# Global experts prepare for future pandemics from ancient pathogens



International experts from 15 countries participated in an exercise aimed at preparing for potential future pandemics originating from ancient pathogens trapped in frozen animals. The training scenario, known as Exercise Polaris and orchestrated by the World Health Organisation (WHO), centred around a fictional virus dubbed 'Mammothpox', which was imagined to have emerged from the thawed carcass of a frozen mammoth.

The exercise, which took place over two days, simulated a response to a virus that reportedly infected both a film crew and scientists who discovered the ancient remains. Participants were tasked with strategising to contain the virus’ spread before it reached a global scale. While the virus itself was entirely fictional, the training scenario was grounded in real concerns regarding the potential for so-called 'zombie viruses' to resurface due to climate change-induced permafrost thawing.

Experts have raised alarms about 'Methuselah microbes,' capable of remaining dormant within the permafrost and frozen animals for tens of thousands of years. According to Dr Khaled Abass, an environmental health expert at the University of Sharjah in the UAE, "Climate change is not only melting ice—it's melting the barriers between ecosystems, animals, and people." The implications of such a phenomenon could be severe, as humans would have no natural immunity to pathogens that have remained hidden for millennia.

The WHO underscored the gravity of the situation, noting that ancient viruses can survive in permafrost for thousands of years. This was echoed in reports from The Telegraph, detailing the potential risks posed by the thawing of permafrost, which raises the prospect of previously unknown pathogens emerging from their icy confines.

Exercise Polaris deliberately introduced complexities into the response effort; each participating country received a unique scenario regarding the outbreak, fostering communication and collaborative problem-solving among nations including Denmark, Somalia, Qatar, Germany, Saudi Arabia, and Ukraine. Scenarios ranged from a researcher infected on a cruise ship to outbreaks occurring within households or large gatherings.

Participants worked through a simulated three-week timeline for the outbreak response. However, on the second day of the training, they encountered complications due to political differences and varied public health responses among nations. Some countries chose to invoke lockdowns while others maintained open borders but focused on contact tracing. Despite these challenges, the exercise concluded with the outbreak being brought under control. The WHO acknowledged the complexities that would likely arise in a real-world scenario, particularly considering the potential for divergent strategies between nations.

Among ancient pathogens of concern are various strains of influenza, viruses like Pithovirus sibericum and Mollivirus sibericum, and the recently discovered 'Wolf' virus from the frozen remains of a Siberian wolf. There has been a raised level of apprehension following notable incidents, such as an anthrax outbreak in 2016, where spores escaped from a thawed carcass in the Siberian permafrost, leading to hospitalisations and fatalities.

Given ongoing climate change, the Arctic region presents a heightened risk for zoonotic diseases due to limited health monitoring services. Scientists estimate that an astonishing four sextillion microbial cells escape from permafrost annually, heightening the probability of dangerous pathogens disrupting ecosystems. Notably, research from the past decade demonstrates the capability of ancient viruses to cause infection in living cells after thousands of years of dormancy.

The exercise highlighted the pressing need for extensive cooperation and preparedness among nations, as climate change continues to raise the spectre of ancient pathogens emerging anew, threatening public health on a global scale.

Source: [Noah Wire Services](https://www.noahwire.com)

## References

* <https://www.who.int/news/item/04-04-2025-who-brings-countries-together-to-test-collective-pandemic-response> - This URL supports the claim that the WHO conducted Exercise Polaris, a pandemic preparedness simulation involving multiple countries and health agencies. It highlights the importance of global cooperation in health emergencies.
* <https://www.iflscience.com/exercise-polaris-the-who-just-ran-a-2-day-pandemic-preparedness-exercise-78708> - This source corroborates the details of Exercise Polaris, including its focus on testing global coordination mechanisms and the involvement of over 15 countries. It emphasizes the necessity of international cooperation in future pandemics.
* <https://economictimes.com/news/international/global-trends/what-is-mammothpox-why-who-fears-this-deadly-ancient-virus-could-spark-the-next-pandemic/articleshow/120314591.cms> - This article provides insights into the 'Mammothpox' scenario used in Exercise Polaris, detailing the fictional virus' characteristics and the realistic concerns about ancient pathogens emerging due to climate change.
* <https://www.utmb.edu/spectre/news-events/all-news/article/relevant-articles/2025/04/04/who-brings-countries-together-to-test-collective-pandemic-response> - This source confirms the objectives of Exercise Polaris, including testing the Global Health Emergency Corps and enhancing international collaboration during health crises.
* <https://www.gbnews.com/science/who-pandemic-response-exercise-mammothpox-virus-scenario> - This article elaborates on the 'Mammothpox' scenario, emphasizing the scientific basis for concerns about ancient viruses and detailing the diverse strategies countries employed during the exercise to contain the outbreak.