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Heightened security after flu scare sparks biosafety debate

Erika Check, Washington

US scientists who work with deadly strains of influenza are facing tighter restrictions on how they handle the viruses.

The rule changes follow last week's revelation that a 1957 pandemic flu strain was shipped to thousands of labs around the world in recent months.

Although biosafety experts have welcomed the measures, some argue that such accidents will only be prevented if there is a shift in attitude among those who work with dangerous viruses and bacteria.

On 12 April, the World Health Organization (WHO) announced that an H2N2 strain of influenza had been sent around the world as part of a routine quality-control test. It is now thought to have reached at least 6,000 labs across 19 countries. The flu samples were sent out under the auspices of the College of American Pathologists (CAP) based in Northfield, Illinois, which uses the kits to confirm labs' abilities to carry out diagnostic tests.

Usually, these kits contain flu strains that are not thought to pose a public health threat. But the H2N2 strain caused a worldwide pandemic in 1957, killing millions of people before it disappeared from widespread circulation in 1968. People born after this date have no immunity to the virus, raising concerns that it could reignite a pandemic if it was introduced back into the population.

The CAP says the company that produced the test kits, Meridian Bioscience of Cincinnati, Ohio, made the decision to include H2N2. But Meridian has not spoken to reporters, so it is unclear why it decided to use this strain.

"This was a very serious mistake," says flu virologist Robert Webster of St Jude Children's Research Hospital in Memphis, Tennessee. "This virus has killed millions of people. It should be locked away so that this never happens again."

IMAGE
UNAVAILABLE
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REASONS

Pandemic flu viruses can now be handled only by biosafety level 3 labs.

On 18 April, a spokesman for the US Centers for Disease Control and Prevention (CDC) in Atlanta, Georgia, said that the agency was tightening restrictions on the types of labs that can work with strains of flu virus that have caused pandemics, including H2N2. These viruses are being upgraded from biosafety level 2 to biosafety level 3, a move that some other countries, including Canada, had made before last week's news.

Under wraps

The decision to designate pandemic flu viruses as level 3 will require labs that work with them to be specially constructed to restrict access and cut the risk of contaminants escaping. In addition, the CDC could recommend extra safeguards, such as requiring researchers to take decontamination showers every time they leave the lab.

The CDC has also said that it will review standards and practices for proficiency testing. And the CAP has promised to issue more exact instructions about how test kits should be constructed.

Federal regulation of pathogens in research in the United States is a highly contentious issue, especially since policy-makers have become concerned about the risk of a bioterrorist attack. The CDC tracks pathogens that are considered 'select agents'.

But the rules that govern such agents have met with resistance from scientists because they require labs to meet extensive security, registration and reporting requirements (see *Nature* 420, 451; 2002).

The CDC and National Institutes of Health have joint power to decide what safety and security procedures should be followed by labs that handle pathogens that are not select agents, such as human flu viruses. But the new rules are unlikely to be popular with researchers.

Some argue that the whole affair has been blown out of proportion, and fear that changing

the biosafety level of influenza could have a chilling effect on research, by restricting the number of labs that can work with the virus.

"I think it's overkill," says flu virologist Peter Palese of the Mount Sinai School of Medicine in New York. "Four thousand labs have received this virus and nothing has happened. It's really proved that the virus is not as dangerous as people make it out to be."

Biosecurity experts, meanwhile, support the changes — although some warn that if similar accidents are to be avoided in the future, scientists need to take biosafety more seriously. This would prevent incidents such as one last year, in which three researchers at Boston University developed tularaemia after they were exposed to the bacterium that causes it in a lab. And it would catch serious errors in judgment, such as the decision to send out a pandemic flu strain as part of a routine kit, says Stephanie Loranger, director of the Biosecurity Project at the Federation of American Scientists, an arms-control watchdog based in Washington, DC.

"The way we talk about biosafety is that it's something we have to do, not something we want to do," Loranger says. "I don't think there is the robust conversation about biosecurity in the scientific community that there needs to be." ■