

Strategies for Improving Influenza Vaccination Rates

Mauro Torno MD
Long Beach Department of Health & Human Services
HIV Clinic

Herd immunity: Seasonal influenza vaccination reduces the likelihood of becoming ill with influenza or transmitting influenza to others. http://www.cdc.gov/flu/immunization/vaccination/vaccine_safety.htm <http://www.niaid.nih.gov/topics/communityimmunity/age>

The diagram illustrates the concept of herd immunity through three stages. In the first stage, a population is mostly susceptible (blue) with a few infected individuals (red). As the disease spreads, the number of infected individuals increases. In the third stage, a sufficient number of individuals are vaccinated (green), which breaks the chain of transmission and prevents the disease from spreading further.

Immunization Trends in Adults 2000 to 2010

http://www.cdc.gov/nchs/data/has/hus11_inBrief.pdf

Figure 12. Influenza and pneumococcal vaccination among adults, by type of vaccination and age: United States, 2000–2010

The figure consists of two line graphs. The left graph, titled 'Influenza vaccination in the past 12 months', shows vaccination rates for four age groups: 75 years and over (highest, around 70-80%), 65-74 years (around 60-70%), 50-64 years (around 30-40%), and 18-49 years (lowest, around 10-20%). The right graph, titled 'Pneumococcal vaccination ever', shows rates for three age groups: 75 years and over (highest, around 60-70%), 65-74 years (around 50-60%), and 18-64 years, high-risk category (lowest, around 20-30%).

The vaccination coverage required to establish herd immunity against influenza viruses. Plans-Rubio P. Prev Med 2012 July; 55:72-7. E Pub 2012 Mar 4.

OBJECTIVE: 1) To determine the influenza vaccination coverage required to establish herd immunity, and 2) to assess whether the percentages of vaccination coverage proposed and those registered in the United States and Europe are sufficient to establish herd immunity.

METHODS:
The vaccination coverage required to establish herd immunity was determined by taking into account the number of secondary cases per infected case and the vaccine effectiveness.

RESULTS:
The objectives of vaccination coverage proposed in the United States - **80% in healthy persons and 90% in high-risk persons - are sufficient to establish herd immunity**, while those proposed in Europe - only 75% in elderly and high-risk persons - are not sufficient.

The percentages of vaccination coverage registered in the United States and Europe are not sufficient to establish herd immunity.

CONCLUSION:
The influenza vaccination coverage must be increased in the United States and Europe in order to establish herd immunity. It is necessary to develop new influenza prevention messages based on herd immunity.

Where we are...
Source: Early release of selected estimates on data from the 2011 National Health Interview Survey, data table for figure 4.2

Influenza Vaccination (Data are for the U.S.)
<http://www.cdc.gov/nchs/fastats/flu.htm>

- Percent of children 6 months to 17 years who received an influenza vaccination during the past 12 months: **45.3%**
- Percent of adults 18-49 years who received an influenza vaccination during the past 12 months: **27.2%**
- Percent of adults 50-64 years who received an influenza vaccination during the past 12 months: **42.7%**
- Percent of adults 65 years and over who received an influenza vaccination during the past 12 months: **67.0%**

Where we should be or where we hope to be

	Where we are (2011)	Healthy People 2020 Objective
% of children 6 months to 17 years who received influenza vaccine	45.3%	80%
% adults 18 to 49 years who received influenza vaccine	27.2%	80%
% of adults 50 to 64 years who received influenza vaccine	42.7%	80%
% of adults ≥ 65 who received influenza vaccine	67.0%	90%

Large surveys on barriers to influenza immunization

National Foundation for Infectious Diseases (NFID) Adult Consumer Survey (thru Opinion Research Corporation CARAVAN® Omnibus). Results are based on telephone interviews conducted August 7-11, 2008 with a sample of **2,029 adults** (1010 men and 1019 women).

Barriers to Adult Immunization. Johnson D, Nichol K and Lipczynski K. Am J Med. 2008; 121 (7 suppl) S28-S35. Consumers (N = 2,002) and healthcare providers (N = 200) completed structured telephone interviews concerning their attitudes and knowledge about adult vaccines and factors affecting their vaccination decisions.

Determinants of Influenza Vaccination, 2003-2004: Shortages, Fallacies and Disparities. Jones TF, Ingram LA, Craig AS, Schaffner W. Clinical Infectious Diseases 2004;39:1824-1828. Telephone survey in Tennessee from February to May 2004 to assess people's knowledge, attitudes, and beliefs about influenza vaccination. **4,028 people** were interviewed. (National Network for Immunization Information, an affiliate of the IDSA, AAP, ACOG) <http://www.immunizationinfo.org/science/barriers-influenza-vaccination>

Continue talking to patients about the importance of influenza vaccination

http://www.preventinfluenza.org/newsletters/NFID_consumer_survey.pdf

Nearly Four in 10 Patients Have Never Talked to their Health Care Professional (HCP) about Influenza Vaccination*

Reason	Percentage
Never discussed influenza vaccination	38%
Patient initiated conversation	29%
HCP initiated conversation	29%
Don't know/refused	5%

*Those who do not add up to 100% due to rounding.

Seven in 10 Surveyed Say they Would be Likely or Very Likely to Get an Influenza Vaccine if their Health Care Professional Recommended it

Response	Percentage
Very likely/likely	70%
Not very likely/not at all likely	30%

Providers are at the forefront of promoting influenza vaccination

Adults who were told they needed an influenza vaccination most often say the recommendation came from a family, general or internal medicine practice (**73 percent**).

Nearly eight in 10 consumers (**79 percent**) have seen a HCP in the last 12 months. **80 percent** of those who have been to a HCP in the last year have gone more than once.

More than 9 in 10 (**93 percent**) who were vaccinated last year say they plan to be vaccinated again this year.

About 4 in 5 (**82 percent**) who skipped vaccination last year do not plan to get vaccinated this year.

Patients did not get influenza vaccination for, more or less, the same reasons

http://www.preventinfluenza.org/newsletters_NFID_consumer_survey <http://www.amjmed.com/article/S0001632911001111>

"I didn't think I needed it" (56 %)

Concern about side effects (45 %)

Not believing it was an appropriate time to be vaccinated (32%)

Avoidance of all vaccines (31 %)

Belief that influenza is not serious (20 %)

Did not recognize a personal risk for getting influenza (17 %)

Reason	Percentage
Healthy, don't need it	56%
Shortage, others may need it more	~45%
May have side effects	~45%
Doctor hasn't told me I need it	~32%
Might not be available	~32%
Don't visit a doctor regularly	~31%
May not work well	~31%
Might get the disease	~20%
Don't know when to get it	~20%
Could worsen current conditions	~17%
Double needles or shots	~17%
Costs too much	~17%
Insurance doesn't cover it	~17%

Inappropriate beliefs about immunizations in high risk patients remain a problem

<http://www.immunizationinfo.org/science/barriers-influenza-vaccination>

...unvaccinated persons commonly believed that vaccination was unnecessary (33%), that vaccination would cause illness (21%), or that they failed to think about being vaccinated (21%), and these beliefs were significantly more common among individuals who had a high-risk medical condition than among those who did not.

...the survey also identified cases where health providers missed opportunities to immunize against influenza when high risk patients were seen for other reasons...

The Long Beach Department of Health & Human Services HIV Clinic

Rates and correlates of influenza vaccination among HIV-infected adults in the HIV Outpatient Study (HOPS), USA, 1999-2008. Durham MD, Buchacz K, Armon C, Patel P, Wood K, Brooks JT, HOPS Investigators.

BACKGROUND: We sought to describe rates of vaccination among HIV-infected adults in care and identify factors associated with vaccination.

METHODS: Using data abstracted from medical records of participants in the HIV Outpatient Study (HOPS) during 8 influenza seasons (1999-2008).....we examined factors associated with increased prevalence of annual influenza vaccination.

RESULTS: Among active patients, 25.8% to 43.3% were vaccinated for influenza each year (annual mean=35%, test for trend p=0.71). Vaccination rates peaked in October and November of each season and decreased sharply thereafter.

Patients who were male (67.2%), non-Hispanic white (70%) or Hispanic (66%), had lower HIV viral loads (73.5%), were prescribed antiretroviral treatment (72.7%), or had a greater number of clinical encounters per year (86.7%) were more likely to receive influenza vaccination.

DISCUSSION: The decreased likelihood of vaccination among women and non-Hispanic black patients suggests the need for focused efforts to reduce disparities. Increasing patient and clinician education on the importance of universal vaccination, and ensuring that vaccination activities continue in HIV clinics during the later months of the influenza season may improve influenza vaccine coverage.

Influenza and Pneumococcal vaccination rates in HIV Clinics.
Wortley et al. Pneumococcal & Influenza Vaccination levels among HIV Infected Adolescents & Adults Receiving Medical Care in the United States

Objective: To assess influenza and pneumococcal vaccination coverage among HIV-infected adolescents and adults receiving medical care in the United States.

Design: Record reviews of the charts of adult HIV patients who attended > 90 clinics, hospitals, and private medical practices in nine cities in the U.S. They looked for documentation of influenza & pneumococcal vaccinations in the medical records during time periods

Results: Overall, 33% of individuals received influenza vaccination while 37% of individuals received pneumococcal vaccination. In their study, vaccination levels varied little by age group, race/ethnicity, or mode of HIV exposure

Conclusion: Until new, more effective means of preventing pneumococcal disease and influenza become available, efforts should be directed towards improving vaccination levels among HIV-infected individuals.

Where we should be or where we hope to be

	Where we are (2011)	Healthy People 2020 Objective
% of children 6 months to 17 years who received influenza vaccine	45.3%	80%
% adults 18 to 49 years who received influenza vaccine	27.2%	80%
% of adults 50 to 64 years who received influenza vaccine	42.7%	80%
% of adults ≥ 65 who received influenza vaccine	67.0%	90%

Long Beach HIV Clinic Study

Objective: To determine the influenza (and pneumococcal) **vaccination rates** among HIV-infected adults receiving medical care from the clinic

Methods: Medical record review of charts of HIV infected adult patients receiving care from the clinic. Chart review focused on finding documentation of receipt of influenza (and pneumococcal vaccination) for period July 1, 2010 to June 30, 2011. (Reporting: either yes or no)

Exclusion criteria: Clinic attendance after June 30, 2011

Long Beach HIV Clinic Study

Results: n=161 patient charts reviewed

95.6% (154/161) of the patients had received influenza vaccination

About 95% (147/154) received the flu shot from the clinic

About 5% (7/154) received the flu shot from the outside:
pharmacies (3) jail (2) hospitals (2)

Long Beach HIV Clinic Study

Results: n=161 patient charts reviewed

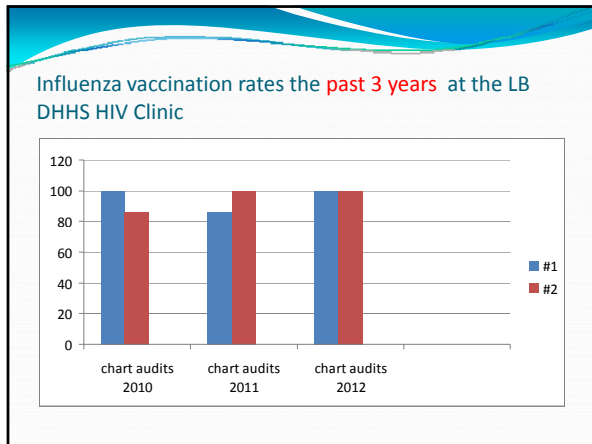
95.6% (154/161) of the patients had received influenza vaccination

Patients were allowed to decline the shots.

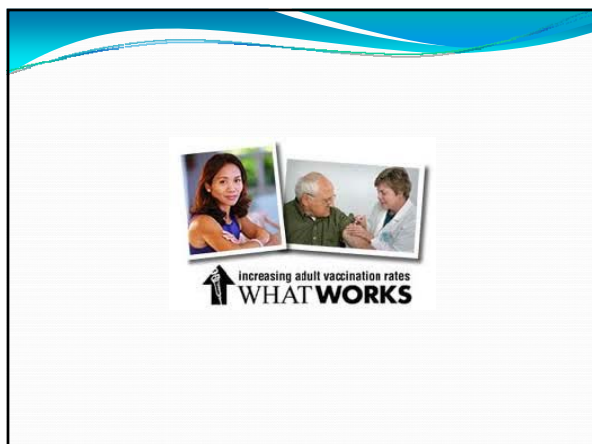
3.1% (5/161) declined the flu shot

The clinic missed giving vaccinations to very few patients (~ 1%)

1.3% (2/161) missed getting the flu shot



- ### Limitations of this study
- Adults (pediatric population not covered)
 - Influenza vaccine was given at no cost to the patient (different situation in clinics where patients will have to pay)
 - HIV clinic setting (as opposed to General Medicine or Family Practice clinic)
 - Influenza vaccination (intramuscular trivalent influenza vaccine for HIV + patients and not the intranasal Flu Mist)
 - Data derived from July 1, 2010 to June 30, 2011 season



What worked?
Awareness always of the value of influenza vaccination

Influenza...

- highly contagious
- 49,000 deaths each year
- 22 million health care visits
- 200,000 hospitalizations, depending on severity of annual outbreaks
- can complicate the management of chronic illnesses, such as heart disease & CHF
- risks for complications, hospitalizations, and deaths higher among adults age ≥ 65 and older, children < 5 years & people of any age who have medical conditions that place them at increased risk for complications from influenza.
- bacterial pneumonia frequent complication of influenza
- together, influenza and pneumonia constitute the seventh leading cause of death in adults over 65

What worked?
Awareness always of the value of influenza vaccination

Influenza...

- people with HIV/AIDS are considered at increased risk from serious influenza-related complications.
- higher risk of influenza-related death in HIV-infected people.
- influenza symptoms might be prolonged and the risk of influenza-related complications higher for certain HIV-infected people.
- vaccination with a flu shot has been shown to produce an immune response in people infected with HIV.
- it is generally safe to give

What worked?
Good source of information #1: <http://www.cdc.gov/flu/protect/keyfacts.htm>

The screenshot shows the CDC website interface. The main heading is 'Key Facts About Seasonal Flu Vaccine'. Below this, there are several sections: 'Why should people get vaccinated against the flu?', 'Flu Vaccination', and 'On This Page'. The 'Why should people get vaccinated against the flu?' section contains text about the benefits of vaccination, such as preventing illness, reducing the risk of complications, and protecting others. The 'Flu Vaccination' section discusses the timing of the vaccine and the importance of getting vaccinated each year. The 'On This Page' section lists various topics related to flu vaccination, including vaccine effectiveness, vaccine safety, and vaccine types and distribution. The CDC logo is visible in the bottom right corner of the screenshot.

What worked?
 Good sources of information <http://www.cdc.gov/flu/protect/keyfacts.htm>

- > Why should people get vaccinated against the flu?
- > How do flu vaccines work?
- > What kinds of flu vaccines are available?
- > Who should get vaccinated this season?
- > Who should not be vaccinated?
- > When should I get vaccinated?
- > Why do I need a flu vaccine every year?
- > Does flu vaccine work right away?
- > Can I get seasonal flu even though I got a flu vaccine this year?
- > How well does the seasonal vaccine work?
- > What are the side effects of the injectable flu shot? The nasal?

What worked?
 Good sources of information <http://www.cdc.gov/flu/protect/keyfacts.htm>, <http://www.cdc.gov/vaccines/ed/imzupdate/downloads/egg-allergy-algorithm.pdf>

FIGURE 1. Influenza vaccine dosing algorithm for aged children 6 months through 10 years, 2012-13 influenza season

* Doses should be administered at least 4 weeks apart.

† For specific use, this algorithm takes into consideration only doses of seasonal influenza vaccines when vaccination history from before July 1, 2010, is available. If a child age seasonal influenza vaccine during the previous season, and at least 1 dose of a 20 seasonal vaccine or the monovalent 2009(A/H1N1) vaccine, then the child needs only through to each year only 1 dose of vaccine in 2010-11 if they have received any of July 1, 2010; (2) 2 or more doses of seasonal influenza vaccine before July 1, 2010, in more doses of seasonal influenza vaccine before July 1, 2010; and 1 or more doses of these conditions is not need require 2 doses in 2012-2013.

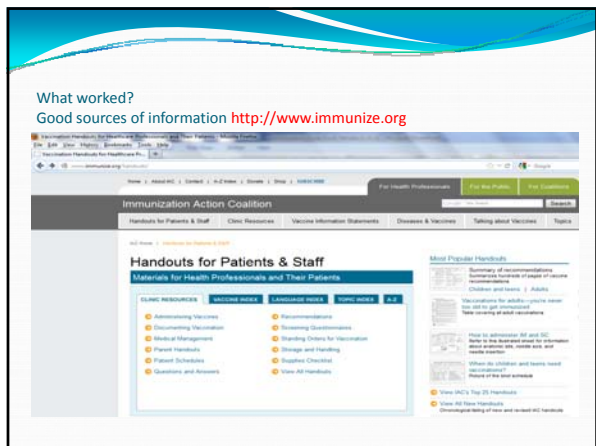
Abbreviated Text: This figure shows direct influenza vaccine dosing algorithm for aged 2012-13 influenza season. Children are recommended to receive 2 doses this season the 2012-13 season. This is illustrated in two approaches for determining the number of which are acceptable.

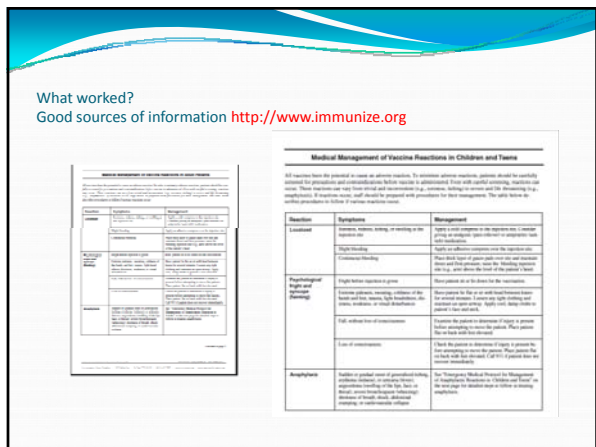
Recommendations regarding influenza vaccination for persons who report allergy to eggs – Advisory Committee on Immunization Practices (ACIP), 2012 2012 influenza season

- Can the person not tightly control egg for a vaccinated egg without reaction? → Administer vaccine per usual practice.
- Other eating eggs or egg containing foods, does the person experience GI? Issues? → Administer TSI; Observe for reaction for at least 30 minutes after vaccination.
- Does the person experience other symptoms such as:
 - Cardiovascular changes
 - Respiratory distress
 - Anaphylaxis
 - Gastrointestinal
 - IG_A hemolysis/precipitation
 - Hypotensive reaction
 - Possible respiratory airway injury
 - Medical attention?
 → Refer to a physician with expertise in management of allergic conditions for further evaluation.

* Person with egg allergy might tolerate egg in baked product (e.g., bread or salad) if reacted to egg proteins from fresh shell because the protein is egg shell.

What worked?
 Good sources of information # 2: <http://www.immunize.org>









What about people who get a seasonal flu vaccine and still get sick with flu-like symptoms? <http://www.cdc.gov/flu/protect/keyfacts.htm>

- ❑ People may be exposed to an influenza virus shortly before getting vaccinated or during the two-week period that it takes the body to gain protection after getting vaccinated. This exposure may result in a person becoming ill with flu before the vaccine begins to protect them.
- ❑ People may become ill from other (non-flu) viruses that circulate during the flu season, which can also cause flu-like symptoms (such as rhinovirus).
- ❑ A person may be exposed to an influenza virus that is not included in the seasonal flu vaccine. There are many different influenza viruses that circulate every year. The flu shot protects against the 3 viruses that research suggests will be most common. Unfortunately, some people can remain unprotected from flu despite getting the vaccine. This is more likely to occur among people that have weakened immune systems. However, even among people with weakened immune systems, the flu vaccine can still help prevent influenza complications.



What worked?
 Good source of information #3: <https://fluinearyou.org/>



What worked?
 Flow sheets prompts review of immunization status

EIP Medical Flow Chart

Initial Evaluation			Immunizations		
Test	Date	Results			
IV Test			Pneumonia & 5 years influenza yearly		
UPR/TR PA					
HEP B	1st	2nd	Tetanus (Td) > 10 years		
HEP C	1st	2nd	HEP B: 1 st 2 nd 3 rd		
HEP A	1st	2nd	HEP A: 1 st 2 nd 3 rd		
ToxO antibodies	1st	2nd	Others:		
PPD					
CXR					
Health Maintenance (Subsequent Evaluation)			Surveillance		
PPD →			Date	Date	

What worked?
Flow sheet as provider reminder / alert

Initial Evaluation		Immunizations	
Test	Date	Results	
HIV Test	1/2/11	⊖	⊖
RPR/TPPA	1/2/11	⊖	⊖
HEP B	1/2/11	⊖	⊖
HEP C	1/2/11	⊖	⊖
HEP A	1/2/11	⊖	⊖
TONG antibodies	1/2/11	⊖	⊖
PPD RT23	1/2/11	⊖	⊖
CXR	1/2/11	⊖	⊖

What worked?
Flow sheet as provider reminder / alert

Initial Evaluation		Immunizations	
Test	Date	Results	
HIV Test	1/2/11	⊖	⊖
RPR/TPPA	1/2/11	⊖	⊖
HEP B	1/2/11	⊖	⊖
HEP C	1/2/11	⊖	⊖
HEP A	1/2/11	⊖	⊖
TONG antibodies	1/2/11	⊖	⊖
PPD RT23	1/2/11	⊖	⊖
CXR	1/2/11	⊖	⊖

What worked?
Standing orders downloadable from immunize.org

Standing Orders for Administering Influenza Vaccine to Adults

Purpose: To reduce morbidity and mortality from influenza by vaccinating all adults who meet the criteria established by the Centers for Disease Control and Prevention's Advisory Committee on Immunization Practices.

Policy: Under these standing orders, eligible nurses and other healthcare professionals (e.g., pharmacists), where allowed by state law, may vaccinate patients who meet any of the criteria below.

Procedure:

1. Identify adults with no history of influenza vaccination for the current influenza season.
2. Screen all patients for contraindications and precautions to influenza vaccine.

This policy and procedure shall remain in effect for all patients of the _____ until rescinded or until _____ (date). (name of practice or clinic)

Medical Director's signature: _____ Effective date: _____

Revised 08/08/12 Approved by the Council on State Collaborative Practices www.immunize.org/agd/01071.pdf • Item #17074 (8/12)
Immunization Action Coalition • 1373 Selby Ave. • St. Paul, MN 55104 • (651) 647-9009 • www.immunize.org • www.vaccineinformation.org

What worked?

QA chart audits: missed influenza vaccination opportunity prompts an explanation during quarterly chart audits

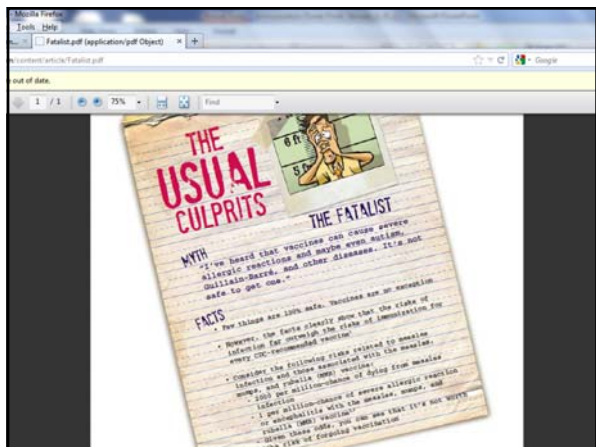
- Chart audit every 3-6 months
- Random audit of 10% of clinic population
- Involves Medical Assistants who are involved in giving the immunization vaccines
- Missed vaccination opportunity prompts an explanation during quarterly chart audits

What worked?

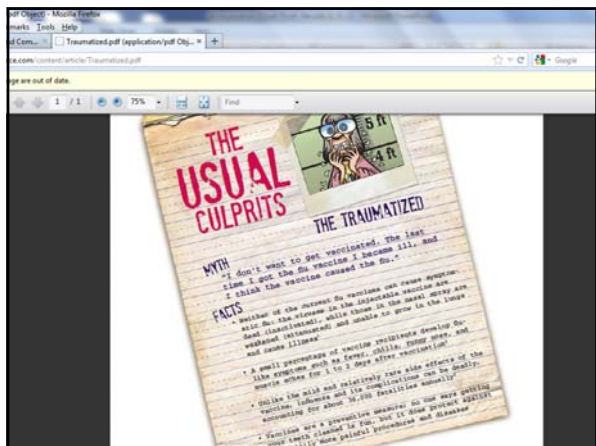
Good source of information # 4: www.myvaccinesource.org

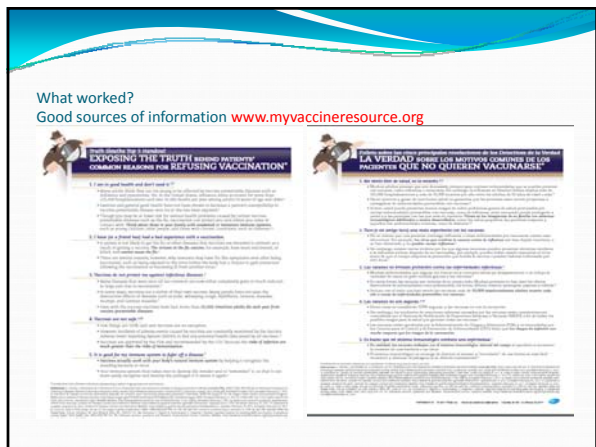
The screenshot shows the homepage of myvaccine.org. At the top, there are navigation tabs: HOME, PRACTICE SUPPORT, PATIENT COMMUNICATION, STAFF EDUCATION, VACCINE PROMOTION, RESOURCES, and LINKS. Below the navigation is a search bar and a 'REGISTER' button. A central video player is visible, showing a man in a suit. To the right of the video are several links and information sections, including '10 Reasons to Be Vaccinated' and 'Current State of Adult Immunization'.

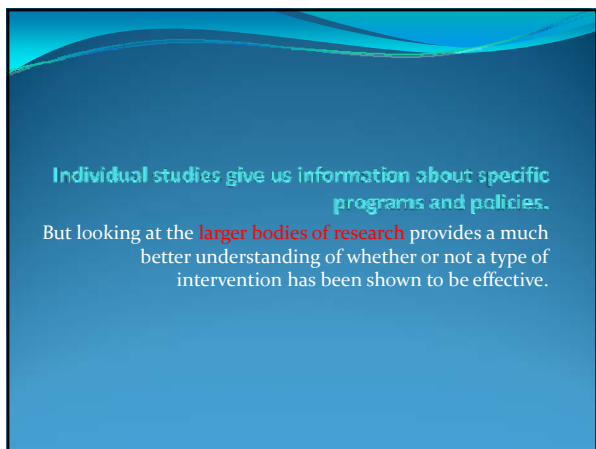












The Community Preventive Services Task Force
<http://www.thecommunityguide.org/uses/general.html>


- The Community Guide is a resource for evidence-based Task Force recommendations and findings about what works to improve public health.
- The Task Force is an independent, nonfederal, uncompensated body of public health and prevention experts, whose members are appointed by the Director of CDC.

Each Task Force finding is:

- Based on **systematic reviews of published literature**
- Based on the **strength of the evidence of effectiveness** in changing outcomes
- Conducted by a **team of experts** on behalf of the Task Force
- **Meant to be used along with information about local needs, goals, and constraints**


Enhancing Access to Vaccination Services
<http://www.thecommunityguide.org/vaccines/universally/index.html>

- ❑ **Home visits** either by providing vaccinations to clients in their homes or by providing referral to available immunization services
- ❑ **Reducing client out of pocket costs**
- ❑ **Vaccination programs in schools & organized child care centers** like non-home day care, nursery or pre-school, and federal Head Start settings for children aged ≤ 5 years
- ❑ **Vaccination Programs in WIC settings** especially if on site vaccinations and incentives for vaccinations (like monthly vouchers) are available




Increasing Community Demand for Vaccinations
<http://www.thecommunityguide.org/vaccines/universally/index.html>

- ❑ **Client or Family Incentive Rewards** which may be monetary or not (e.g., food vouchers, gift cards, lottery prizes, baby products).
- ❑ **Client Reminder & Recall Systems** reminding people that vaccinations are due (reminders) or late (recall) --- telephone, letter, postcard --- and may be accompanied by educational messages regarding the importance of the vaccine
- ❑ **Vaccination Requirements for Child Care, School, & College Attendance:** Laws or policies requiring vaccinations as a condition of child care, school, and college attendance to reduce the incidence of vaccine-preventable disease




Provider or System Based Interventions
<http://www.thecommunityguide.org/vaccines/universally/index.html>

- **Health care system-based interventions implemented in combination**
 Example: combining outreach with home visits and standing orders for vaccinations
- **Immunization information systems (IIS)** are confidential, population-based, computerized databases that record all immunization doses administered by participating providers to persons residing within a given area. It can 1) support interventions like client reminder and recall systems 2) evaluate public health responses to outbreaks of vaccine-preventable disease 3) help vaccine management & accountability 4) determine client vaccination status for decisions made by clinicians, health departments, and schools and 5) aid surveillance and investigations on vaccination rates, missed vaccination opportunities, invalid dose administration, and disparities in vaccination coverage




Provider or System Based Interventions...continued
<http://www.thecommunityguide.org/vaccines/universally/index.html>

- **Evaluate HCP performance** in delivering vaccinations to a client population and give them feedback on their performance.
- **Provider reminders** to inform HCPs that individual clients are due for vaccinations --- computerized or simple reminders, alerts in EMRs, checklists or flowcharts)
- **Standing orders**
- **Community-based interventions** between community organizations, local government, and vaccination providers. (e.g conduct outreach of clients, mass media, & expanded access to vaccination services



Stinchfield, Patricia. Practices-Proven Interventions to Increase Vaccination Rates and Broaden the Immunization Season. Am J Med 2008;121 (Supp 2); pages S11-S21

<http://www.cdc.gov/mmwr/preview/mmwrhtml/rr4808a1.htm>
<http://www.amjmed.com/article/S0002-9343%2808%2900466-X/fulltext>



Successful types of interventions

Influenza vaccination rates may be improved by interventions that increase vaccine access, increase demand, and overcome practice-related barriers (Table 1).^{7, 8}

Table 1. Strategies to increase influenza vaccination coverage

Intervention	Description
• Increase vaccine access	
—Vaccinate in January and beyond	Deliver vaccine to patients throughout the influenza season rather than just in the early months of the season (October and November)
—Vaccinate at all visit types	Assess patient need for influenza vaccination at all types of healthcare visits, including routine visits, sick and follow-up visits, and during hospitalization
—Vaccine-only clinics	Reduce waiting time/need to make an appointment to obtain vaccination through vaccination-only services
—“Express-lane” vaccination service	
—Extend office hours	Increase or make more convenient the hours during which vaccination services are provided
—Provide vaccination services at alternative, nontraditional sites	Deliver vaccinations in settings in which they were not previously provided

• Increase demand	
—Clinic-based patient education	Provide information regarding vaccination to target patients served in a specific medical or public health clinical setting; techniques include mass mailings, workshops, posters, booklets, and televisions in the waiting room
—Community-wide education	Deliver information regarding vaccination to a target population in a geographic area; techniques include media campaign (television, radio, newspapers, posters, leaflets, booklets) and computer-based programs
—Patient reminder/recall systems	Send alerts that vaccinations are due (reminders) or late (recall) to patients; delivery techniques include telephone calls, letters, postcards, and e-mails

• Overcome practice-related barriers	
—Standing orders	Empower medical personnel to prescribe or deliver vaccinations to patient populations by protocol without direct physician involvement at each interaction
—Provider reminders/recall	Settings include clinics, hospitals, and nursing homes. Inform those who administer vaccinations that individual patients are due (reminder) or overdue (recall) for vaccination. Delivery techniques include flag patient charts, and computer or e-mail notifications.
—Assessment and feedback for vaccination provider	Perform a retrospective evaluation of provider performance (vaccination of at-risk patients) and report results to providers to motivate higher vaccination rates; can also involve other activities (e.g., benchmarking; comparing performance to a goal or standard)
—Addition of influenza vaccination to quality-care checklists	Formalize influenza vaccination into routine practices that form the basis of high-quality patient care
—Provider education and recommendation	Provide information to vaccination providers to increase their knowledge or change attitudes; techniques include written materials, videos, lectures, continuing medical education programs, and computer-based learning programs

Adapted from the Centers for Disease Control and Prevention (CDC)⁷ and *Ann Intern Med*.⁸

Thank you

Are You At Risk? Don't let the flu sneak up on you. **FLU SEASON AHEAD** Get the facts. Get the shot.

Flu shots don't really hurt this bad, but how would we resist the photo?

IT'S TRUE. The flu shot can't give you the flu.

© Centers for Disease Control and Prevention (CDC). Reprinted with permission from the American Lung Association.

Blank slide with a blue wavy header.

- Routine annual influenza vaccination is recommended for all persons aged ≥ 6 months.
- **Vaccine Strains for the 2012–13 Influenza Season**
- U.S. influenza vaccines for 2012–13 will contain A/California/7/2009 (H1N1)-like, A/Victoria/361/2011 (H3N2)-like, and B/Wisconsin/1/2010-like (Yamagata lineage) antigens. The influenza A(H3N2) and B antigens differ from the respective 2010–11 and 2011–12 seasonal vaccine antigens (3). The influenza A(H1N1) vaccine virus strain is derived from an influenza A(H1N1)pdm09 (2009[H1N1]) virus and was included in the 2009(H1N1) monovalent pandemic vaccine as well as the 2010–11 and 2011–12 seasonal vaccines.

Vaccine Dose Considerations for Children Aged 6 Months Through 8 Years

2 Doses should be administered at least a month apart.

* For children, this algorithm bases the determination of 2 doses of seasonal influenza vaccine on a child's vaccination history from August 1, 2011, to November 1, 2011, or, as a child age 6 months, 2 doses of seasonal influenza vaccine during one previous influenza year or 2 doses of a 2009 seasonal vaccine or the recombinant (2009H1N1) vaccine. Note that the child must only be vaccinated at least once in a year at a total of 2 doses. This does not include any of the 2009, 2010, 2011 or 2012 doses of seasonal influenza vaccine (table 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 850, 851, 852, 853, 854, 855, 856, 857, 858, 859, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869, 870, 871, 872, 873, 874, 875, 876, 877, 878, 879, 880, 881, 882, 883, 884, 885, 886, 887, 888, 889, 890, 891, 892, 893, 894, 895, 896, 897, 898, 899, 900, 901, 902, 903, 904, 905, 906, 907, 908, 909, 910, 911, 912, 913, 914, 915, 916, 917, 918, 919, 920, 921, 922, 923, 924, 925, 926, 927, 928, 929, 930, 931, 932, 933, 934, 935, 936, 937, 938, 939, 940, 941, 942, 943, 944, 945, 946, 947, 948, 949, 950, 951, 952, 953, 954, 955, 956, 957, 958, 959, 960, 961, 962, 963, 964, 965, 966, 967, 968, 969, 970, 971, 972, 973, 974, 975, 976, 977, 978, 979, 980, 981, 982, 983, 984, 985, 986, 987, 988, 989, 990, 991, 992, 993, 994, 995, 996, 997, 998, 999, 1000).

(LAIV, FluMist) Live, attenuated influenza vaccine can be given *intranasally* to healthy, non-pregnant adults younger than age 50 years without high-risk medical conditions

(TIV) Trivalent inactivated vaccine can be given *intramuscularly* for persons 6 months of age and older, including:

- ✓ elderly people ≥ 50 years of age
- ✓ pregnant women
- ✓ those with medical conditions such as asthma or reactive airway disease, chronic disorder of the pulmonary or CV system, metabolic diseases like diabetes, renal diseases, immune deficiency or being on immunosuppressive therapy.

Herd immunity (or **community immunity**) describes a form of [immunity](#) that occurs when the [vaccination](#) of a significant portion of a [population](#) (or herd) provides a measure of protection for individuals who have not developed immunity.^[1] Herd immunity theory proposes that, in [contagious diseases](#) that are transmitted from individual to individual, chains of [infection](#) are likely to be disrupted when large numbers of a population are immune or less susceptible to the disease. The greater the proportion of individuals who are resistant, the smaller the probability that a susceptible individual will come into contact with an infectious individual.^[2] Vaccination acts as a sort of [firebreak](#) or [firewall](#) in the spread of the [disease](#), slowing or preventing further transmission of the disease to others.^[3] Unvaccinated individuals are indirectly protected by vaccinated individuals, as the latter will not contract and transmit the disease between infected and susceptible individuals.^[4] Hence, a public health policy of herd immunity may be used to reduce spread of an illness and provide a level of protection to a vulnerable, unvaccinated subgroup. Since only a small fraction of the population (or herd) can be left unvaccinated for this method to be effective, it is considered best left for those who cannot safely receive vaccines because of a medical condition such as an [immune disorder](#), [organ transplant](#) recipients, or people with [Egg Allergies](#).

The vaccination coverage required to establish herd immunity against influenza viruses. Plans-Rubió P. Prev Med 2012 July; 55:72-7. E Pub 2012 Mar 4. Source Public Health Agency, Health Department of Catalonia, Roc Boronat 83-85, Barcelona 08005, Spain. pedro.plans@gencat.cat

OBJECTIVE: 1) To determine the influenza vaccination coverage required to establish herd immunity, and 2) to assess whether the percentages of vaccination coverage proposed and those registered in the United States and Europe are sufficient to establish herd immunity.

METHODS: The vaccination coverage required to establish herd immunity was determined by taking into account the number of secondary cases per infected case and the vaccine effectiveness.

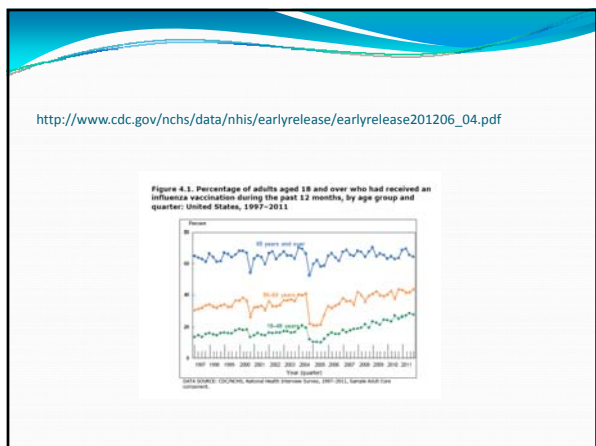
RESULTS: The required percentage that would have been required to establish herd immunity against previous influenza viruses ranged from 13% to 100% for the 1918-19, 1957-58, 1968-69 and 2009-10 pandemic viruses, and from 30% to 40% for the 2008-09 epidemic virus. The objectives of vaccination coverage proposed in the United States - 80% in healthy persons and 90% in high-risk persons - are sufficient to establish herd immunity, while those proposed in Europe - only 75% in elderly and high-risk persons - are not sufficient. The percentages of vaccination coverage registered in the United States and Europe are not sufficient to establish herd immunity.

CONCLUSION: The influenza vaccination coverage must be increased in the United States and Europe in order to establish herd immunity. It is necessary to develop new influenza prevention messages based on herd immunity.

Safety and immunogenicity of influenza vaccination in individuals infected with HIV. Zanetti AR, Amendola A, Besana S, Boschini A, Tanzi E. Vaccine 2002 Dec 20; 20 Suppl 5:B29-32.

Abstract

- Influenza can cause severe complications in HIV infected individuals leading to increases in hospitalisation and mortality. Vaccination is recommended for such individuals, but some studies reported that immunisation against influenza may stimulate an increase of HIV viral load and decrease of CD4+ cells count. A review of published studies, including our study carried out in HIV former drug addicts, indicates that vaccination against influenza is well tolerated in both children and adult individuals with HIV, but response to vaccination is lower than that observed in immunocompetent individuals. Most studies, including our own, show that vaccination does not induce significant changes in viral load and CD4+ cell counts. In studies reporting modifications of such parameters there is a general agreement that the increased viral replication is usually transient and unable to determine a clear, measurable progression of the underlying HIV disease. Therefore, vaccination against influenza can be safely administered to HIV infected people.



http://www.cdc.gov/nchs/data/nhis/earlyrelease/earlyrelease201206_04.pdf

Table 3.3: Percentage of respondents who had received an influenza vaccination in the past 12 months, by age group and race/ethnicity, 2010

Age Group	Race/Ethnicity	Percentage	95% CI
18-24 years	All	37.2	34.2-40.1
25-34 years	All	45.1	41.9-48.3
35-44 years	All	49.7	46.5-52.9
45-54 years	All	57.4	54.2-60.6
55-64 years	All	63.1	59.9-66.3
65+ years	All	71.9	68.7-75.1
18-24 years	White	38.1	35.1-41.1
25-34 years	White	45.8	42.6-49.0
35-44 years	White	50.4	47.2-53.6
45-54 years	White	58.1	54.9-61.3
55-64 years	White	63.8	60.6-67.0
65+ years	White	72.6	69.4-75.8
18-24 years	Black	22.5	19.5-25.5
25-34 years	Black	30.2	27.2-33.2
35-44 years	Black	34.8	31.8-37.8
45-54 years	Black	42.5	39.5-45.5
55-64 years	Black	48.2	45.2-51.2
65+ years	Black	57.0	54.0-60.0
18-24 years	Hispanic	28.9	25.9-31.9
25-34 years	Hispanic	36.6	33.6-39.6
35-44 years	Hispanic	41.2	38.2-44.2
45-54 years	Hispanic	48.9	45.9-51.9
55-64 years	Hispanic	54.6	51.6-57.6
65+ years	Hispanic	63.4	60.4-66.4
18-24 years	Asian	38.1	35.1-41.1
25-34 years	Asian	45.8	42.8-48.8
35-44 years	Asian	50.4	47.4-53.4
45-54 years	Asian	58.1	55.1-61.1
55-64 years	Asian	63.8	60.8-66.8
65+ years	Asian	72.6	69.6-75.6

NOTE: Data are based on household interviews of a sample of the civilian noninstitutionalized population.
SOURCE: Behavioral Risk Factor Surveillance System, 2010. Unpublished Behavioral Risk Factor Surveillance System data.

Physicians say they are discussing vaccines with patients, but adults say the opposite.

<http://www.adultvaccination.com/newsroom/Events/2010-cdc-vaccination-rates-news-conference/2010-Survey-Backgrounder.pdf>

- Most physicians say they discuss vaccines with all patients (87 percent)
- Far fewer patients report these conversations taking place. Almost half (47 percent) can't recall discussing vaccines other than influenza with their physician or health care provider (HCP). One in five (21 percent) can't recall discussing any vaccines at all.
- Almost all doctors (99 percent) say they or members of their staff initiate vaccine discussions. However, 45 percent of patients say that when vaccine discussions occur, it's at routine healthy visits when *they* (not their HCP) bring it up. *Only 37 percent say their physician or HCP initiates the discussion.*
- Women more frequently report having discussions about vaccines other than influenza (57 percent) vs. men (40 percent), and discussions increase with age (age 65+: 53 percent vs. age 18-34: 43 percent).

Nearly nine in ten (88 percent) consumers say a strong recommendation from their physician would motivate them in their vaccine decisions.

<http://www.adultvaccination.com/newsroom/Events/2010-cdc-vaccination-rates-news-conference/2010-Survey-Backgrounder.pdf>

- Other top motivators are: more knowledge about vaccine effectiveness (83 percent), information about the connection between vaccine-preventable diseases and cancer (79 percent), more information about the severity of vaccine-preventable diseases (76 percent).
- The two top reasons why adults are most likely to get a vaccine are to prevent spreading illness to family members or others and because a doctor or other HCP recommended it.

Physicians identify cost challenges, both for patients and themselves, as major obstacles to higher vaccination rates.
<http://www.adultvaccination.com/newsroom/Events/2010-cdc-vaccination-rates-news-conference/2010-Survey-Backgrounder.pdf>

- Topping physicians' list of perceived obstacles is patient unwillingness to pay out-of-pocket costs
- (82 percent), complexities of coverage for shingles vaccine (77 percent), and the financial challenge vaccines pose to their practices (58 percent).
- Physicians say they are also challenged by lack of time to discuss vaccines (57 percent), determining which patients need vaccines (41 percent), and the challenge of vaccine recordkeeping (40 percent).

Patients don't often refuse vaccines, and when they do, lack of concern about the disease is usually the reason.
<http://www.adultvaccination.com/newsroom/Events/2010-cdc-vaccination-rates-news-conference/2010-Survey-Backgrounder.pdf>

- 47 % of physicians say most patients are receptive to any vaccine suggested while 52 % say some accept vaccine recommendation and others are reluctant. Only 1 % of physicians say that most patients are not receptive to their recommendations.
- Only 1 in 4 adults (27 %) reports ever refusing a vaccine offered to them by their HCP, with the highest rate of refusal for influenza (20 %), followed by pneumococcal (7 %); HPV (7 %); shingles (6 %); hepatitis B (6 %) and pertussis (4 %).
- Physicians say that when patients refuse a vaccine, it's likely because they are not convinced they need it (33 %) or have concerns over vaccine safety (29 %). While physicians listed cost to patients as a top obstacle to vaccination (above), when asked for reasons they believe patients actually declined a vaccine, only 10 % say it is because of health insurance coverage or cost issues.

Patients don't often refuse vaccines, and when they do, lack of concern about the disease is usually the reason.
<http://www.adultvaccination.com/newsroom/Events/2010-cdc-vaccination-rates-news-conference/2010-Survey-Backgrounder.pdf>

- Patients generally echo physician beliefs about vaccine refusal, with lack of concern about getting the disease high on the list of reasons for turning down vaccination among the following diseases: Influenza (30 percent); pneumococcal (42 %) HPV (42 %); shingles (37 %), (whooping cough 23 %)
- Other reasons for turning down vaccines – shingles and pertussis in particular – include the belief they already had the diseases or believe they are immune (19 percent for shingles); and they received the vaccine as a child (24 percent for pertussis).

Predictors of influenza vaccination in HIV-infected patients in the United States, 1990-2002.
 Gallagher KM, Juhasz M, Harris NS, Teshale EH; Adult and Adolescent Spectrum of HIV Disease Group. *J Infect Dis.* 2007 Aug 1;196(3):339-46. Epub 2007 Jun 19.

- BACKGROUND:** Although annual influenza vaccination of human immunodeficiency virus (HIV)-infected patients has been recommended in the United States since the early 1990s, vaccine coverage in this population is reported to be low. The objectives of the present study were to assess trends in influenza vaccination coverage in HIV-infected patients and to determine predictors of influenza vaccination.
- METHODS:** We analyzed data from the medical records of 51,021 HIV-infected patients from 10 US cities observed in a longitudinal cohort study between 1990 and 2002. Using multivariate logistic regression, we determined predictors of influenza vaccination for both the pre-highly active antiretroviral therapy (HAART) and HAART eras.
- RESULTS:** Vaccination coverage increased from 28.5% in the 1990 to 41.6% in the 2002 influenza season. Vaccine coverage increased with increasing age and frequency of medical visits. In the HAART era, persons prescribed antiretroviral therapy were more likely and those with higher viral loads and lower CD4 T cell counts were less likely to have received influenza vaccine.
- CONCLUSIONS:** Although influenza vaccination coverage in this population has increased in recent years, it is well below the Healthy People 2010 target of 60%. Efforts should be undertaken to increase influenza vaccination in HIV-infected persons.

<http://www.cdc.gov/flu/protect/keyfacts.htm>

Who Should Get Vaccinated This Season?

- Everyone who is at least 6 months of age should get a flu vaccine this season. A detailed list is available at [Who Should Get Vaccinated Against Influenza](#).

Who Should Not Be Vaccinated?

- People who have a severe allergy to chicken eggs.
- People who have had a severe reaction to an influenza vaccination.
- Children younger than 6 months of age (influenza vaccine is not approved for this age group), and
- People who have a moderate-to-severe illness with a fever (they should wait until they recover to get vaccinated.)
- People with a history of **Guillain-Barré Syndrome** (a severe paralytic illness, also called GBS) that occurred after receiving influenza vaccine and who are not at risk for severe illness from influenza should generally not receive vaccine.

Am J Infect Control. 2007 Feb;35(1):20-4.
Nurses' attitudes and beliefs about influenza and the influenza vaccine: a summary of focus groups in Alabama and Michigan.
 Walls BC, Wortley P.

Source
 Centers for Disease Control and Prevention, Health Services Research and Evaluation Branch, Immunization Services Division, National Center for Immunization and Respiratory Diseases, Atlanta, Georgia 30333, USA. www.cdc.gov

Abstract

BACKGROUND: The U.S. Advisory Committee on Immunization Practices (ACIP) recommends influenza immunization among United States health care workers (HCWs) to reduce the spread of influenza to and from workers and patients. Despite these recommendations, influenza immunization coverage of health care workers is less than 50%.

PARTICIPANTS AND METHODS: Eight focus groups of registered nurses (RNs) were conducted in Birmingham, Alabama (n = 34) and Detroit, Michigan (n = 37). In each city, the focus groups consisted of 2 groups each of vaccinated and unvaccinated RNs.

RESULTS: These focus groups revealed that many nurses were concerned about influenza vaccine effectiveness and safety; their lack of information about the vaccine plays a part in their willingness to promote it to patients. Unvaccinated nurses tended to be less aware of the ACIP recommendations for HCW vaccination, and overall, nurses were not aware of the rationale for HCW vaccination. Attitudes were mixed regarding mandatory influenza vaccination programs, including the hope that such programs would result in higher vaccination rates and concern about potential disciplinary action if vaccine was declined. Participants believed that increasing convenience was the key to increasing HCW vaccination.

CONCLUSIONS: Our findings confirm the importance of comprehensive approaches that combine education and convenience, and suggest that emphasizing the rationale for HCW vaccination may contribute to increasing vaccination rates.

[Am J Infect Control](#). 2007 Feb;36(1):20-4.
Nurses' attitudes and beliefs about influenza and the influenza vaccine: a summary of focus groups in Alabama and Michigan.
[Wynn BC, Wootley P.](#)

Source:
Centers for Disease Control and Prevention, Health Services Research and Evaluation Branch, Immunization Services Division, National Center for Immunization and Respiratory Diseases, Atlanta, Georgia 30333, USA. bwn6@cdc.gov

Abstract


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The U.S. Advisory Committee on Immunization Practices (ACIP) recommends influenza immunization among United States health care workers (HCWs) to reduce the spread of influenza to and from workers and patients. Despite these recommendations, influenza immunization coverage of health care workers is less than 50%.

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CONCLUSIONS:
Our findings confirm the importance of comprehensive approaches that combine education and convenience, and suggest that emphasizing the rationale for HCW vaccination may contribute to increasing vaccination rates.

<https://flunearyou.org/>



The screenshot shows a web browser window with the URL <https://flunearyou.org/>. The main content area features a line graph titled 'Influenza Activity' with a y-axis labeled 'Influenza Activity' ranging from 0.0 to 1.0. The x-axis is labeled 'Weeks To Date' and shows data points for various weeks. A blue line represents the activity level, which peaks around week 40 and then declines. To the right of the graph is a sidebar titled 'Get Vaccinated!' containing a list of pharmacies and clinics with their addresses and phone numbers.

What worked?

Medical Provider Knowledge of Best Practices on Immunizations

Needle Tips is a publication of the Immunization Action Coalition written for health professionals who provide immunization services to children, teens, or adults.

Every issue includes the [Ask the Experts](#) feature by CDC experts who answer challenging and timely questions about vaccines and their administration; the Vaccine Highlights section which contains vaccine news from ACIP and CDC; and ready-to-print materials from IAC to photocopy and hand out to staff and patients.

The technical content of *Needle Tips* is reviewed for accuracy by CDC.
[Subscribe to Needle Tips - it's free!](#)

Herd immunity: Seasonal influenza vaccination reduces the likelihood of becoming ill with influenza or transmitting influenza to others.
<http://www.cdc.gov/ncidod/diseases/influenza/immunity.htm> & <http://www.usaid.gov/press/presspage/communitymunity.aspx>

- In contagious diseases that are transmitted from individual to individual, chains of infection are likely to be disrupted when large numbers of a population (**herd**) are immune or made less susceptible to the disease.
- The greater the proportion of individuals who are **immune (resistant to influenza)**, the smaller the probability that a susceptible individual will come into contact with an infectious individual
- Vaccinated individuals provide a **"firewall"** around unvaccinated individuals to limit the spread of influenza by slowing or preventing further transmission of influenza to other people.

Prevention
Influenza and Pneumococcal Vaccination

Between 2000 and 2010, influenza vaccination increased among adults under 65 years of age and pneumococcal vaccination increased among those 65 years of age and over.

Vaccination of persons at risk for complications from influenza and invasive pneumococcal disease is an important public health strategy (11). Between 2000 and 2010, influenza vaccination in the past 12 months for noninstitutionalized adults increased among those 18–49 and 50–64 years of age but was stable among those 65 years of age and over. Decreases in influenza vaccination coverage in 2005 were related to a vaccine shortage (12). Between 2000 and 2010, the percentage of noninstitutionalized adults who had ever received pneumococcal vaccination increased among those 65–74 and 75 years of age and over.

Figure 12. Influenza and pneumococcal vaccination among adults, by type of vaccination and age: United States, 2000–2010

Excel and PowerPoint: <http://www.cdc.gov/ncidod/diseases/influenza/communitymunity.htm>

Health, United States, 2011 | Chartbook 13
