First Human Trial of Avian Flu Vaccine Begins

SCHMALFELDT:The first human trial of a DNA vaccine designed to prevent H5N1 avian influenza infection began on December 21, 2006 when the vaccine was administered to the first volunteer at the National Institutes of Health Clinical Center in Bethesda, Maryland. Scientists from the Vaccine Research Center at the National Institute of Allergy and Infections Diseases designed the vaccine. So what's the difference between a typical flu vaccine and a DNA vaccine? Here's Dr. Gary Nabel, director of the Vaccine Research Center.

NABEL: A DNA vaccine is a new technology that we've used more recently in vaccine design. What we do is we use DNA that we grow in the laboratory and we engineer it in such a way that it expresses a specific protein from the virus. And that's done independent of the whole virus. So in other words, we cut out a little piece of one of the genes from the virus and express only that one protein. That's in contrast to the traditional flu vaccine which is actually the entire virus which has been grown in chicken eggs, and then inactivated with a couple of chemicals.

SCHMALFELDT: As of December 27, 261 lab-confirmed human cases of H5N1 had been reported to the World Health Organization, resulting in the death of more than half of the infected individuals. While human cases remain relatively rare and are largely the result of direct virus transmission from infected birds, a few cases of human-to-human transmission have been reported. If there were to be a large scale outbreak of the so-called "bird flu", would a vaccine like the one being tested serve as a stop gap until such time as a vaccine for the specific strain of virus in a pandemic could be produced?

NABEL: Well it really depends on how effective the vaccine is. If the vaccine is highly effective then it might be a new vaccine that can be used on its own. If it isn't effective at all, obviously, that's not much of a stop gap. If it's somewhere in between, we would need to look at whether it would be good enough on its own or whether we might use it in different prime boost combinations. We'll need to just gather the data and see where in the spectrum it will be able to contribute.

SCHMALFELDT: The study will enroll 45 volunteers between the ages of 18 and 60. Fifteen will receive placebo injections and 30 will receive three injections of the investigational vaccine over two months and will be followed for a year. Volunteers will not be exposed to influenza virus. For more info or to enroll, visit www.clinicaltrials.gov, or call the Vaccine Research Center toll free at 866-833-LIFE. From the National Institutes of Health, I'm Bill Schmalfeldt in Bethesda, Maryland.