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A Federal Ban on Making Lethal Viruses Is Lifted

By Donald G. McNeil Jr.

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Federal officials on Tuesday ended a moratorium imposed three years ago on funding research that alters germs to make them more lethal.

Such work can now proceed, said Dr. Francis S. Collins, the head of the National Institutes of Health, but only if a scientific panel decides that the benefits justify the risks.

Some scientists are eager to pursue these studies because they may show, for example, how a bird flu could mutate to more easily infect humans, or could yield clues to making a better vaccine.

Critics say these researchers risk creating a monster germ that could escape the lab and seed a pandemic.

Now, a government panel will require that researchers show that their studies in this area are scientifically sound and that they will be done in a high-security lab.

The pathogen to be modified must pose a serious health threat, and the work must produce knowledge — such as a vaccine — that would benefit humans. Finally, there must be no safer way to do the research.

“We see this as a rigorous policy,” Dr. Collins said. “We want to be sure we’re doing this right.”

In October 2014, all federal funding was halted on efforts to make three viruses more dangerous: the flu virus, and those causing Middle East respiratory syndrome (MERS) and severe acute respiratory syndrome (SARS).

But the new regulations apply to any pathogen that could potentially cause a pandemic. For example, they would apply to a request to create an Ebola virus transmissible through the air, said Dr. Collins.

There has been a long, fierce debate about projects — known as “gain of function” research — intended to make pathogens more deadly or more transmissible.

In 2011, an outcry arose when laboratories in Wisconsin and the Netherlands revealed that they were trying to mutate the lethal H5N1 bird flu in ways that would let it jump easily between ferrets, which are used to model human flu susceptibility.

Tensions rose in 2014 after the Centers for Disease Control and Prevention accidentally exposed lab workers to anthrax and shipped a deadly flu virus to a laboratory that had asked for a benign strain.

That year, the N.I.H. also found vials of smallpox in a freezer that had been forgotten for 50 years.

When the moratorium was imposed, it effectively halted 21 projects, Dr. Collins said. In the three years since, the N.I.H. created exceptions that funded ten of those projects. Five were flu-related, and five concerned the MERS virus.

That virus is a coronavirus carried by camels that has infected about 2,100 people since it was discovered in 2012, and has killed about a third of them, according to the World Health Organization.

Critics of such research had mixed reactions. “There’s less than meets the eye,” said Richard H. Ebright, a molecular biologist and bioweapons expert at Rutgers University.

Although he applauded the requirement for review panels, he said he would prefer independent panels to government ones.

He also wanted the rules to cover all such research rather than just government-funded work, as well as clearer minimum safety standards and a mandate that the benefits “outweigh” the risks instead of merely “justifying” them.

Marc Lipsitch, an epidemiologist who directs the Center for Communicable Disease Dynamics at the Harvard School of Public Health, called review panels “a small step forward.”

Recent disease-enhancing experiments, he said, “have given us some modest scientific knowledge and done almost nothing to improve our preparedness for pandemics, and yet risked creating an accidental pandemic.”

Therefore, he said, he hoped the panels would turn down such work.

Michael T. Osterholm, director of the Center for Infectious Disease Research and Policy at the University of Minnesota, said he believed some laboratories could do such work safely, but wanted restrictions on what they could publish.

“If someone finds a way to make the Ebola virus more dangerous, I don’t believe that should be available to anybody off the street who could use it for nefarious purposes,” he said.

“Physicists long ago learned to distinguish between what can be publicly available and what’s classified,” he added, referring to nuclear weapons research. “We want to keep some of this stuff on a need-to-know basis.”