

New Survey Shows the Difficulty of Developing Effective Flu Vaccines

Those who had flu shots before the winter of 2008/09 were as likely as those who did not have them to report having the flu.

As the world confronts a possible swine flu pandemic, a new poll by *The Harris Poll*® underlines the difficulty scientists have in developing effective flu vaccines. This poll finds that 18% of all adults believe they had the flu last winter. It also finds that those who did not have flu shots were just as likely as those who did have flu shots to report that they had the flu. This is the second consecutive time, in five surveys over the last six winters that those who received flu shots were as likely to say they got the flu as those who did not get flu vaccine. However, for reasons given below, it would be a mistake to conclude that last winter's flu vaccine had no effect. A more robust conclusion is that the vaccines used before the last two winters were less effective than those used before some other recent winters.

These data come from *The Harris Poll* in which 2,401 U.S. adults were surveyed online between April 13 and 21, 2009 by Harris Interactive.

Who Had Flu Shots Before Last Winter?

Two out of every five adults (40%) had flu shots before the winter of 2008/09. This number is somewhat higher than those who had flu shots before other recent winters (from 27% before 2004/05 and 36% before 2007/08).

People aged 65 and over were much more likely (61%) and people aged 50 to 64 were somewhat more likely (43%) than adults under 50 to have received flu shots.

Approximately the same proportions of men and women and of whites, African American and Hispanics had flu shots.

Who Had the Flu?

Just under one adult in five (18%) believe they had the flu this last winter. There are some interesting demographic differences:

- Men are slightly more likely than women (20% vs. 15%) to report having had the flu.
- Adults aged 30–39 are much more likely (34%) than younger or older people to report having had the flu.
- African Americans (8%) are much less likely than whites (18%) or Hispanics (20%) to report having had the flu. This was also true in the previous (2007/08) winter.

Did They Really Have the Flu?

One problem with this research is that the diagnosis, and particularly self-diagnosis, of flu is not very reliable. Other infections can produce flu-like symptoms. This raises the question of whether some people who report having had flu shots and then having the flu may have been mistaken. This year's survey, like those in previous year finds that about three-quarters of these people are "certain" they had the flu (75%) and spent one or more days in bed (74%). However, only just over one-third (35%) visited a doctor who diagnosed flu.

The Relationship between Having a Flu Shot and Not Getting the Flu

This year, for the second time in five surveys, *The Harris Poll* finds no correlation between those getting flu shots and those not getting the flu.

However, the absence of a correlation does not necessarily mean that the flu shots had no effect. One reason why the straight comparison of the incidence of flu of those who did and did not receive flu shots is not a solid measure of the vaccine's effectiveness is that those who are more likely to get the flu may also be more likely to get their flu shots. *The Harris Poll* suggests that this happened. Fully 61% of people aged 65 and over – a high risk group -- had flu shots, and 43% of people aged 50-64 did so. Fewer adults under 50 did so. This could explain why people over 50 were less likely to get the flu than younger people.

Another reason why these findings should be treated with caution is that it is difficult for patients and physicians to make a certain diagnosis of flu, as there are other conditions that can produce similar symptoms. For all these reasons it is the trends rather than precise percentages that are important.

So What?

This research is no substitute for the kind of double-blind clinical trials that are used to assess the efficacy and safety of new drugs. However, we believe that the year to year trends are meaningful and important. We conclude therefore that the vaccines used before the last two winters (2007/08 and 2008/09) were less effective than the vaccines used in three previous winters where these questions were asked in *The Harris Polls* (2003/04, 2004/05, 2006/07).

Scientists have reported that developing flu vaccines is particularly difficult because flu viruses tend to mutate rapidly. This may account for the poor results for the vaccines used before the last two winters. These new findings also suggest that, if the swine flu spreads widely, it may be a challenge to develop a really effective vaccine to prevent a pandemic.

Table 1
Those Who Had Flu Shots and Those Who Got the Flu This Winter

"Thinking back to this winter just ending... Did you get the flu this winter? Did you have a flu vaccine shot before this winter?"

Base: All Adults

	March 2004	March 2005	April 2007	April 2008	April 2009
	%	%	%	%	%
Percentage of all adults who had a flu shot before this winter	35	27	35	36	40
Percentage of all adults who got the flu this winter	18	21	15	20	18

Table 2
Age and Race of Those Who Had Flu Shots and of Those Who Got the Flu

"Did you get the flu this winter? Did you have a flu vaccine shot before this winter?"

Base: All Adults

	Had a Flu Shot	Got the Flu
	%	%
All Adults	40	18
Gender		
Men	40	20
Women	39	15
Age		
18-24	30	19
25-29	23	20
30-39	37	34
40-49	33	12
50-64	43	14
65+	61	10
Race/Ethnicity		
White	39	18
African-American	39	8
Hispanic	43	20

Table 3
How Many of Those Who Got or Did Not Have Flu Shots Got the Flu?

"Thinking back to this winter just ending... Did you get the flu this winter? Did you have a flu vaccine shot before this winter?"

Base: All Adults

	March 2004	March 2005	April 2007	April 2008	April 2009
	%	%	%	%	%
Percentage of all adults who had a flu shot who got the flu	14	13	13	21	18
Percentage of all adults who did not have flu shots who got the flu	21	23	17	20	18
How much less likely were people with flu shots to get the flu than those who were not vaccinated?	33%	43%	24%	-5%	0%

Table 4
The Experiences of Those Who Believe They Got the Flu After Having Had a Flu Shot

"Did you spend one or more days in bed with the flu? Did you visit a doctor who diagnosed the flu? How certain are you that you got the flu, and that it was not just a cough or a cold?"

Base: All adults who had a flu shot and believe they had the flu

	March 2004	March 2005	April 2007	April 2008	April 2009
	%	%	%	%	%
Spent one or more days in bed	79	85	74	78	74
Visited a doctor who diagnosed flu	51	53	39	53	35
Certain I got the flu	80	82	71	78	75

Table 5
Likelihood of Getting Flu Shot Next Winter

"Do you think you will or will not get a flu shot next winter?"

Base: All Adults

	Total	Had Flu This Winter		Had Flu Shot This Winter	
		Yes	No	Yes	No
	%	%	%	%	%
Will get flu shot	42	49	40	89	10
Will not get flu shot	43	35	45	5	67
Not sure	16	16	15	6	22

Methodology

This *Harris Poll* was conducted online within the United States between April 13 and 21, 2009, among 2,401 adults (aged 18 and over) of whom 955 got a flu shot before the winter of 2008/2009. Figures for age, sex, race, education, region and household income were weighted where necessary to bring them into line with their actual proportions in the population. Propensity score weighting was also used to adjust for respondents' propensity to be online.

All sample surveys and polls, whether or not they use probability sampling, are subject to multiple sources of error which are most often not possible to quantify or estimate, including sampling error, coverage error, error associated with nonresponse, error associated with question wording and response options, and post-survey weighting and adjustments. Therefore, Harris Interactive avoids the words "margin of error" as they are misleading. All that can be calculated are different possible sampling errors with different probabilities for pure, unweighted, random samples with 100% response rates. These are only theoretical because no published polls come close to this ideal.

Respondents for this survey were selected from among those who have agreed to participate in Harris Interactive surveys. The data have been weighted to reflect the composition of the adult population. Because the sample is based on those who agreed to participate in the Harris Interactive panel, no estimates of theoretical sampling error can be calculated.

These statements conform to the principles of disclosure of the National Council on Public Polls.

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