The flu sneaks up on us; scientists are trying to stop that

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In this October 1918 photo, St. Louis Red Cross Motor Corps personnel wear masks as they hold stretchers next to ambulances in preparation for victims of the influenza epidemic. A century after one of history's most catastrophic disease outbreaks, scientists are rethinking how to guard against another super-flu. Photo from Library of Congress via AP

WASHINGTON, D.C. — The descriptions are haunting. Some victims felt fine in the morning and then were dead by night. Patients coughed up blood and their faces turned blue. There were more dead bodies than coffins.

That was the scene in 1918 when a deadly flu killed tens of millions of people as it swept the globe. One-hundred years later, scientists are rethinking how to guard against another super-flu.

There is no way to predict what type of the shape-shifting flu could start another worldwide outbreak. There also is no way to tell how bad it would be, even with modern medical tools.

Still, scientists hope they are close to making stronger flu shots. They want to make shots that protect against the ordinary winter flu. They want the same shot to also guard against future outbreaks.

On The Hunt For A Super-Shot

Dr. Anthony Fauci works for the National Institutes of Health (NIH) in Maryland. The NIH studies health and medicine. Fauci says we need one vaccine that can protect against most or all types of the flu.

Labs around the country are hunting for a super-shot so people would not have to get a flu shot every year. They want a shot people could get every five or 10 years. Or maybe, someday, a shot for children that could last for life.

It will not be easy. Even with 100 years of science, the flu often beats our best cures because it is always changing.

The Flu Is Always Changing

The immune system protects the body. It keeps us healthy by fighting off anything that might harm us. To get around our immune system, the flu changes itself every year. Scientists have a new plan, though. They are learning how the flu disguises itself. They are trying to see what part of the flu stays the same every year.

The 1918 flu outbreak shows why this is so important.

Back then, there was no flu vaccine. It would not arrive for years. Today, vaccination is the best protection. But at best, it only reduces the chance of getting the flu by half.

If a never-before-seen flu breaks out, it takes months to make a new vaccine. Today's top concern is a deadly bird flu. It jumped from birds to more than 1,500 people in China since 2013.

The 1918 Flu Could Give Us Clues

The NIH's Dr. Jeffery Taubenberger calls the 1918 flu the mother of all worldwide outbreaks.

He worked as a scientist studying diseases for the military. He led the team that identified and reconstructed the 1918 flu, which does not exist anymore. His team used traces from World War I soldiers and from a victim whose frozen body was buried in Alaska.

Historians think it started in Kansas in early 1918. By winter 1919, the flu had infected one-third of the world population and killed at least 50 million people.

Antibodies Hold The Key

A turning point toward better vaccines came in 2009. Scientists discovered that, sometimes, people's bodies make a small number of antibodies that can stop the flu. Antibodies are proteins in the blood that fight against a disease.

Scientists are trying different tricks to get people's bodies to make more of those antibodies. Some mysteries still remain, though.

Scientists now think people respond differently to a vaccination. It depends on their flu history. The idea is that your immune system learns to recognize the first flu it sees. It may not respond as well to more than one vaccine. For this reason, a flu vaccine that works for all types of flu would probably work best when you give it to a child, Fauci said.

Preparing For What Comes Next

Still, no one knows for sure how that terrifying 1918 flu started.

The Chinese bird flu that spread in 2013 worries Taubenberger. He asked, How does a bird disease adapt to people? That is the mystery.

While scientists hunt for those answers, Fauci says it is silly to predict what a next outbreak might bring. "We just need to be prepared," he said.