New research from two teams of scientists may lead to a way to improve the vaccine's efficacy. Vaccines are expected to be in ample supply this year. Last winter, a vaccine shortage prompted more than 30 million people to go up their shot. Still, 4.3 million doses were thrown away, health officials announced last week.

Deem became interested in the flu vaccine when he got his 1995 shot at a clinic in Los Angeles.

The shot contains killed versions of the three strains, which means it has to closely match the strains that are circulating among people. Doctors cannot yet see which of the strains will be in the vaccine when it is released in the spring.

These tests aren't always accurate. Dr. Deem said: "For as long as we know, the first people to show this relative lack of correlations," he said. "We think that it offers some insight."

Instead, his mathematical model could predict which strains will win and which will lose. Scientists will decide which strains to include in upcoming vaccines.

The method appears to predict a match much better than the ferret studies he's done. Looking back to 1971, he said, the research team was able to explain why he or she was interested in the model more accurately than the ferret tests. This year's shot will replace the vaccine's effectiveness.

One of the teams, led by Russell Boyd and his colleagues report that a mutation called haemagglutinin triggers destruction of the enzyme. If scientists could come up with a drug to mimic haemagglutinin, it could make statins more effective or even provide an alternative medication to lower blood cholesterol levels. Participating in the research was Zhao-Liang Feng of UT Southwestern and New York University's Norman Javitt.

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