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Seasonal Influenza Vaccine Use by Adults in the U.S.

Detailed Survey Tables, Mid-November 2009

Katherine M. Harris, Juergen Maurer, and Lori Uscher-Pines

In mid-November 2009, RAND surveyed a nationally representative sample of adults age 18 and over (n=5,679) to collect data on the receipt of seasonal influenza vaccine in the United States. RAND collected comparable data in mid-November 2008.¹ The results of these efforts will inform public health officials and other stakeholders about progress toward vaccinating adults prior to the end of the vaccination season while action can still be taken to improve uptake.

The Advisory Committee on Immunization Practices (ACIP) to the Centers for Disease Control and Prevention (CDC) specifically recommends annual seasonal influenza vaccination for those age 50 or over; persons having certain high-risk medical conditions; health care workers; women who will be pregnant during flu season; residents of nursing homes or other long-term care facilities; and those having close contact with or caring for children under 5 years of age, persons age 50 or over, or other high-risk individuals.² Survey data reported here suggest roughly seven in ten U.S. adults are specifically recommended for vaccine. The ACIP also recommends annual vaccination against seasonal influenza for any adult who wants to reduce the risk of becoming ill with seasonal influenza or transmitting it to others.

Table 1
Actual and Intended Receipt of Seasonal Influenza Vaccine for Adults Age 18 and Older, Fall 2009

Indication	Unweighted Sample Size	Vaccinated Already		Intends to Be Vaccinated	
		Weighted Percentage	95% Confidence Interval (%)	Weighted Percentage	95% Confidence Interval (%)
All adults	5,679	32.0	29.7–34.3	16.5	14.7–18.4
Specifically recommended for the vaccine	5,073	37.0	34.4–39.6	18.6	16.4–20.8
Not specifically recommended for the vaccine	606	18.0	13.1–22.8	10.7	7.2–14.2

Table 2
Timing of Seasonal Influenza Vaccine Uptake: Comparing Fall 2008 to Fall 2009

Cumulative Uptake Through September	Fall 2008 (unweighted n= 3,972)		Fall 2009 (unweighted n= 5,679)	
	Weighted Percentage	95% Confidence Interval (%)	Weighted Percentage	95% Confidence Interval (%)
September	3.4	2.5–4.3	9.1	7.7–10.5
October	23.0	20.8–25.2	29.3	27.1–31.5
Mid-November	29.6	27.0–32.1	32.0	29.7–34.6

NOTE: Lack of complete overlap in fielding periods resulted in different reference periods used in computing overall midseason uptake. The 2008 survey was in the field from November 7 to November 19, 2008, whereas the 2009 survey was in the field from November 4 to November 16, 2009. On average, survey responses in 2009 were completed two days earlier than in 2008.

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Table 3
Actual and Intended Receipt of Seasonal Influenza Vaccine for Adults Age 18 and Older by Recommended Subgroups, Fall 2009

Indication	Unweighted Sample Size	Vaccinated Already		Intends to Be Vaccinated	
		Weighted Percentage	95% Confidence Interval (%)	Weighted Percentage	95% Confidence Interval (%)
Age 50 and older	3,792	42.8	40.1–45.5	18.8	16.5–21.0
High-risk health condition	1,740	43.9	39.3–48.5	20.2	16.7–23.7
Health care worker	1,276	49.4	44.8–54.1	11.7	8.7–14.7
Contact with high-risk individual	1,752	34.7	30.7–38.8	19.9	16.5–23.3

Table 4
Actual and Intended Receipt of Influenza Vaccine for Adults Age 18 and Older by Selected High-Risk Health Condition, Fall 2009

Indication	Unweighted Sample Size	Vaccinated Already		Intends to Be Vaccinated	
		Weighted Percentage	95% Confidence Interval (%)	Weighted Percentage	95% Confidence Interval (%)
Asthma	655	37.0	29.8–44.2	17.4	12.2–22.6
Chronic lung disease	193	50.2	39.5–60.8	24.1	15.2–32.9
Diabetes	765	47.4	40.2–54.6	27.8	21.4–34.2
Heart disease	433	49.6	41.8–57.3	21.3	15.2–27.5

Table 5
Actual and Intended Receipt of Influenza Vaccine for Adults Age 18 and Older by Race/Ethnicity, Fall 2009

Race/Ethnicity	Unweighted Sample Size	Vaccinated Already		Intends to Be Vaccinated	
		Weighted Percentage	95% Confidence Interval (%)	Weighted Percentage	95% Confidence Interval (%)
White	2,696	36.0	32.9–39.0	14.4	12.3–16.6
Black	1,404	25.3	20.1–30.5	22.8	16.5–29.0
Hispanic	730	21.6	16.5–26.7	20.5	15.1–25.9
Other	849	24.2	18.6–29.8	19.1	13.0–25.2

Table 6
Most-Influential Sources of Information for Vaccination Decision, Fall 2009

	Vaccinated (unweighted n= 3,330)		Unvaccinated (unweighted n= 2,341)	
	Weighted Percentage	95% Confidence Interval (%)	Weighted Percentage	95% Confidence Interval (%)
Health care provider	44.2	40.2–48.3	25.0	22.2–27.7
Friends and family members	10.7	7.5–13.8	10.7	8.5–12.8
Employer	10.3	7.4–13.2	2.6	1.5–3.6
News reports	7.7	6.0–9.4	13.4	11.4–15.5
Centers for Disease Control and Prevention	6.2	4.7–7.7	6.9	5.1–8.7
State or local health department	2.8	1.6–4.1	2.6	1.4–3.8
None of the above	9.5	6.6–12.4	31.7	28.5–34.9
Other	8.6	5.9–8.9	7.1	5.4–8.9

Table 7
Main Reason Why Unvaccinated Adults Do Not Intend to Be Vaccinated, Fall 2009 (n=2,417)

Main Reason	Weighted Percentage	95% Confidence Interval
I don't need it	22.3	19.0–25.6
I don't believe in flu vaccines	21.2	18.0–24.4
Might get sick or experience side effects	17.3	14.5–20.0
Others need it more than I do	7.4	5.5–9.2
I dislike needles	5.3	3.3–7.3
Flu vaccines cost too much	4.5	2.7–6.4
I don't know enough about seasonal flu	3.2	1.7–4.7
It takes too much time to get the vaccine	1.5	0.5–2.4
I got/will get an H1N1/swine flu vaccine	1.2	0.6–1.9
There was no vaccine available when I tried to get it	0.7	0.3–1.2
I don't know where to get the vaccine	0.3	0.0–0.6
Other	15.0	12.2–17.9

Table 8
Main Reason Why Adults Intending to Be Vaccinated Have Not Yet Been Vaccinated, Fall 2009 (n=918)

Main Reason	Weighted Percentage	95% Confidence Interval
There was no vaccine available when I tried to get it	38.2	32.2–44.1
I haven't had the time	29.3	23.7–34.8
It slipped my mind	6.3	3.9–8.6
I don't know where to get a vaccine	4.2	1.5–6.9
I did not realize flu season had begun	2.1	0.7–3.5
Other	20.0	14.8–25.3

Methodology

This occasional paper presents data from a nationally representative survey of adults age 18 and older (n=5,679) conducted for RAND by Knowledge Networks, Inc., a nationally representative online research panel consisting of roughly 40,000 households. Panelists are initially recruited with known probabilities based on a dual sampling frame that combines random-digit dialing and address-based sampling. The Knowledge Networks panel covers both the online and offline population, as households are not required to have Internet access at the time of recruitment. Household members agree to respond to surveys in exchange for small financial incentives or free Internet access. Studies using the Knowledge Networks panel have been published in peer-reviewed literature.

For additional information about the survey and sampling methodology, see "Knowledge Networks Methodology," available at <http://www.knowledgenetworks.com/ganp/docs/Knowledge%20Networks%20Methodology.pdf>

The survey was administered to a general sample of 7,222 adults and a sample of 1,889 health care workers between November 4, 2009, and November 16, 2009. Health care workers in the panel were identified based on self-reported employment in a health care profession, including medical doctor, nurse, nursing aide, pharmacist, or paramedic. Sixty-three percent of panelists in the general adult sample and 67 percent of health care workers responded to the survey. The sample was designed to yield a margin of error for overall vaccine uptake in the combined sample of plus or minus 2 percentage points and plus or minus 3 to 5 percentage points for subgroups based on age, minority status, and being a health care worker. The survey questionnaire is available at <http://www.knowledgenetworks.com/flu2009fall/>

All analyses were conducted using post-stratification weights to produce nationally representative estimates adjusting for known selection probabilities; oversampling of elderly adults, minorities, and health care workers; and non-response to panel recruitment and panel attrition. These adjustments are based on demographic distributions from the most recent data from the Current Population Survey (CPS) and other non-CPS benchmarks for Spanish-language and Internet use. The weighting procedure is described in greater detail at <http://www.knowledgenetworks.com/ganp/reviewer-info.html>

For a general overview and graphical representation of these results, see Katherine M. Harris, Juergen Maurer, and Lori Uscher-Pines, *Mid-season Influenza Vaccine Use by Adults in the U.S.: A Snapshot as of Mid-November 2009*, Santa Monica, Calif.: RAND Corporation, OP-289-GSK, 2009, available at http://www.rand.org/pubs/occasional_papers/OP289/

¹ Katherine M. Harris, Juergen Maurer, and Nicole Lurie, *Midseason Influenza Vaccine Use by Adults in the U.S.: Detailed Survey Data Tables*, Santa Monica, Calif.: RAND Corporation, OP-241-GSK/1, 2008. Available at http://www.rand.org/pubs/occasional_papers/OP241.1/

² A.E. Fiore et al., Prevention and control of influenza: Recommendations of the Advisory Committee on Immunization Practices (ACIP), 2009. *MMWR Recomm Rep*, 2009. 58(RR08): pp. 1–52. Persons with chronic conditions considered to be at "high risk" include persons who have chronic pulmonary (including asthma), cardiovascular (except hypertension), renal, hepatic, cognitive, neurologic/neuromuscular, hematological or metabolic (including diabetes mellitus) disorders and persons who have an immunosuppressing health condition.

This survey was conducted under contract with GlaxoSmithKline (GSK). The findings have been subject to RAND's quality assurance and peer review process, and RAND alone is responsible for any errors in the content. The RAND Corporation is a nonprofit research organization providing objective analysis and effective solutions that address the challenges facing the public and private sectors around the world. RAND's publications do not necessarily reflect the opinions of its research clients and sponsors. RAND® is a registered trademark.

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