

WHO Identifies Deadliest Pathogens That Could Cause Future Outbreaks and Pandemics

There's Disease X, for starters...

There's been a new interest in diseases and viruses lately, thanks to the [COVID-19](#) pandemic, with people being a little more wary of germs than they were before 2020. Now, the World Health Organization (WHO) has announced that it's working on its list of pathogens that could cause future outbreaks and pandemics.

The [list](#), which was first published in 2017, currently includes the following illnesses:

- COVID-19
- Crimean-Cong haemorrhagic fever
- [Ebola virus](#) disease and Marburg virus disease
- Lassa fever
- Middle East respiratory syndrome (MERS)
- Severe Acute Respiratory Syndrome (SARS)
- Nipah and henipaviral diseases
- Rift Valley fever
- Zika
- Disease X

The WHO said in a press release that it is launching a “global scientific process” to update this list next year with the goal of guiding future research and development, especially in vaccines, tests, and treatments. The WHO has gathered more than 300 scientists who will analyze evidence on more than 25 virus families and bacteria, as well as Disease X (more on that in a minute).

“Targeting priority pathogens and virus families for research and development of countermeasures is essential for a fast and effective epidemic and pandemic response,” Michael Ryan, executive director of WHO’s Health Emergencies Program, said in a [press release](#). “Without significant R&D investments prior to the COVID-19 pandemic, it would not have been possible to have safe and effective vaccines developed in record time.”

It's understandable to have questions about this list, including the mysterious disease X. Here's the deal.

What's the point of this list?

These pathogens are “all important infections for which there is a lack of vaccines and medications,” explains infectious disease expert Amesh A. Adalja, M.D., senior scholar at the Johns Hopkins Center for Health Security.

Not all of these are capable of causing a global pandemic like COVID-19, though, says Thomas Russo, M.D., professor and chief of infectious disease at the University at Buffalo in New York. However, they could cause future outbreaks.

This list “can serve as guidance for prioritization of medical countermeasure development to companies and non-governmental organizations,” Dr. Adalja says. Meaning, it can help the scientific

community and people who help fund global scientific research know which diseases and viruses need the most resources.

What is Disease X?

Disease X doesn't exist at the moment. Instead, it's a name given to an "unknown pathogen that could cause a serious international epidemic," the WHO explains.

"Disease X is a placeholder for a pathogen not on the list and not characterized as a threat," Dr. Adalja says.

Disease X "could be anything," but there is concern that another coronavirus or flu will jump from mostly infecting animals to infecting humans, Dr. Russo says. "We worry about mutations that would allow efficient transmission," he adds.

Is COVID-19 Disease X?

An unknown pathogen that emerged out of nowhere and caused a global pandemic...sound familiar? There's actually a debate in the medical community about whether COVID-19 was a Disease X.

Some people have [argued](#) that the virus met the standards to be considered the first Disease X, while others say that Zika virus was the first Disease X. Still others say that we haven't had a Disease X yet.

Dr. Adalja doesn't think COVID-19 was a Disease X. "I do not think that COVID could be considered a Disease X because coronaviruses had been recognized as a threatening viral family since at least 2003 after SARS," he explains. "This determination was strengthened after MERS was discovered a decade later."

But while William Schaffner, M.D., an infectious disease specialist and professor at the Vanderbilt University School of Medicine, acknowledges that there's a debate about this, he says he "would put COVID-19 into the Disease X category."

Are we going to have another Disease X?

Doctors agree that another Disease X is coming. "Absolutely, yes. No doubt about it," Dr. Schaffner says. "That is 100% agreed on by public health and infectious disease people. I can't tell you which virus and when it will occur, but it will occur."

Dr. Schaffner says there are a few reasons why another Disease X is likely:

- **People are living closer to wildlife.** "The population of the world continues to expand and are moving into areas that were forested and once sparsely populated by humans," he explains. "There, we have much closer interaction with insects, animals, and other sources of viruses in the animal population." Because of this "there will be opportunities for these viruses to jump species," Dr. Schaffner says.
- **The world is increasingly interconnected.** "Nearly the entire world is getting on airplanes," Dr. Schaffner says. "What's 'over there' can be 'over here' within 12 hours."

"There will always be new infectious disease threats because we live on a planet dominated by microbial life," Dr. Adalja says. But, he adds, "most threats will not have pandemic potential."

Dr. Russo agrees that another Disease X is coming. “There’s little question that we’re going to have future outbreaks and pandemics,” he says. “It’s just a question of when.”

But Dr. Schaffner does not expect this list of threatening pathogens to change any time soon. “This is a good list,” he says. “They can’t anticipate each and every virus that will cause an outbreak, but these make sense.” – www.prevention.com/health, November 23, 2022