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The global monkeypox outbreak and its implications

Since the first case of monkeypox infection was confirmed on May 7, 2022, by the UK Health Security Agency (UKHSA) in a British citizen returning from Nigeria, the epidemic of community acquired cases has rapidly climbed into the hundreds, spanning multiple countries in Europe, Americas, Middle East and Oceania.

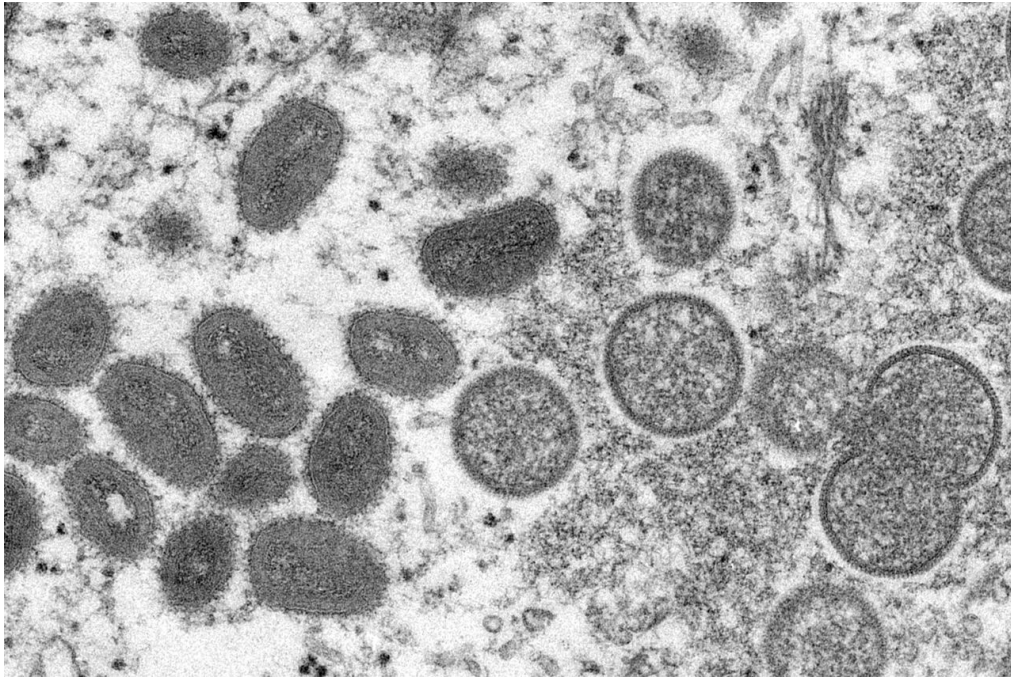
By May 21, 2022, 92 laboratory confirmed cases and 28 suspected cases across 12 countries had been reported to the World Health Organization (WHO). By May 24, 2022, the geographic span of monkeypox infections had increased to at least 20 non-endemic countries and at least 300 confirmed and suspected infections. The current epidemic is the largest outbreak of the virus outside of sub-Saharan Africa ever reported. Fortunately, no deaths have occurred up to now.

The monkeypox virus has been endemic to Central and West Africa since the first human infection was reported in 1970 in the Democratic Republic of Congo in a young boy. The virus was first isolated in 1958 by virologist Preben von Magnus in Copenhagen, Denmark, from macaque monkeys that were used as laboratory animals.

The double-stranded DNA monkeypox virus, one of four human orthopoxviruses that include variola, the virus that causes smallpox, is endemic to 11 African countries, including Benin, Cameroon, the Central African Republic, the Democratic Republic of the Congo, Gabon, Ivory Coast, Liberia, Nigeria, the Republic of the Congo, Sierra Leone and South Sudan.

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This 2003 electron microscope image made available by the Centers for Disease Control and Prevention shows mature, oval-shaped monkeypox virions, left, and spherical immature virions, right, obtained from a sample of human skin associated with the 2003 prairie dog outbreak. [AP Photo/Cynthia S. Goldsmith, Russell Regner/CDC]

In the last several months, the WHO has documented 77 cases in Cameroon, Central African Republic, and Nigeria, with fewer than ten deaths. In the Democratic Republic of Congo, from January to May of this year, 1,238 cases with 57 fatalities where the more deadly Congo-basin clade (a subdivision based on genetic ancestry) of the monkeypox virus is endemic. Unlike the human-to-human transmissions in the current outbreaks in non-endemic countries, the typical pattern of spread in these endemic regions is spillover from infected wild rodents and primates into people.

As of Wednesday, May 25, the following countries have reported confirmed cases thus far: Australia, Austria, Belgium, Canada (23), Czech Republic, Denmark, Finland, France, Germany, Italy, Israel, the Netherlands, Portugal (37), Scotland, Slovenia, Spain (101), Sweden, Switzerland, the United Arab Emirates (UAE), the UK (57 in England), and the US (7). The case from the UAE was from a woman traveling there from West Africa.

Argentina has one suspected case. Pakistan's National Institute of Health in Islamabad clarified that no cases of monkeypox had been diagnosed though the *Economist* noted

there were two cases there. Though it remains unclear if there is a suspected case, health officials issued a health advisory.

On May 19, 2022, Portugal released the first partial sequence of the monkeypox virus from an infected patient, followed by Belgium the next day releasing the full sequence. Based on an analysis of the viral DNA extracted from skin lesions it appears the virus causing the current epidemic is identical to the genome that was sequenced in 2018 from the UK, Singapore, and Israel, linked to cases exported from Nigeria.

The analysis also confirms the virus belongs to the clade from Western Africa which carries a lower mortality risk of around one percent, compared to the more virulent clade from the Congo basin, with an infection fatality rate of ten percent.

A report published in *New Scientist* this week said, “What isn’t clear is whether this virus has any changes that make it more transmissible in humans, which would explain why the current outbreak is so widespread and by far the largest seen outside of Central and West Africa, where the virus spreads in monkeys. This could take some time to establish, given the monkeypox has a large complex genome.”

The monkeypox virus genome is 200,000 DNA letters long compared to SARS-Cov-2’s 30,000 RNA letters.

Sylvie Briand, WHO director for Global Infectious Hazard Preparedness, speaking at the recent World Health Assembly that voted Dr. Tedros Adhanom Ghebreyesus a second term as WHO Director-General, assured the press that it was unlikely for the virus to have mutated. Instead, the current driver of transmission is being linked to “human behavior.” In other words, the complete lifting of all social restrictions that has allowed people to socialize more widely has contributed to the monkeypox outbreak.

David Heymann, an American infectious disease epidemiologist and professor at the London School of Hygiene and Tropical Medicine, speculated that monkeypox may have been present at low levels in the UK or Europe for several years.

He said, “If you look at what’s been happening in the world over the past few years, and if you look at what’s happening now, you could easily wonder if this virus entered the UK two to three years ago, it was transmitting below the radar screen, with slow chains of

transmission. And then all of a sudden everything opened up and people began traveling and mixing.”

Heymann explained that the “leading theory” links the outbreaks to large parties held in Spain and Belgium where intimate contact between people has amplified the current transmission. Many have observed that most of the infected are among men who have sex with men. However, monkeypox is not a recognized sexually transmitted disease, as close contact with an infected individual, including their clothes or bedding, can spread the infection.

This hasn’t prevented the ultra-conservative and reactionary Brownstone Institute for Social and Economic Research to write that the monkeypox virus “is only spreading within the gay community.” Brownstone has strong ties to the group that issued the Great Barrington Declaration, calling for the lifting of all restrictions on the young and healthy and promoting herd immunity of the population. Such statements are odious and completely unfounded, and attempt to stigmatize a particular group for political purposes.

Meanwhile, President Joe Biden has downplayed the global outbreak by indicating that smallpox vaccines have proven effective at preventing severe cases and therefore there was no need for a stronger reaction.

Specifically, earlier in the week while at a press conference in Tokyo, he was asked if Americans infected with monkeypox could expect to quarantine for 21 days. He replied, “No, I don’t think so. I just don’t think it rises to the level of the kind of concern that existed with COVID-19, and the smallpox vaccine works for it. But I think people should be careful,” meaning individuals should make these choices.

Because of the similarity to variola virus, which causes smallpox, vaccines against smallpox are around 85 percent effective against severe monkeypox infections, based on observational data from Africa. Because of the eradication of smallpox in 1980, a significant proportion of the population posses no antibodies. Those that had received their smallpox vaccine as children more than 40 years ago can assume that they have had significant waning of their previous immunity.

As countries begin to reassess their smallpox vaccine reserves, the US emergency stockpile is holding on to 100 million doses of the original vaccine. However, the side effects of these vaccines and the risks associated with using them on immunocompromised individuals mean they will need to be used judiciously in a ring vaccination approach where the confirmed contacts of monkeypox patients would receive the vaccine in order to eradicate the virus.

Since 2010, Bavarian Nordic, a Danish pharmaceutical company, has been manufacturing its liquid-frozen MVA-BN smallpox and monkeypox vaccine based on a live, attenuated vaccinia virus (thought to represent a hybrid of the variola and cowpox viruses.) In 2019, the FDA approved the vaccine, under the brand name of Jynneos, for the prevention of both smallpox and monkeypox.

The company said on May 18, 2022 that BARDA, a unit of the US Department of Health and Human Services, had exercised the first options (119 million doses) under a ten-year contract awarded in 2017. According to the CDC deputy director Dr. Jennifer McQuiston, more than 1,000 doses are currently being held in the stockpile. “We expect that level to ramp up very quickly in the coming weeks, as the company provides more doses to us,” she told the *New York Times*.

Given that the monkeypox virus spreads through contact and respiratory droplets (with a theoretical risk of airborne transmission) health authorities have assured the public that despite the unprecedented global nature of the outbreak it would be limited and quickly contained.

Dr. Scott Gottlieb, speaking on CNBC, said more bluntly, “I don’t think this is going to be uncontrolled spread in the same way that we tolerated COVID-19 epidemic. But there is a possibility now this has gotten into the community, if in fact it’s more pervasive than what we’re measuring right now, that becomes hard to snuff out.”

Yet, few have asked what the implications of the current outbreak of monkeypox virus are. John Vidal, an environmentalist and editor for the *Guardian*, observed that alongside COVID and HIV, which are prevalent globally, several animal pandemics are occurring in parallel.

African swine fever continues to affect the world's pig population. Several outbreaks of avian flu have led to the culling of hundreds of millions of poultry. Fungal disease is being found among marine life in Australia. He wrote, "We live uneasily with many thousands of potentially fatal viruses circulating in other species, but what is remarkable is that most of those that affect humans today were unknown just 70 years ago. Not only are new pathogens jumping from animals to humans more often, but an increasing number are linked to the changes in the global and local environments."

The sudden appearance of a monkeypox global outbreak is an objective verification of these concerns. Though less lethal and transmitting much more slowly than COVID-19, it must be seen as a cautionary note about the impact of globalization that the corporate oligarchs do not care to address.

Vidal warned, "The big lesson of COVID—and now of monkeypox—is that much infectious disease has its roots in ecological change. That means the health of the planet and the health of humans and must be considered alongside that of animals. It also means we should prepare now for the unexpected, invest in public health as never before, stop cutting down forests, address climate change and phase out intensive farming. A 'one health,' planetary approach to health is the best—and possibly the only—hope we have." It is precisely in this formulation of the solution that capitalism cannot address despite ample warnings for decades by scientists on the gravity of these for human civilization.

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