The African Union

Combating the spread of the MPOX Virus

Research Report

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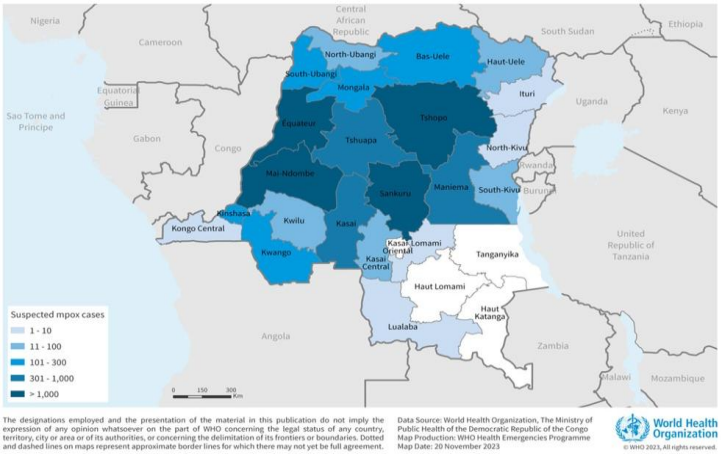
"Out of this world"

Forum: African Union

Issue: Combating the spread of the MPOX Virus

Position: President

Introduction



Map of DRC (20 November 2023)

MPOX, A disease that isn't new to us, yet we are troubled by it as of the current day yet again. From a virus that was first identified among laboratory monkeys, in 1958, Denmark. This is where its name stems from. Contrary to popular belief, MPOX is not only present in monkeys, as it is also found in rodents, mainly located around Central and West-Africa. MPOX wasn't only a burden for animals however, since the first sighting of this viral disease affecting humans was recorded in 1970, in the DRC. With this disease spreading to humans, its spread was not only limited to the confines of the habitats of the animals that it had affected. After this first record, human cases began to emerge at arbitrary intervals all over Africa, but mainly in areas with a tropical climate and rainforests; There was a clear link between the humans living closely to animals possibly affected and the number of recorded cases. This pattern continued until the 21st century started, after which the virus also spread outside of Africa. The first sighting outside of Africa was in the United States of America, to where it was transferred by imported African rodents, which got eaten by prairie dogs, which then infected humans. MPOX stayed in circulation, but in moderation and without sustained growth in cases. This made the risk and attention directed towards the disease low, until 2022. Suddenly, cases were identified across Europe, North America and other regions. The issue was globally declared a Public Health Emergency of International Concern by the World Health Organization in July 2022. The MPOX virus stayed, and still is, prominent in Africa, and as such, it is of the utmost importance to Africa, as the African Union to debate upon this topic.

Definition of Key Terms

The Monkeypox Virus

MPOX, otherwise known as Monkeypox, is a viral *zoonotic* disease, belonging to the same genus, Orthopoxvirus, as smallpox. Monkeypox is the effect of being infected by the Monkeypox Virus. The disease being *zoonotic* entails that it is a disease transferred from animals to humans. Symptoms include a fever, headaches, muscle aches and a rash, usually starting at the face, slowly spreading towards the rest of the body. After the rash, blister-like bumps rise up after which they form crusts and heal. All of the symptoms are substantially less severe than those of smallpox, yet still pose a real threat in situations where general health and health-care are less than optimal. The virus stayed endemic to central and West-African countries for a while. The transmission of MPOX occurs by manner of direct contact with bodily fluids, lesions or respiratory droplets from an infected person or animal. These same secretions can also contaminate materials, which then can again, transfer MPOX to a healthy person. Animal-to-human transmission usually occurs due to bites, scratches or the consumption of bushmeat. The virus is not extremely infectious, and as such, because of the nature of the virus, human-to-human transmission usually occurs with sexual intercourse, especially in male-to-male intercourse. This is due to cultural-social grounds.

High-burden communicable diseases (E.g HIV/Aids, Tuberculosis)

These diseases put a great burden on Africa because of their high rate of transmission and expensive treatments or cures. These diseases should be taken note of in the combat against MPOX, because these diseases already put a sizable amount of stress on the African health infrastructure. Malaria and hepatitis are also diseases that pose major threats.

Antiviral therapy

This medical treatment,known as Antiviral therapy, is a process in which drugs that inhibit the replication and spread of viruses within the body are used. It involves the use of antiviral agents targeting specific stages of the viral life cycle, such as entry, replication, or release from host cells. Common examples include medications for HIV, influenza, and hepatitis. Antiviral therapy is critical for managing viral diseases, reducing symptoms, and preventing complications.

‘One Health’

This a multidisciplinary approach that recognizes the importance of the connection between human, animal, and environmental health. In that sense, it aims to keep each of the named parties healthy, when combatting a health emergency and/or issue. It aims to promote collaboration among various sectors, including medicine, veterinary science, ecology, and public health, to prevent and address global health challenges such as zoonotic diseases, such as MPOX, antimicrobial resistance, and environmental degradation..

Tecovirimat (TPOXX)

Tecovirimat SIGA is a medicine to treat smallpox, monkeypox and cowpox, three infections caused by viruses belonging to the same family (orthopoxviruses). It is also used to treat complications that can happen following vaccination against smallpox. It is utilized by consumption by mouth, in the form of capsules. Treatment using this medicine should be initiated as soon as possible after diagnosis.

General Overview

Background

The MPOX virus was first identified in 1958. Human cases were first documented in 1970 in the Democratic Republic of Congo (DRC). For decades, MPOX remained endemic to parts of Central and West Africa, particularly in rural areas where people came into close contact with wildlife. The global landscape of MPOX changed dramatically in 2022 when cases began to emerge in non-endemic regions, including Europe, North America, and parts of Asia. Unlike previous outbreaks, the virus spread through sustained human-to-human transmission, affecting thousands. This event underscored the need for robust global surveillance and an understanding of how environmental, social, and health factors contribute to the spread of zoonotic diseases. Mpox primarily causes fever, headaches, muscle aches, and a characteristic rash that evolves through stages. While often self-limiting, severe cases can occur, especially in immunocompromised individuals. The sudden rise in MPOX cases outside its endemic regions reflects broader concerns about global health preparedness, zoonotic spillovers, and inequities in access to medical countermeasures.

The questions of public health

There have been multiple accounts of public health challenges with the virus at hand. These challenges have made combating the spread of the MPOX virus more difficult than originally anticipated, and as such, these challenges should be tackled to progress the eradication of the MPOX virus and the effect that it has on our people and animals.

The **first issue** regards delayed diagnosis and misdiagnosis. This issue has multiple causes. First of all, it is caused by the nature of monkeypox: The symptoms of this disease overlap significantly with other diseases of similar nature, such as syphilis, herpes and last but not least, chickenpox. All of these diseases cause skin related ailments. Secondly, the lack of knowledge that healthcare providers should have of MPOX: due to the symptoms having similarity to other diseases and the research on the current day version of MPOX being limited, the diagnosis is shown to be quite difficult. Lastly, the delay in diagnosis is caused by limitations in healthcare infrastructure and resources, which is linked to the second issue.

The **second issue** is the limited amount of healthcare resources and infrastructure in Africa. Endemic regions in Africa suffer from the lack of access to medical supplies such as vaccines like **JYNNEOS** and antivirals such a**s tecovirimat**. Another problem regarding this issue is the incompetence of traditional methods, such as but not limited to isolation and contact tracing. These methods often fall short when facing large-scale infections. Due to Africa being limited in this remark, they suffer greatly due to this issue.

The **third issue** is the lack of community awareness and the stigma surrounding this disease and its transmission. MPOX has gotten an association with specific communities: those who cannot afford contraceptives and the homosexual male population. The virus has mainly been identified in these populations. The fear of these people causes them to not report their status, if they have been affected, due to being scared of the court of public opinion. This in effect again contributes to the **first issue**.

The **fourth and final issue** is in an economic dimension, regarding the inequities of vaccination. Central and the wealthy semi-peripheral countries usually get provided with vaccines earlier and with a bigger supply than peripheral and below-average semi-peripheral countries. The latter suffers from significant delays. Most if not all of Africa is either semi-peripheral or peripheral, so in effect, most of Africa suffers from this issue. The question of ethics regarding this issue is also raised: Should the poor suffer, whilst

the rich get cured, purely because of their economic position, possibly provided by the status of their country?

Potential for spread

With the MPOX virus being a viral disease, the potential for spread is one of the most important aspects that should be discussed, if there is a vision to combat the spread of the MPOX virus. As such, it is of the utmost importance that a clear insight is provided, into how MPOX spreads and where the potential for spread lies. MPOX is transmitted through multiple body parts or fluids. The most common mode of transmission is direct contact with skin lesions, bodily fluids or scabs from a person infected with the MPOX virus. Humidity from the respiration can also have potential to spread the virus in cases where there is prolonged face-to-face contact in enclosed settings with limited circulation of fresh air. A large part of Africa suffers from the latter due to the poverty and therefore poor housing conditions. Objects can also be contaminated by the aforementioned bodily discardings. The virus mainly being transferred by prolonged face-to-face, and more importantly, physical contact, raises concerns regarding the virus being transferred in sexual intercourse. Especially with the limited availability of contraceptives in Africa that protect the body specifically, such as condoms, this part of the issue provides the virus with more potential to spread.

However, human-to-human transmission isn't the only issue regarding the spread of the virus. With the virus being zoonotic, Animal-to-human and vice versa also poses a threat to the general well being of the animal and human population. *Here the One Health solution mentioned later on, is called upon.* With Africa having dense rainforests due to its climate, and a lot of the main industries being agricultural, with livestock, with most of African countries being peripheral, Animal-to-Human transmission occurs more than what would be preferable to combat the spread of this virus. As such, this is a part of the issue at hand that cannot be ignored and should be debated upon.

Repercussions of the virus

MPOX has also created a multitude of repercussions that go beyond individual health. The repercussions also affect economies, certain societies and healthcare systems. These repercussions have also halted the combat against the spread of the MPOX virus. With the slim, but still present fatality rate of MPOX, especially the younger population, who should be the future of the developing countries in Africa, do not even get to participate in their own future. Survivors of the virus may also suffer long-term complications, which limits their effectiveness in their respective societies, which puts an even bigger burden on governments who already struggle with other issues, such as political imbalance, economic strain or cultural questions such as discrimination and segregation of populus. The current day economic determinants are caused by the measures taken to quarantine the virus and discrimination because of misguided associations of the virus with the aforementioned certain populations. The workforce participation has seen a decline and in the workforce, the general feeling of safety and unity that should be present is more lacking than before. These factors, in combination with costs of general healthcare, impose significant economic burdens on our already struggling nations in Africa. Those still struggling with the economic decline caused by colonisation for example, are now affected by at least two external factors imposing economic strain upon them. The social issues described should be combatted somehow. A couple of possible solutions are listed at the end of this report.

Major Parties Involved

The first major parties involved are international and governmental organisations such as but not limited to;

World Health Organization (WHO)

The World Health Organization has played a key role in supporting African governments through providing surveillance, outbreak response, public health education and providing the governments with their knowledge, beneficial to combat the issue at hand. With this they provide long-term help. In the short term, they distribute MPOX vaccines and treatments in collaboration with local health ministries.

Africa Centers of Disease Control and Prevention (ACDC)

The Africa CDC is a continental organisation that coordinates efforts to combat MPOX in Africa by providing support to national public health systems in Africa. They also provide technical expertise , facilitate the access to vaccines and enhance the possibilities of research, by taking measures such as but not limited to enhancing laboratory capacities in Africa. This organisation works in a similar manner as the WHO, but the key difference is that this organisation functions on a continental scale, which makes their assistance more focused towards Africa, rather than them having to spread their attention on a global scale.

UN(ICEF) and other UN agencies

UNICEF and other UN agencies promote community education on MPOX prevention and hygiene, and also aim to work against the stigmas and other cultural issues present in combating the MPOX virus. They also aim to offer logistical and financial support for outbreak containment where possible.

National Governments in Endemic Regions

Governments such as those in the Democratic Republic of Congo (DRC), Nigeria and Cameroon work closely with WHO and the Africa CDC to address MPOX. They work on an even more local scale by investing in local awareness campaigns and conducting on-the-ground surveillance. They aim to reduce the intensity of delayed diagnoses and misdiagnoses.

France: Médecins Sans Frontières (MSF / Doctors Without Borders)

This French organisation provides emergency medical care in remote areas with limited health care infrastructure. This organisation has been crucial to Africa in combating the spread of the MPOX virus. The African countries that are not that welfaring struggle the most with this MPOX issue, due to the economic strain and healthcare needs that it imposes on these countries. The MSF also offers treatment, contact tracing and educational resources in affected communities.

Democratic Republic of Congo: Institut National de Recherche Biomédicale (INRB)

This organization, situated in the DRC, conducts research on MPOX in the DRC and also collaborates with WHO on epidemiological studies and vaccine trials. DRC being the country with the highest concentration of contracted MPOX cases, means that this organization has the largest number of affected people to conduct research on.

World Bank

The world bank offers economic support to enforce healthcare infrastructure in African nations. Other international funding agencies, such as **the Bill & Melinda Gates foundation** and **the Wellcome trust** due to the nature of MUN; That being the access to unlimited funding, if ample reasoning is provided. These instances can be used as reference however.

PATH (Program for Appropriate Technology in Health)

PATH works on improving the access to diagnostics and vaccines for neglected tropical diseases. Since WHO added MPOX to this list, PATH has also been taking the combat against MPOX into their hands. They also partner up with African governments to implement more community-based, local health initiatives.

Amref Health Africa (AHA)

AHA, being an NGO that has its attention directed towards Africa, aims to strengthen the continent's healthcare systems. They aim to achieve this by providing general education for the healthcare industry; This is done by conducting training for local healthcare workers to become better at recognizing and responding to MPOX outbreaks in conformity with the guidelines set by E.g WHO. AHA also provides cultural education, which combats the stigmatization surrounding MPOX and its transmission. Finally, they also aim to combat the injustice and inequalities regarding the availability of vaccines in less welfaring areas.

Timeline of Events

The earlier events listed are only listed if they've had a significant impact on the situation, regarding the issue. The impact is also listed to provide the delegations present with a clearer view of the situation and its developments as a whole.

Date	Location/Instance	Description
1958	Denmark	First identification of the MPOX virus in captive monkeys used for research. Marked the beginning of the scientific awareness of this virus.
1970	DRC	First human case of the MPOX virus being recorded in a 9-month-old boy. DRC became recognized as an endemic region of this virus
1980	Global Scale	The eradication of smallpox was declared by the World Health Organization. The reduction and eventual discontinuation of smallpox vaccinations, reduced the cross-protection against MPOX, especially against younger citizens. (Due to the similarities between MPOX and smallpox.) This led to a rise in MPOX cases over the following decades.
2005	South Sudan	A significant outbreak was documented, primarily affecting children in rural communities. The areas being mainly rural raised the concerns and awareness surrounding health surveillance in Africa, regarding MPOX.
2017	Nigeria	A large outbreak with hundreds of cases in Nigeria, a country that otherwise relatively speaking, had not been affected by MPOX as much as other countries, drew attention to the disease's growing public health impact in West Africa
2019	DRC	DRC continued to report the highest global number of MPOX cases annually, with a suspected 3000 cases in 2019. This brought WHO to collaborate with the DRC Ministry of Health for vaccination trails.
2019	WHO	An intensified effort was made to include MPOX in the WHO's list of neglected tropical diseases requiring research and funding. This was an effort that opened up much scientific and economic progress, regarding the issue.
2022 June	WHO	Global surveillance and contact tracing guidelines were released by WHO, together with increasing MPOX's Alert level, which indirectly called upon nations to support towards combating the MPOX virus
2022 July	WHO (Geneva)	MPOX was declared a Public Health Emergence of International Concern (PHEIC), directly emphasizing MPOX's threat on a global scale, and in effect, the need for coordinated action.

2023 March	Nigeria	The Nigeria Centre for Disease Control (NCDC) launched programs to promote nationwide awareness, to reduce the stigma surrounding MPOX and its transmission. These programs also aimed to increase reporting of suspected cases. Nigeria taking the initiative here has caused other African countries to follow suit, to a certain degree.
2023 April	African Union (Addis Ababa)	The African CDC organized a summit on MPOX to discuss sustainable funding, vaccine procurement and the promotion of regional research collaboration. Through unification, this effort contributed greatly to combatting the MPOX issue.
2023 June	Médecins Sans Frontières (Central and West Africa)	The MSF expanded their operations in Central and West Africa, regarding MPOX. These areas, with countries such as the DRC being located in them, were and still are in dire need of this help. The MSF also put an emphasis on reaching hard-to-reach communities with their service.
2024 February	WHO	WHO officially launched their "One Health Approach" initiative. With this the emphasis on human health was expanded to entail animal and environmental health as well, when addressing MPOX and similar zoonotic diseases.
2024 May	DRC	With support of the Wellcome Trust, the DRC government initiated community-based vaccination campaigns in remote regions in the DRC. This, again, with the core goals of availability of health care.
2024 October	NIH / Africa CDC	An international research collaboration led by the NIH and African CDC lead to findings that tecovirimat proved to be quite effective in reducing MPOX mortality rates.

Possible Solutions

Investing in education surrounding MPOX

Promoting education surrounding MPOX by providing accurate and researched information about the transmission, prevention, diagnosis and treatment of this virus, would benefit each party present in Africa; Organizations would have more knowledge to combat this issue, the local communities would know when to approach the right services when they are infected. They would also know what MPOX is and if they are infected with the virus. Cultural education could reduce stigma and, together with the increased knowledge of identifying MPOX, could increase the amount of cases being reported early. This education could be increased by campaigning around the affected areas and preaching correct and impartial information regarding the issue.

Reducing the risk of transmission

Risk of transmission could be decreased by providing less welfaring communities and more secluded communities with contraceptives that protect the skin, such as condoms. If the response time when a diagnosis is done is increased, people affected could be isolated earlier before they infect others in their community. An increase to hygiene availability could also reduce transmission of MPOX. Healthcare workers could also be provided with more Personal Protection Equipment, such as gloves, masks and surgical clothing.

Promoting equal rights to health care and resources

A large number of mainly local communities do not get provided with the help needed when in risk of being infected or already being infected with MPOX. This is due to the larger budget more wellfaring regions have to spend on health care. Due to this, access to vaccinations, medical assistance and medicine is often quite limited, which then allows MPOX to infect more people and possibly even to increase its mortality. MPOX being left alone or inadequately treated in certain regions also provides the virus with ample time to adapt to modern solutions, which then could provide the MPOX virus to spread to even the more welfaring regions. In the long-term, even the regions that do get access to health care, could be affected. Resources to increase sanitation and hygiene are usually not distributed equally either, so changing this could be quite beneficial.

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