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EU takes the lead in the search for new mpox treatments

As the monkeypox virus continues to pose a threat to global health, EU-funded researchers are working together with international partners to manage the disease and protect the most vulnerable.

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On a Sunday evening in June 2022, a patient walked into a hospital in Rio de Janeiro. “I remember it very clearly,” says Mayara Secco, the doctor responsible for handling emergency cases that night.

“The patient just returned from Europe and had a single lesion on his body. He didn’t have fever or any other symptoms, but he was worried about what it could be.”

“And just like that, I ended up being the first doctor in Rio to diagnose mpox,” says Secco, who works as an infectious diseases doctor and clinical researcher at the Evandro Chagas National Institute of Infectious Diseases-Oswaldo Cruz Foundation in Brazil.

Rio de Janeiro was one of the epicentres of the first mpox outbreak (clade IIb) in 2022, which caused more than 99 000 cases and 208 deaths in 116 countries.

Since then, Secco has been closely involved in the response to the mpox outbreak worldwide, including taking part in an EU-funded international initiative called MPX-RESPONSE. It is focused on improving understanding of the virus, increasing global preparedness and finding new treatments for the disease.

International response

Secco is now a lead clinician working on UNITY, an international clinical trial evaluating a new medicine for the treatment of adult patients with mpox. This is coordinated by the MPX-RESPONSE clinical research network, launched in 2022 in response to the outbreak.

There is so far only one approved treatment for mpox, but its approval is based on animal studies only.

“This is because we didn’t have enough cases to do clinical trials on humans,” explains MPX-RESPONSE coordinator Professor Yazdan Yazdanpanah, the director of ANRS Emerging Infectious Diseases at France’s Inserm, the National Institute of Health and Medical Research.

Three clinical trials are currently underway in various regions around the world, all aimed at evaluating the safety and efficacy of this treatment.

“The challenge of studying mpox in Europe is that we fortunately don’t have many cases,” says Yazdanpanah. Which is why it is important to involve other regions.

For Yazdanpanah, this international collaboration is crucial when dealing with infectious diseases. “If there is an epidemic somewhere, no matter where, we need to control it. That’s the only way to be prepared and the best way to protect both those at the epicentre of the outbreak and the European population,” he says.

Social stigma

Mpox, previously known as monkeypox, is an infectious disease that spreads between people mainly through close physical contact. The disease commonly causes a painful rash or mouth sores, as well as other symptoms such as fever, headache and muscle ache.

Most people fully recover, but some patients can have severe complications. The impact of the disease also goes beyond just the physical symptoms.

“If you are diagnosed with mpox, you are asked to isolate at home for 21 days, but recovery sometimes takes even longer,” says Secco. “You are completely isolated for almost a month, which can lead to a lot of mental health challenges, as well as serious financial issues.”

Mpox is also associated with significant social stigma.

“During the 2022 outbreak, the disease mostly impacted men who have sex with men. This only intensifies the stigma and discrimination this population already faces. The current mpox situation is often compared to the start of the AIDS epidemic.”

Focus on vulnerable populations

A new variant (clade Ib) has emerged more recently, primarily in Africa, with isolated cases also turning up in Europe. This appears to be a more virulent strain of the virus, of particular risk to children.

This situation prompted the World Health Organization to declare in August 2024 a public health emergency of international concern (PHEIC). This means it was classed as an extraordinary event with the potential to spread across borders and requiring swift international action.

Professor Carlo Giaquinto, director of the Department of Women and Child Health at the University of Padua, Italy, agrees on the need for international collaboration in order to protect vulnerable populations.

He is the president of the Penta Foundation, an Italian non-profit that supports research and training in paediatric infectious diseases. The Foundation works with the University of Padua to coordinate another EU-funded research initiative called VERDI, which is working to better understand the impact of mpox in high-risk populations around the globe.

Giaquinto, an experienced paediatrician who has worked in the field for over 40 years, is concerned by the most recent outbreak of mpox.

“There is now a new clade of mpox which is much more common in children,” says Giaquinto. “We don’t have a lot of experience with mpox in Europe, but from our studies in Africa, we know that mortality among children is four times higher than in adults.”

This makes it crucial to find an effective treatment for children too, he stresses. “We need more studies on this topic and to develop strategies to effectively treat the disease.”

The VERDI research team unites 30 research centres of excellence in Europe, the USA, Africa, the Caribbean, the Middle East and Southeast Asia. It is coordinated by the University of Padua and Penta Foundation, with scientific coordination shared between the University of Padua and University College London.

Faced with the mpox outbreak, they were able to draw on their previous experience in studying COVID-19 to quickly mobilise their infrastructure to face the new threat.

Awaiting results

According to Giaquinto, however, the first outcome of the project is the fact that Europe now has an infrastructure that can very quickly respond to a new epidemic. As the research is still ongoing, it is expected that more concrete results will come.

“We need to be prepared for new viruses and diseases, and mpox is a good example to test our level of preparedness – and that is precisely what we have been doing in VERDI.”

Researchers involved in the MPX-RESPONSE trials are also anxiously awaiting results. Although the outcome is impossible to predict, Secco already sees a positive impact that goes beyond clinical outcomes.

“From experience, I know that people with mpox always felt very anxious and scared because there was no treatment we could offer them,” she says. “Our participants really embrace the trial because they feel like they are contributing to science, but also to the LGBTQIA+ community, which has been impacted the most.”

Wary of building expectations, Secco is nevertheless hoping for a positive outcome. “I really hope it will lead to something that improves people’s quality of life and contributes to the mpox response globally.”

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More info

- MPX-RESPONSE
- MPX-RESPONSE project website
- VERDI
- VERDI project website
- European Centre for Disease Prevention and Control
- EU Pandemic agreement
- Mpox research and innovation
- Joint ECDC-WHO mpox report