

Business

Return of U.S. Flu Season Brings Worries About a Virulent Replay

By [Blake Dodge](#)

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- ▶ Virus caused 80,000 deaths last winter, shortages of medicine
 - ▶ This season could be more mild but vaccine science is behind
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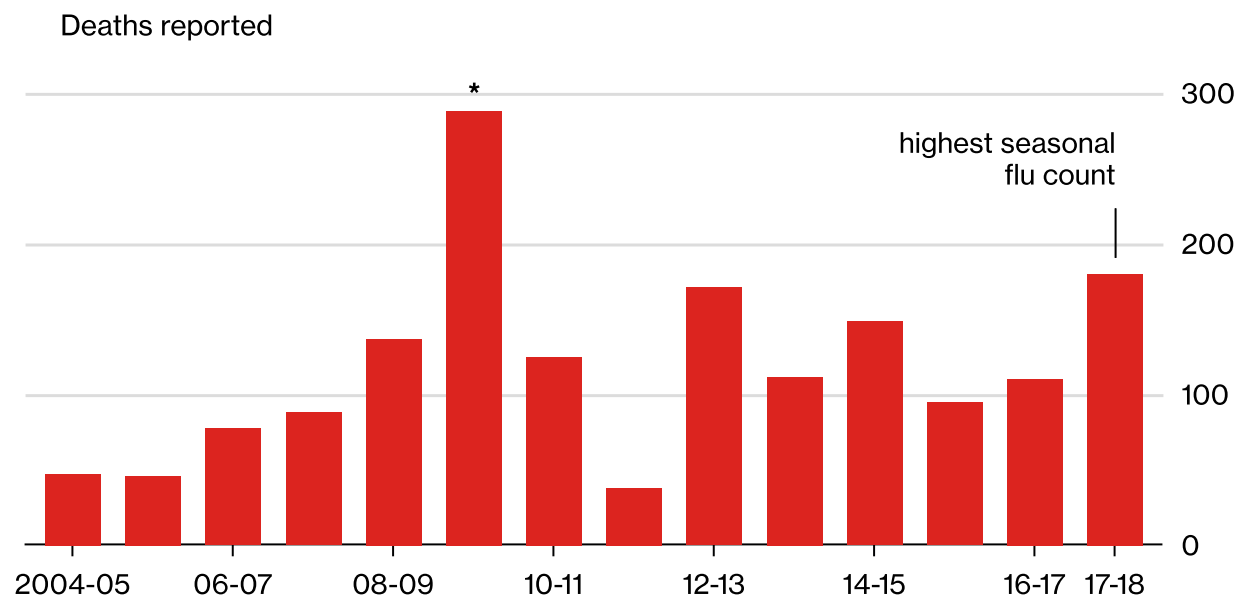
U.S. health officials are trying to increase the rate of flu vaccinations this year after a severe outbreak last season killed a record number of children and led to spot shortages of antiviral medications like Tamiflu.

In a panel hosted by the National Foundation for Infectious Diseases and the Centers for Disease Control and Prevention in Washington on Thursday, U.S. Surgeon General Jerome Adams took a nasal vaccine -- an effort, he said, to make flu prevention "go viral." The lighthearted demonstration was accompanied by grim statistics from the 2017-18 flu season: 80,000 deaths overall, including 180 children.

“I’m tired of hearing people say, ‘Well, I didn’t get sick and I didn’t get the flu shot.’ Or, ‘I don’t like it, my arm hurts,’” said Adams. “Those 80,000 people who died last year from the flu, guess what? They got the flu from someone. So it’s critically important that we impress upon folks that it is not just for them. It’s their social responsibility to get vaccinated.”

Deadly Virus

Seasonal influenza killed a record number of children last year



* Includes swine flu

Source: Centers for Disease Control and Prevention

The vaccine is expected to be more accurate this season, and influenza activity in the Southern Hemisphere has been unremarkable so far -- a good sign for the U.S. and Canada. But health officials at the briefing said it was too early to make a prediction.

“I would get the vaccine now and you don’t have to worry about whether it’s a mild or a severe season,” said William Schaffner, NFID medical director.

Vulnerability Exposed

The U.S. faced the most severe seasonal flu outbreak across all age groups since at least 2003 last season, according to CDC data. It led to 900,000 confirmed hospitalizations. So many people caught the flu that some hospitals and pharmacies across the U.S. ran out of antiviral drugs, Alabama declared a state of emergency and a school district in Arkansas closed all 10 of its schools.

“It really exposed how vulnerable we are,” said Amesh Adalja, a senior scholar at Johns Hopkins University Center for Health Security. “It seems like we’re in a better position this year. But it’s the flu and it can do a lot of tricky things, so we won’t know for sure until the season begins in earnest.”

Each year, vaccines are produced in accordance with the CDC’s predictions for the types of viruses most likely to circulate during flu season. Those predictions can be wrong, of course, but even when they are right vaccines can be mismatched to circulating viruses. Last winter, the U.S. vaccine was only 25 percent effective against the unexpected emergence of the H3N2 strain, or 36 percent effective overall, according to the CDC.

About 40 percent of U.S. residents received a seasonal flu vaccination last year. About 80 percent of the children killed hadn’t received a shot. Vaccines significantly reduce a person’s chances of catching the flu and spreading it to the most vulnerable people around them, such as the elderly. Even if someone does catch the flu after getting the vaccine, symptoms are likely to be less severe.

Flawed Science

Still, vaccine science is flawed. Drugmakers still grow vaccines in chicken eggs -- a technique developed in the 1940s. Eggs don’t support all virus types and allow for mutations in the ones they do. The process takes at least six months, allowing time for circulating viruses to change and adapt.

Medicago Inc., a Canadian biotechnology company, owns the first plant-based seasonal flu vaccine to reach late-stage clinical trials. Its vaccine, created with genetic sequencing and grown with tobacco, can be retrofitted to immunize against almost any virus so long as its DNA can be obtained. The whole process takes about six weeks.

“Human viruses were never meant to grow in eggs,” said Bruce Clark, Medicago chief executive officer. “The basic technology of growing vaccines in eggs has been a solution historically because we had no other options.”

The mismatches in the 2017-18 season can be attributed to egg-related complications, said Nathalie Landry, Medicago’s senior vice president of research and development. Certain types of H3N2 can’t be grown in eggs without mutations that make vaccines less effective.

Similar vaccines grown with yeast are available on the market for human papillomavirus, or HPV, and hepatitis B. Sanofi, the French pharmaceutical giant, makes a seasonal flu vaccine with recombinant DNA technology and protein, a somewhat similar process to Medicago's.

Clark said more effective vaccines could increase vaccination rates.

“People don't really understand the need for herd immunity -- that we protect those who are most vulnerable,” said Clark. “Low efficacy rates don't help.”

(Corrects headquarters location of Medicago in 11th paragraph in story published on Sept. 27.)

In this article

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