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OP-ED CONTRIBUTOR

## Nothing to Fear but the Flu Itself

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PUBLIC health officials are now battling not only a fast-spreading influenza virus but also unfounded fears about the vaccine that can prevent it.

Since April, more than a million Americans have caught H1N1 flu, more than 10,000 have been hospitalized, and about 1,000 have died, including 76 children. And it's only the beginning of October. Yet, in a [new survey](#), 41 percent of adults said they will not get vaccinated.

The good news is that for the first time in more than 50 years we've made a vaccine against a pandemic strain of influenza before the onset of winter, when lower temperatures and humidity allow the virus to spread more easily. Distributing this vaccine to those who need it most — pregnant women, health care workers, children older than six months and people with compromised immunity — will be difficult enough. But the task is made harder by the various myths, spread on TV talk shows and Web sites, suggesting that Americans have more to fear from the vaccine than from the deadly disease it prevents. Here are some of those myths, and why they're wrong:

**SWINE FLU VACCINE IS UNSAFE** The H1N1 virus revealed itself too late for it to be included in this year's seasonal flu vaccine. But the H1N1-specific vaccine was manufactured in the same way as the regular vaccine: The shot form is made by growing the virus in hen's eggs, purifying it and then treating it with a chemical that inactivates it. This technology has been used to make influenza vaccines for 60 years, and it has an excellent safety record. The nasal spray form is made by adapting the virus to temperatures below those typically found in the body. This allows it to reproduce in the relatively cool lining of the nose, but not in the lungs where it could cause harm. This technology has been used safely for more than 30 years. FluMist, a seasonal flu vaccine used since 2003, is made the same way.

**THE VACCINE IS UNTESTED** The H1N1 vaccine has already been given to thousands of volunteers to determine whether it could protect them from the virus and to make sure that it caused no adverse reactions. Only then did the Food and Drug Administration license it.

**THE VACCINE CONTAINS A DANGEROUS ADJUVANT** Some vaccines, like the hepatitis B and human papillomavirus vaccines, have substances called adjuvants, which are added to enhance the immune response, so that smaller quantities of vaccine can be given. Some people fear that the H1N1 vaccine contains, in particular, squalene, an adjuvant that, while included in other vaccines in Europe and Canada, has never been used in routine vaccines in the United States. But the H1N1 vaccine available in the United

States has no adjuvant of any kind.

**THE VACCINE HAS A DANGEROUS PRESERVATIVE** Thimerosal, a preservative containing ethyl mercury that has been in vaccines since the 1930s, is used to prevent inadvertent bacterial and fungal contamination of multi-dose vials. H1N1 vaccine distributed in multi-dose vials will contain about 25 micrograms of ethyl mercury per dose. The issue of thimerosal received public attention in 1999 when the American Academy of Pediatrics and the United States Public Health Service took the precautionary step of asking that thimerosal be removed from single-dose vials of all vaccines. This was done in such a precipitous and frightening manner that it gave rise to the notion that thimerosal had led to autism or mercury poisoning. It hadn't.

In fact, subsequent studies found that infants could safely receive eight times as much mercury as is contained in the H1N1 vaccine. But the public's perception of thimerosal was damaged. This year, enough thimerosal-free vaccine is available to inoculate children under age 6, but that does not mean doses with thimerosal are unsafe.

New myths will inevitably arise as some of the millions of people who are inoculated against H1N1 flu suffer unrelated illnesses. Health officials will keep a close eye out for any real problems. One can only hope that the American public will understand that subsequence isn't necessarily consequence, and not be scared away from a vaccine that can save lives.

*Paul A. Offit, the chief of the infectious diseases division of the Children's Hospital of Philadelphia, is the author of "Autism's False Prophets: Bad Science, Risky Medicine and the Search for a Cure."*

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