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Independent observer of the Global Fund

Will monkeypox put the Global Fund Strategy's "pandemic preparedness and response" to the test sooner rather than later?

Monkeypox is the latest viral disease to emerge as a threat to global health. The AIDS 2022 conference provided an opportunity for people to share information about the disease, particularly its epidemiology, symptoms, health response, and treatment. In this article, we highlight the epidemiology of monkeypox in endemic countries, its re-emergence, and its current epidemiology as a global outbreak, as presented at the AIDS 2022 conference by the various speakers.

Epidemiology of monkeypox in endemic countries

Dimie Ogoina from the Niger Delta University in Nigeria spoke about the epidemiology of monkeypox disease in endemic countries in Africa. The first human case of monkeypox was reported in the Democratic Republic of Congo (DRC) in 1970. There are two distinct categories of monkeypox: the West African clade and the Congo Basin clade. A clade is a group of organisms that have evolved from a common ancestor. The West African clade can be found from western Cameroon to Sierra Leone and is responsible for the current global spread of monkeypox. The Congo Basin clade occurs in central and southern Cameroon to DRC. The West Africa clade is less severe in terms of resulting in deaths compared to the Congo Basin clade. All cases detected between 1970 and 1989 were along the rainforests of West and Central Africa, of which 80% were in rural settings among children of less than 10 years old. Most of those infected were exposed to animals but there were a few human-to-human transmissions.

From 2001 onwards, researchers noted a change in the epidemiology of monkeypox in endemic

countries. There was an upsurge in cases in Central and West Africa in 2001 and 2017, with DRC and Nigeria respectively the most affected countries. The RC has reported over 1,000 cases since 2001. This year the country has so far confirmed 162 cases with most being attributed to animal-to-human exposure. There has been a shift in the age range of those infected from children of less than 10 years to young people between 15 to 20 years. Nigeria had 88 cases with two deaths in 2018. Case detection reduced in subsequent years to only eight cases in 2020, but this may be due to under-reporting because of challenges in surveillance and the COVID-19 pandemic. Since then, there has been an increase of reported monkeypox cases with 101 cases in the first six months of 2022 and three deaths. Even more worryingly, monkeypox has spread outside its traditional setting of rainforests to other territories and beyond, from rural to urban areas. Also, there have been cases of HIV co-infection although the source of infection is unknown. Males of between 20 to 40 years are the most affected group in Nigeria.

Several factors may be responsible for the re-emergence and current spread of monkeypox beyond endemic countries. They include:

- Declining smallpox vaccine-related population immunity
- Increased human contact with animals (usually the living host of the virus) due to increased trade, deforestation, animal husbandry, or climate change
- Increased human-to-human transmission possibly due to more international travel or because the virus has evolved
- Advancement in diagnostic capacity and heightened public awareness.

Ogoina recommended the improvement of monkeypox-related surveillance in endemic countries as case numbers are being grossly underestimated. To achieve this, governments must improve their capacity for monkeypox diagnosis and devolve this to the subnational level as currently it is centralized, another reason why cases may be missed.

Epidemiology of the current monkeypox global outbreak

Meg Doherty, the Director of the Department of Global HIV, Hepatitis and Sexually Transmitted Infections Programmes at the World Health Organization (WHO), talked about the current global outbreak of monkeypox. She explained that monkeypox is currently spreading outside the endemic countries with cases having been reported in Europe and America. Since the beginning of 2022, WHO has been notified of monkeypox cases by 78 countries across the six regions. A total of 21,256 cases had been confirmed by 31 July 2022 with eight deaths. Yet even while the AIDS 2022 conference was in progress, five more deaths due to monkeypox were reported from Brazil, Ghana, India and Spain.

Men, particularly men who have sex with men (MSM) are the most affected. Available data as of 19 July 2022 indicated that of the 10,098 confirmed cases 98% were male. Among those infected men whose sexual orientation was known, 98% or 3,499 were MSM. According to available transmission data, 2,580 or 94% became infected with monkeypox through sexual contact.

According to Doherty, WHO has not yet recommended mass vaccination for monkeypox. It would like to see vaccination programs administered within a framework of collaborative research and trials to ascertain vaccine effectiveness, side effects, and the dosage required. At the moment, WHO's priorities are:

- Protecting communities from further spread
- Monitoring the epidemiological situation and identifying risk factors
- Ensuring that those infected receive care
- Guaranteeing access and equitable allocation of medication to affected populations
- Fostering coordination among member states.

Conclusion

The re-emergency of monkeypox is currently posing a threat to global health. Its epidemiology is changing, and the virus is now expanding to new territories. There is need to recognize its risk factors to inform the development and rollout of an appropriate response. This will require multistakeholder collaborations where communities and governments forge a common front to respond to this emerging pandemic.

What are the implications for the Global Fund? If the situation becomes worse and infections rise, some countries receiving Global Fund grants may start to request assistance in tackling the threat. The Global Fund's "evolving" objective of dealing with pandemic preparedness and response means the organization may find itself having to deal with a new threat that is itself rapidly evolving.

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