HEALTH

What is monkeypox, the rare virus now confirmed in the U.S. and Europe?

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A researcher in 2017 examines animals that may carry the monkeypox virus in a Democratic Republic of Congo jungle. (Melina Mara)

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Massachusetts health authorities said Wednesday that they confirmed a case of a rare and sometimes serious viral illness called monkeypox — the first infection identified in the United States this year amid a rash of cases outside the disease's typical territory.

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Monkeypox, which can be passed to animals and humans, is usually found in Central and West Africa. But health authorities in Europe have confirmed more than a dozen cases this month and are investigating dozens more. Some infections confirmed in the United Kingdom "have no travel links" to a place where monkeypox is regularly found, officials said, suggesting the virus may be spreading through the community.

Monkeypox is not known to spread easily between humans. The fact that cases are emerging in several countries at once — with signs of "sustained" transmission in people — is striking, said Aris Katzourakis, a professor of evolution and genomics at the University of Oxford.

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"It's either a lot of bad luck or something quite unusual happening here," Katzourakis said.

What is monkeypox?

Monkeypox is named for the animals in which it was discovered. The disease cropped up in 1958 among monkeys kept for research, according to the Centers for Disease Control and Prevention — more than a decade before a human case was identified in the Democratic Republic of Congo.

Mass vaccination against smallpox "presumably" curbed monkeypox infections for a time among humans, researchers wrote in a 2005 article. But cases resurged, thanks in part to a lack of immunity in later generations, they say. More than 450 cases have been reported in Nigeria since 2017, according to the CDC.

[CDC scientists traveled to this remote African village to hunt for the monkeypox virus]

Monkeypox infections typically last two to four weeks, the CDC says, and begin with flu-like symptoms and swelling of the lymph nodes. Eventually fluid-filled bumps — or "pox" — spread across the skin.

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The disease can spread through contact with animals, infected people and materials used by infected people, health authorities say. Examples listed by the CDC include contact with bodily fluids, contact with monkeypox sores and infection through "respiratory droplets" in a "close setting" such as a shared household.

Monkeypox can be deadly, but two major strains of the virus pose different risks. About 1 in 10 people infected with a Congo Basin strain have been found to die, according to the World Health Organization, while a West African strain appeared to be fatal for about 1 in 100 people infected.

That milder strain is the one infecting people who were hospitalized in the United Kingdom, health authorities said. It is not clear what strain the Massachusetts patient contracted.

How worried should we be? How does this compare to covid-19?

Experts stress that monkeypox is different from the coronavirus that upended the world.

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Monkeypox is highly visible, making contact-tracing and isolation easier. An existing smallpox vaccine could help protect the public if needed, Katzourakis said. And "we don't have the potential for something spreading through the globe at anything like the kind of rate that we saw with covid," he said, because monkeypox transmits less easily between humans.

Still, the latest spate of cases stands out, Katzourakis said. The longer it continues, the more chance the virus has to mutate and improve its transmissibility, just as the novel coronavirus has.

Outbreaks of monkeypox have typically been small, with patients in the single digits, said Tom Inglesby, director of the Johns Hopkins Center for Health Security. "So I think the risk to the general public at this point, from the information we have, is very, very low."

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But he agreed the latest cases raise many questions. "We don't really have the sense yet of what's driving it. … There isn't a travel link that's identified that brings these cases all together," he said.

Health officials have noted recent cases among men who have sex with other men — a pattern that is crucial to understand, Inglesby said, as officials have not previously considered sexual orientation to be a risk factor for monkeypox.

Has monkeypox made it to the United States before?

Monkeypox made its way to the United States — and the Western Hemisphere — for the first time in 2003, researchers say. More than 70 cases were reported in the Midwest, mostly among people who were exposed to prairie dogs apparently infected by rodents from Ghana, according to the CDC.

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Two children fell seriously ill and recovered, the CDC said.

The infection reported Wednesday in Massachusetts is the first case of monkeypox identified in the United States this year, health officials said. Texas and Maryland reported one infection each last year in "people with recent travel to Nigeria," the Massachusetts Department of Public Health said.

[Rare monkeypox virus reported in Dallas resident]

Where else has monkeypox been identified this month?

The United Kingdom and Portugal have announced confirmed cases, while Spanish authorities on Wednesday said they are investigating more than 20 suspected cases. The first known patient in the United Kingdom traveled recently to Nigeria, officials said.

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The WHO said the person developed a rash in late April, shortly before leaving Africa. People identified as contacts have yet to report "compatible symptoms," the global health organization said Monday.

But more cases have emerged.

British health authorities announced two new infections Wednesday, for a total of nine infections confirmed in England since May 6. The agency said there are no clear links between the latest two patients and previous confirmed cases or countries where monkeypox usually occurs — raising the possibility of community transmission.

Recent cases were "predominantly in gay, bisexual or men who have sex with men," the U.K. Health Security Agency (UKHSA) said. The agency is advising people in those groups to be especially "alert to any unusual rashes or lesions on any part of their body."

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The WHO said it has learned of seven confirmed or probable cases — including three in one family — that appear to be "locally acquired in the United Kingdom."

Portugal's Directorate-General of Health, meanwhile, said more than 20 "suspected cases" were identified this month. Five of them are confirmed, the agency said, and infections are concentrated among young men.

What do we know about the U.S. case?

A man who recently traveled to Canada was tested for the virus Tuesday, and the infection was confirmed by the CDC on Wednesday, the Massachusetts Department of Public Health said in a statement.

The CDC is monitoring six Americans after they sat on a plane near a British patient, CDC medical officer Agam Rao told The Washington Post on Wednesday. None of the patients have shown signs of monkeypox symptoms.

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U.S. officials said clinicians should consider a diagnosis of monkeypox in people with an otherwise unexplained rash who traveled to a country that had a confirmed case, had contact with someone who may be infected or is a man who had sexual contact with other men.

What now?

The CDC is working with counterparts in other countries to compile information that can answer experts' many questions.

"We're still early on in all of this to really understand the scope of it and the reason for it," Rao said. "We're very much in response mode where we're trying to identify cases, identify potential contacts, make sure that we provide the right recommendations for all those people, including the health-care personnel caring for the patient."

The disease is so rare, Johns Hopkins' Inglesby said, that "most clinicians in America will never see a case in their lifetimes" — so communication about monkeypox will be important in ensuring doctors are watching for symptoms.

Another top priority, he said: gaining more information about any links between far-flung infections. Is the disease spreading from West and Central Africa to other countries independently? Or are cases spreading through networks of people?

"It's going to be really important for us to understand that, because once you understand how cases are spreading … it gives us a chance to intervene," Inglesby said.

Getting the genetic sequence of the virus behind the recent cases will help scientists check whether they are dealing with a new strain of monkeypox. Unlike with influenza or the coronavirus, Inglesby said, researchers have not observed much change in monkeypox over the years, "and it'll be important to make sure that that remains the case."

How did we get here?

Thanks to global trade and travel, poxviruses are able to spread farther, experts said. The eradication of smallpox in 1980 has helped remaining poxviruses slip past waning protections, said Anne Rimoin, an epidemiologist at the University of California at Los Angeles who has studied monkeypox for two decades.

"No good deed goes unpunished," Rimoin said. "You declare that you can eradicate a pathogen, but you might leave space for another to emerge."

Rao said that while researchers have found a rise in monkeypox prevalence since the end of the smallpox vaccine campaign, other factors have been linked to the infections, including climate change and other environmental shifts that have led to more human and animal interactions.

"We're at a point right now where we just really need to figure out why this is happening before we can start proposing solutions, like vaccinations," Rao said. "This is just unexpected. It's not something we would have recommended if you had asked me two weeks ago because the risk to the general population is extremely rare."

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