accessed: January 12, 2023).

<sup>46</sup> *Questions and answers on mpox (monkeypox)*, European Centre for Disease Prevention and Control. Available at:

<https://www.ecdc.europa.eu/en/monkeypox/questions-and-answers> (Accessed: January 13, 2023).

<sup>47</sup> *When and why was FDA formed*, Food and Drug Administration. Available at: <https://www.fda.gov/about-fda/fda-basics/when-and-why-was-fda-formed> (Accessed: January 12, 2023).

<sup>48</sup> *Ibid.*

<sup>49</sup> *FDA Mpox Response*, Food and Drug Administration, 2022. Available at: <https://www.fda.gov/emergency-preparedness-and-response/mcm-issues/fda-mpox-response> (Accessed: January 16, 2023)

<sup>50</sup> *Ibid.*

<sup>51</sup> *FDA Mpox Response*, Food and Drug Administration, 2022. Available at: <https://www.fda.gov/emergency-preparedness-and-response/mcm-issues/fda-mpox-response> (Accessed: January 16, 2023)

<sup>52</sup> *FDA Mpox Response*, Food and Drug Administration, 2022. Available at: <https://www.fda.gov/emergency-preparedness-and-response/mcm-issues/fda-mpox-response> (Accessed: January 16, 2023)

<sup>53</sup> *An Open World Through Vaccines*, Bavarian Nordic, 2023. Available at: <https://www.bavarian-nordic.com>

<sup>54</sup> <https://www.bavarian-nordic.com/what-we-do/pipeline/smallpox-monkeypox.aspx> (Accessed: (Accessed: January 16, 2023)

<sup>55</sup> *Smallpox/MPOX*, Bavarian Nordic. Available at: <https://www.bavarian-nordic.com/what-we-do/pipeline/smallpox-monkeypox.aspx> (Accessed: January 16, 2023)

<sup>56</sup> *Smallpox/MPOX*, Bavarian Nordic. Available at: <https://www.bavarian-nordic.com/what-we-do/pipeline/smallpox-monkeypox.aspx> (Accessed: January 16, 2023)



## Relevant UN Resolutions:

### The Pan American Health Organisation

On the 5th August 2022, member states of the Pan American Health Organisation held a Special Session of the Directing Council to consider a Resolution to address the ongoing outbreak<sup>57</sup>. This included supporting equitable access to vaccines for at-risk populations in the region<sup>58</sup>. The resolution requested that the Director of PAHO facilitate a coordinated response and take steps to support Member States in obtaining access to this vaccine through the PAHO Revolving Fund<sup>59</sup>. PAHO alongside its member states are also working to implement the following recommendations, including communication and engagement with affected communities, early detection and surveillance, treatment and isolation of patients, and contact tracing<sup>60</sup>.

### Thirty-third World Health Assembly in Geneva, May 1980

It is unclear when the following resolution was made, but for the Thirty-third World Health Assembly in Geneva a “Recommendation of the Global Commission for the Certification of Smallpox Eradication regarding Policy for the Post-Eradication Era” was made where the GCCSE recommends that in collaboration with country health services WHO should organise and assist a special surveillance programme on Human Mpox, its epidemiology and its ecology in areas where it is known to have occurred<sup>61</sup>. The GCCSE recommend that the programme should continue until 1985 when a further assessment of the situation can be made<sup>62</sup>. This was the first surveillance programme on Mpox. The active surveillance program identified and confirmed 338 cases of Mpox between 1981 and 1986<sup>63</sup>.

There are no recent UN resolutions however there have been several regional meetings where the main topics which were being discussed included Mpox, more specifically prevention and surveillance.<sup>64,65,66</sup>

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<sup>57</sup> *Countries approve resolution to support access to monkeypox vaccine in the Americas*, Pan American Health Organisation, 2022. Available at: <https://www.paho.org/en/news/5-8-2022-countries-approve-resolution-support-access-monkeypox-vaccine-americas> (Accessed: January 16, 2023)

<sup>58</sup> *Ibid.*

<sup>59</sup> *Ibid.*

<sup>60</sup> *Ibid.*

<sup>61</sup> *Thirty-Third World Health Assembly*, World Health Organisation, 1980. Available at: [https://apps.who.int/iris/bitstream/handle/10665/154893/WHA33\\_1980-REC-1\\_eng.pdf?sequence=1&isAllowed=y](https://apps.who.int/iris/bitstream/handle/10665/154893/WHA33_1980-REC-1_eng.pdf?sequence=1&isAllowed=y) (Accessed: January 15, 2023)

<sup>62</sup> *Ibid.*

<sup>63</sup> *Recommendations to better understand the origins of and factors for the emergence and re-emergence of mpox*, World Health Organization, 2022. Available at: [https://cdn.who.int/media/docs/default-source/scientific-advisory-group-on-the-origins-of-novel-pathogens/sago\\_monkeypox-statement\\_final\\_21.pdf?sfvrsn=c9e5b8a\\_1&download=true](https://cdn.who.int/media/docs/default-source/scientific-advisory-group-on-the-origins-of-novel-pathogens/sago_monkeypox-statement_final_21.pdf?sfvrsn=c9e5b8a_1&download=true) (Accessed: January 16, 2023)

<sup>64</sup> *Thirtieth Standing Committee of Regional Committee of Europe*, World Health Organisation, 2022. Available at <https://apps.who.int/iris/bitstream/handle/10665/364809/30s1e00-Rep-220880.pdf?sequence=1&isAllowed=y> (Accessed: January 16, 2023)

<sup>65</sup> *Meeting of Strategic Advisory Group of Experts on Immunization*, World Health Organisation, 2022. Available at: [https://apps.who.int/iris/handle/10665/365500?search=result=true&query=Monkeypox&scope=%2F&rpp=100&sort\\_by=dc.date.accessioned\\_dt&order=desc](https://apps.who.int/iris/handle/10665/365500?search=result=true&query=Monkeypox&scope=%2F&rpp=100&sort_by=dc.date.accessioned_dt&order=desc) (Accessed: January 16, 2023)

<sup>66</sup> *Thirteenth Meeting of the WHO South-East Asia Regional Immunization Technical Advisory Group*, World Health Organisation, 2022. Available at: <https://apps.who.int/iris/bitstream/handle/10665/364534/SEA-IMMUN-138-eng.pdf?sequence=1&isAllowed=y> (Accessed: January 16, 2023)

## Previous Attempts to Solve the Issue:

Before the 2022-23 outbreak previous attempts at reducing the number of cases generally involved some form of surveillance. At the sixty-first session Executive Session in Geneva, 1978, a recommendation was made encouraging the continued surveillance of poxviruses, in human and animal populations where cases of human Mpox were identified<sup>67</sup>. At the Thirty-third World Health Assembly in Geneva, May 1980 the Global Commission for the Certification of Smallpox Eradication recommend a policy for the Post-Eradication Era<sup>68</sup>. The GCCSE recommended that in collaboration with country health services the WHO should organise and assist a special surveillance programme on Human Mpox, its epidemiology, and its ecology in areas where it is known to have occurred<sup>69</sup>.

More recently at the second meeting of the International Health Regulations (2005) (IHR) Emergency Committee regarding the multi-country outbreak of Mpox, the WHO Director-General determined that the multi-country outbreak of Mpox constituted a Public Health Emergency of International Concern and made the following temporary recommendations<sup>70</sup>,

These recommendations have been taken directly from the World Health Organisations Strategic preparedness, readiness and response plan<sup>71</sup>,

For countries that have not yet reported a case of Mpox or have not reported a case for more than 21 days,

Recommendations include<sup>72</sup>,

- strengthening all aspects of readiness
- to plan for and implement interventions to avoid stigmatization and discrimination
- to establish and intensify epidemiological disease surveillance
- to raise awareness and intensify detection capacity
- to engage key communities, sexual health networks and civil society networks
- to focus risk communication and community support efforts
- to immediately report to the WHO probable and confirmed cases of Mpox.

For countries with recently imported cases of Mpox, and which are experiencing human-to-human transmission

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<sup>67</sup> *Executive Board Sixty-First Session, World Health Organisation, 1978*. Available at: [https://apps.who.int/iris/bitstream/handle/10665/86040/Official\\_record244\\_eng.pdf?sequence=1&isAllowed=y](https://apps.who.int/iris/bitstream/handle/10665/86040/Official_record244_eng.pdf?sequence=1&isAllowed=y) (Accessed: January 16, 2023)

<sup>68</sup> *Recommendations to better understand the origins of and factors for the emergence and re-emergence of mpox, World Health Organization, 2022*. Available at: [https://cdn.who.int/media/docs/default-source/scientific-advisory-group-on-the-origins-of-novel-pathogens/sago\\_monkeypox-statement\\_final\\_21.pdf?sfvrsn=c9e5b8a\\_1&download=true](https://cdn.who.int/media/docs/default-source/scientific-advisory-group-on-the-origins-of-novel-pathogens/sago_monkeypox-statement_final_21.pdf?sfvrsn=c9e5b8a_1&download=true) (Accessed: January 16, 2023)

<sup>69</sup> *Recommendations to better understand the origins of and factors for the emergence and re-emergence of mpox, World Health Organization, 2022*. Available at: [https://cdn.who.int/media/docs/default-source/scientific-advisory-group-on-the-origins-of-novel-pathogens/sago\\_monkeypox-statement\\_final\\_21.pdf?sfvrsn=c9e5b8a\\_1&download=true](https://cdn.who.int/media/docs/default-source/scientific-advisory-group-on-the-origins-of-novel-pathogens/sago_monkeypox-statement_final_21.pdf?sfvrsn=c9e5b8a_1&download=true) (Accessed: January 16, 2023)

<sup>70</sup> *Strategic Preparedness, Readiness and Response Plan, World Health Organisation, 2022*. Available at: [https://cdn.who.int/media/docs/default-source/documents/health-topics/monkeypox/sprp-monkeypox-final-\(05oct22\).pdf?sfvrsn=711814b6\\_2&download=true](https://cdn.who.int/media/docs/default-source/documents/health-topics/monkeypox/sprp-monkeypox-final-(05oct22).pdf?sfvrsn=711814b6_2&download=true) (Accessed: January 12, 2023).

<sup>71</sup> *Ibid.*

<sup>72</sup> *Ibid.*

Recommendations include<sup>73</sup>,

- implementing a coordinated response to stop transmission and protect vulnerable groups
- to engage and protect affected communities
- to intensify surveillance and public health measures
- to strengthen clinical management and IPC in hospitals and clinics
- to accelerate research into the use of vaccines, therapeutics and other tools

For countries with transmission of Mpox between animals and humans

Recommendations include<sup>74</sup>,

- undertaking detailed case investigations and studies to characterize transmission patterns
- establishing or activating collaborative One Health coordination

For countries with manufacturing capacity for diagnostics, vaccines and therapeutics

Recommendations include<sup>75</sup>,

- raising production and the availability of medical countermeasures
- working with WHO to ensure necessary supplies are made available based on public health needs, on solidarity, and at reasonable cost to countries

#### Possible Solutions:

The possible solutions are inline with recommendations made by the World Health Director.

1. Vaccination: Vaccination is a recommended solution for preventing mpox infection. High-risk groups should be targeted for vaccination, and post-exposure vaccination should be administered to contacts of confirmed cases. Additionally, pre-exposure vaccination should be considered for healthcare workers, laboratory personnel, and outbreak response team members who are at a high risk of exposure.
2. Surveillance: Effective surveillance systems can help identify cases of Mpox and track the spread of the disease. By rapidly identifying cases, clusters, and the sources of infection the optimal clinical care can be provided, and cases can be isolated to prevent further transmission. In addition to this the identification and management of contacts enable governments to tailor effective control and prevention methods based on most commonly identified routes of transmission.
3. Infection control: Implementing infection control measures, such as isolating infected patients and properly disinfecting surfaces and equipment, can help prevent the spread of Mpox, particularly in health care settings.

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<sup>73</sup> *Ibid.*

<sup>74</sup> *Ibid.*

<sup>75</sup> *Ibid.*

4. Education and awareness: Encouraging two-way communication on Mpox related risk and engagement of at-risk and affected communities on prevention, detection and care of Mpox. Educating healthcare workers on atypical presentation of symptoms as well as training clinical workers so that they can provide optimal care to patients with Mpox. Educating the public about the risks of Mpox and how to prevent infection can help reduce the number of cases. This can include public health information on disease transmission, preventative measures etc. In addition to this health information and advice should be provided avoiding any form of stigmatization of certain groups.
5. Animal health: Working to improve animal health and reduce the risk of spread of zoonotic diseases, such as mpox, can also help reduce the number of cases in humans. This can include efforts to control the population of animals that are known to carry the virus and to prevent contact between humans and infected animals. This may also include education on how to handle certain animal meat.
6. Research: Continuing to invest in research on mpox and other zoonotic diseases can help identify new prevention and control strategies and improve our understanding of these diseases. The WHO strongly encourages all countries to undertake vaccine effectiveness studies, in order to develop concrete knowledge on the effectiveness of the Mpox vaccine as well as the development of vaccination strategies.

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