



# City Health Information

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The New York City Department of Health and Mental Hygiene

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## PREVENTION AND CONTROL OF INFLUENZA

### KEY MESSAGES FOR THE 2007–2008 FLU SEASON

- As soon as influenza vaccine becomes available—immunize! Continue vaccinating through June.
- Immunize patients when they come in for any office visit.
- All health care workers should receive an annual flu vaccine.
- Children <9 years of age who received only one dose of flu vaccine in their first flu season should get 2 doses of flu vaccine in their second year of vaccination.

Influenza can be a serious illness for people of any age. Every year, more than 200,000 people across the United States (US) are hospitalized from complications of the flu such as pneumonia, and at least 36,000 people die as a result of the flu.<sup>1</sup> In New York City (NYC), influenza and pneumonia combined were the third leading cause of death among people of all ages in 2005 and accounted for more than 1,000 deaths in those 65 years and older.<sup>2</sup> Although less common, infants, children, teens, and young adults also die as a result of influenza.

Vaccination is the primary method for preventing influenza and its complications. Health care providers can reduce illness and death from influenza and pneumonia by getting immunized themselves, by providing flu vaccine to their patients, and by giving pneumococcal vaccine to those at risk, especially those 65 years and older.

#### Table 1. Who Should Receive an Annual Flu Vaccination?<sup>1</sup>

- Anyone (including school-aged children) who wants influenza vaccine to reduce their risk of getting sick with the flu or giving it to others.
- All children aged 6 months until their fifth birthday.
- All pregnant women (at any stage of pregnancy).
- All people aged 50 years and older.
- All people aged 5 to 49 years with certain chronic medical conditions (Table 2).
- All residents in nursing homes, chronic care facilities, and other long-term care facilities and who are at least 6 months of age.
- All out-of-home caregivers and household contacts of high-risk individuals, including contacts of children under 5 years of age.
- All health care workers.



## THE IMPACT OF INFLUENZA INFECTION

Anyone can get the flu. In the US, approximately 10% to 20% of all adults and up to 40% of all children are infected with influenza annually. Rates of serious illness and death due to influenza are highest among people 65 years and older, young children, and people of any age with certain underlying medical conditions (Table 2).<sup>3-7</sup> Influenza-related deaths result from complications of the flu such as pneumonia, and from exacerbations of underlying medical conditions, particularly cardiac and pulmonary problems. Death rates from the flu are likely underestimated, since influenza infections may not be recognized and/or documented.<sup>8</sup>

Influenza infection rates in children are among the highest of any age group. Young children, from birth until their fifth birthday, have hospitalization rates comparable to those of people 65 years and older.<sup>4-6</sup> Children are major spreaders of the infection, especially within households, and among other close contacts. Routinely giving children flu vaccine has been shown to reduce rates of influenza infection and associated complications among both children and adults.<sup>9-12</sup>

Although deaths are more common among children with risk factors for influenza complications, the majority of pediatric deaths occur among children of all age groups with no known high-risk conditions.<sup>1</sup>

## FLU VACCINE COVERAGE IN NYC

Among NYC adults 65 years and older, the reported use of flu vaccine lags substantially below the national goal of 90%.<sup>13</sup> In annual telephone surveys of NYC residents, only 59% of adults 65 years and older reported having received a flu shot in

the 2005-2006 flu season, down from 63% in 2002-2003 and 64% in 2003-2004.<sup>14</sup> Vaccine went unused last year.

Influenza vaccination rates vary widely across NYC, with marked community and racial disparities. In the 2005-2006 flu season, only 47% of black New Yorkers 65 years and older reported being vaccinated, compared with 64% of whites.

People with high-risk conditions are also not being immunized. In 2005-2006, only 49% of all NYC adults with diabetes and 41% of adults with asthma reported having received vaccine. Nationally, in the 2004-2005 flu season, only 29% of children with chronic asthma received flu vaccine.<sup>15</sup>

## ROLE OF THE HEALTH CARE PROFESSIONAL IN PREVENTING INFLUENZA

Patients are more likely to get an annual flu shot if their doctor recommends it.<sup>16</sup> Recommending flu vaccine is as important as recommending any other life-saving measure.

Every health care worker, paid and unpaid staff, volunteers, and home care attendants in all health care settings (hospitals, outpatient facilities, emergency departments, emergency medical services, clinics, offices, long-term care facilities, and assisted living settings) should receive flu vaccine every year. Vaccination of health care workers not only protects workers, it protects their colleagues, patients, families, and other close contacts. Health care providers and staff should receive flu vaccine early in the season to prevent the spread of illness to high-risk patients. Vaccinating health care workers reduces mortality in nursing homes around 40%,<sup>17</sup> and reduces staff illness and absenteeism by about 50%. However, less than half of all health care workers are vaccinated nationally<sup>1</sup> and only 33% were vaccinated in NYC in 2005.<sup>18</sup>

Be a role model: ensure that you and your family members get the flu vaccine and tell your colleagues and patients that you have done so. Emphasize that getting a flu vaccine is a priority for you as a health care provider, your colleagues, and your staff.

The Healthcare Infection Control Practices Advisory Committee (HICPAC) and the Advisory Committee on Immunization Practices (ACIP) of the Centers for Disease Control and Prevention (CDC) stress the importance of flu vaccination for all health care workers (Table 3).<sup>19,1</sup> Both recommend that health care facilities:

- Offer vaccine to their employees conveniently on site as a benefit of employee health programs.
- Obtain signed "Refusal to Receive Vaccination" forms (available at [www.nyc.gov/html/doh/downloads/pdf/imm/immiv-refusal.pdf](http://www.nyc.gov/html/doh/downloads/pdf/imm/immiv-refusal.pdf)) from those who decline immunization.
- Use health care worker influenza vaccination coverage as a key measure of patient safety and quality programs.

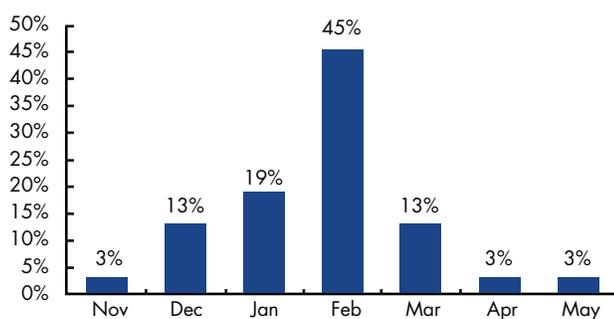
**Table 2. Chronic Medical Conditions That Are Indications for Annual Flu Vaccination**

- Cardiovascular disease.
- Pulmonary disorders, including emphysema and asthma.
- Chronic metabolic diseases, including all types of diabetes.
- Renal disease (renal failure or renal dysfunction).
- Hemoglobinopathies (e.g., sickle cell disease, thalassemia).
- Immune dysfunction, including immunodeficiency caused by HIV infection or immunosuppressive therapy (e.g., radiation therapy, chemotherapy, high-dose steroids, or immunomodulating medications).
- Any condition that can compromise respiratory function, the handling of respiratory secretions, or that increases the risk for aspiration (e.g., cognitive dysfunction, spinal cord injuries, seizure disorders, or other neuromuscular disorders).
- Medical conditions treated with long-term aspirin therapy in children 6 months through 18 years, because of the potential risk of influenza-associated Reye syndrome.

**Table 3. Facilitating Influenza Immunization in Health Care Settings<sup>1</sup>**

- Educate health care professionals about the benefits of influenza vaccination and the potential health consequences of influenza illness for themselves and their patients. Explain the epidemiology of influenza as well as modes of transmission, diagnosis, treatment, and non-vaccine infection control strategies.
- Offer influenza vaccine annually to all eligible health care professionals to protect staff, patients, and family members, and to decrease absenteeism.
- Provide influenza vaccination to health care professionals at no cost at work sites and during all work shifts as part of employee health programs. Use strategies that increase flu vaccination acceptance, including vaccination clinics, mobile carts, and support programs by institutional leaders.
- Obtain signed refusal-to-vaccinate forms (available at [www.nyc.gov/html/doh/downloads/pdf/imm/immiv-refusal.pdf](http://www.nyc.gov/html/doh/downloads/pdf/imm/immiv-refusal.pdf)) from health care employees who decline influenza vaccination.
- Monitor health care workforce influenza vaccination coverage and refusals at regular intervals during the influenza season, and provide feedback of ward-, unit-, and specialty-specific rates to staff and administration.
- Use the number of health care employees vaccinated as one measure of a patient safety quality program.

**Month of Peak Influenza Activity,\*  
United States, 1976–2006**



\* Numbers do not add up to 100% due to rounding.

The Joint Commission on Accreditation of Healthcare organizations (JCAHO) now requires that all facilities offer influenza vaccine on site to staff.<sup>20</sup> Summary recommendations for specific actions in the health care setting are listed in Table 3 and at [www.nfid.org/pdf/publications/hcwmonograph.pdf](http://www.nfid.org/pdf/publications/hcwmonograph.pdf).

## FLU VACCINE: AVAILABILITY AND TIMING

Influenza vaccine usually first appears on the market in September, with supply most plentiful later in the calendar year, often in November and December, prior to the onset of peak flu activity. Vaccine distribution for the 2007-2008 season has begun. Four manufacturers are expected to provide up to a record 127-132 million doses of influenza vaccine to the US market during the 2007-2008 influenza season (Table 4). The final number of doses is not yet known.

### Flu vaccination season is not flu transmission season.

Influenza disease usually peaks some time in February and cases are reported into the late spring. Over 60% of all influenza disease occurs in February or later. In NYC, flu has been identified even in May. For this reason, it is important to continue to vaccinate though late spring.

Vaccine recommendations, regular updates on flu activity, and vaccine availability will be posted at [www.nyc.gov/health/flu](http://www.nyc.gov/health/flu) and on the NYC DOHMH Health Alert Network (HAN) at [www.nyc.gov/health/nycmed](http://www.nyc.gov/health/nycmed).

## CHANGE IN CHILDHOOD INFLUENZA IMMUNIZATION RECOMMENDATIONS

Children younger than 9 years of age who received only a single dose of influenza vaccine in their initial season of vaccination may not be adequately protected in the subsequent flu season.<sup>1</sup> This may be particularly true if there has been a change in the component strains of the vaccine.

Recommendations for 2007-2008 are:

- All children <9 years of age should receive 2 doses of influenza vaccine if they have not been vaccinated previously, at any time, with either the flu shot (trivalent, inactivated influenza vaccine, TIV) or the flu nasal spray (live, attenuated intranasal flu vaccine, LAIV).
- Children <9 years who received only 1 dose of influenza vaccine in their first season of vaccination should receive 2 doses the following year.
- Once a child <9 years has received 2 doses of vaccine, either in the same season (preferable) or different seasons, the child should receive one dose each year from that time on.
- ACIP does not recommend that a child receive influenza vaccine for the first time in the spring with the intent of providing a priming dose for the following season.
- Children who are in their third or later year of being vaccinated and who received only 1 dose of vaccine in each of their first 2 years of being vaccinated should receive a single annual dose of flu vaccine.

## LIVE ATTENUATED INTRANASAL INFLUENZA VACCINE

FluMist<sup>®</sup>, a live, attenuated intranasal influenza vaccine (LAIV), is licensed for use in otherwise healthy people aged 2 to 49 years. This is an alternative to a flu shot for healthy contacts of most high-risk individuals, including caregivers and household contacts of infants and young children, as well as for health care workers. Use of LAIV provides an option for those who decline vaccination because of an aversion to injections.

For children who should be receiving annual flu vaccine, the use of LAIV can eliminate another injection. FluMist is not licensed for use in immunocompromised patients, those with chronic medical conditions, or pregnant women. LAIV may be administered to all healthy, non-pregnant people, including health care workers less than 50 years of age, except those in direct contact with severely immunosuppressed patients (those requiring protective isolation). Contact with all other patients, including those who are immunosuppressed outside of this specialized setting, is not a contraindication to the health care worker receiving LAIV. The pre-filled LAIV sprayer is now licensed for children as young as 2 years of age, formulated to be refrigerator stable, and the dose has been decreased to 0.1mL in each nostril. For more information, see [www.cdc.gov/flu/about/qa/nasalspray.htm](http://www.cdc.gov/flu/about/qa/nasalspray.htm).

### Efficacy of LAIV in Children

Recent data suggests that live attenuated intranasal influenza vaccine has increased efficacy as compared with inactivated influenza vaccine (TIV) in young children.<sup>21</sup> In placebo-controlled studies in children, LAIV was 73% to 93% efficacious, and protection lasted more than 12 months. In children, LAIV reduced influenza attack rates by 35% to 53% compared to TIV for matched strains. Compared with TIV, LAIV has demonstrated broader serum antibody responses, particularly against mismatched influenza A.<sup>22</sup>

## CONTRAINDICATIONS AND PRECAUTIONS TO VACCINE

Influenza vaccines, both TIV and LAIV, should not be administered to any person who has had an anaphylactic reaction to eggs or to other components of the specific vaccine. However, allergic reactions are very rare. Soreness or local irritation at the injection site are reported by 15% to 20% of flu vaccine recipients. Fever and malaise are uncommon and are usually seen in individuals with no prior exposure to the influenza virus antigens in the vaccine, especially young children.

## ANTIVIRAL AGENTS

There are currently 4 licensed agents effective against influenza—amantadine, rimantadine, zanamivir, and oseltamivir. All 4 agents are pregnancy Category C (pregnancy

and fetal risks are presently unknown; medications should be used only if potential benefits outweigh possible risks). These agents are not substitutes for vaccination; widespread use is discouraged to avoid the development of drug-resistant viral strains and adverse effects. Treatment with antiviral drugs for influenza is an adjunct to influenza vaccine for the prevention and control of influenza. Amantadine and rimantadine should not be used for the treatment or chemoprophylaxis of influenza A in the US. Recent data indicates there is widespread resistance of these viruses to these medications.

Severe adverse events manifested by unusual neuropsychiatric symptoms have been reported among children and adolescents being treated for influenza with oseltamivir.<sup>23</sup>

Treatment with one class of antiviral agents, the neuraminidase inhibitors (oseltamivir and zanamivir), has been shown to decrease severe complications resulting from flu such as pneumonia and bronchitis, and to reduce hospitalizations if used early in the course of disease. Antiviral agents remain an important tool to control influenza outbreaks in institutions.

For detailed information on the use of antiviral agents in influenza treatment and prophylaxis, adverse effects, contraindications, and dosage (including adjustments for people 65 years and older, those with impaired renal function and/or liver disease, or people with seizure disorders), visit [www.cdc.gov/flu/professionals/treatment](http://www.cdc.gov/flu/professionals/treatment).

## ORDERING INFLUENZA VACCINE

For up-to-date information about the purchase of influenza vaccine, go to [www.nyc.gov/health/flu](http://www.nyc.gov/health/flu) or call the Provider Access Line: 1-866-692-3641/1-866-NYC-DOH1.

For all eligible children and adolescents, vaccine must be ordered through the Vaccines for Children (VFC) program. Call the VFC program at 212-447-8175 for additional information.

## REPORTING AND SURVEILLANCE

The NYC Department of Health and Mental Hygiene (NYC DOHMH), along with many partners, actively monitors influenza activity. Throughout the flu season, regular updates on levels of flu activity and vaccine availability are provided to health care providers, hospitals, and nursing homes on the NYC DOHMH Health Alert Network (HAN) and on the flu Web site, [www.nyc.gov/health/flu](http://www.nyc.gov/health/flu). Hospitals and nursing homes must report all laboratory-confirmed nosocomial cases of influenza (not just outbreaks), as well as any increased incidence of influenza-like illness (temperature 100°F with cough or sore throat, in the absence of another known etiology) by completing the Nosocomial Report Form DOH 4018 and faxing it to the New York State Department of Health, Bureau of Communicable Disease

# QUICK GUIDE TO IMPROVING INFLUENZA VACCINATION COVERAGE

## FOUR EASY STEPS TO IMPROVE INFLUENZA VACCINATION COVERAGE

Despite the well-documented importance of vaccination, many offices do not have systems in place to identify and vaccinate all patients who should receive an annual flu vaccine. Approximately 80% of all influenza vaccine is received in medical offices.<sup>24</sup> Follow the steps outlined below:

### 1. Prepare

- Order enough vaccine and order it for delivery early in the season. If you need additional vaccine, go to [www.nyc.gov/health/flu](http://www.nyc.gov/health/flu) or call the provider access line at: 1-866-692-3641/1-866-NYC-DOH1.
- Ensure that your staff members know how to properly handle and store vaccine. For more information, visit [www.immunize.org/catg.d/p3035chk.pdf](http://www.immunize.org/catg.d/p3035chk.pdf).
- Place labels or stickers on patients' charts or, if the technology is available, embed a reminder in the electronic files of high-risk patients to identify them as needing flu vaccination.
- Use reminder/recall systems such as mailed postcards or computerized record reminder systems.<sup>25</sup>
- Use standing orders in all large practices, ambulatory care centers, inpatient facilities, emergency departments, and long-term care facilities. (For a sample template, visit [www.nyc.gov/html/doh/downloads/pdf/imm/influenza-so2003.pdf](http://www.nyc.gov/html/doh/downloads/pdf/imm/influenza-so2003.pdf).)
- Expand access to influenza vaccine by offering additional services, such as walk-in clinics, express-lane vaccination services or weekend and evening clinics.

### 2. Promote

- Be a role model. Get vaccinated yourself and insist that your staff and patients: "Get your flu shot, today."
- Recommend vaccination to your patients—doing so increases vaccination coverage.<sup>26</sup>
- Flu vaccine is life saving—offer vaccination as you would other critical treatment or intervention.

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All immunizations (including flu vaccine) administered to children and adolescents under 19 years of age must be reported to the Citywide Immunization Registry (CIR). Immunizations administered to those 19 years and older may be reported with consent documented in the medical record.<sup>27</sup> For information, call the CIR at 212-676-2323.

### 3. Provide

- Give your patients health education materials about the importance of the influenza vaccine and provide materials in your waiting room. Discuss the information with patients. For a list of materials, go to [www.nyc.gov/html/doh/html/imm/flu-ptk5.shtml](http://www.nyc.gov/html/doh/html/imm/flu-ptk5.shtml). These are available in bulk quantities by calling 311.
- Provide a Vaccine Information Statement (VIS) for patients to read before they are vaccinated. The VIS form is available in 23 different languages as well as in an audio/multimedia format at [www.immunize.org/VIS](http://www.immunize.org/VIS).
- Use "The Vaccine Administration Record for Adults" or a preventive services flow sheet for specific tracking of vaccines administered to a given patient (form available at: [www.nyc.gov/html/doh/downloads/pdf/imm/imm-var.pdf](http://www.nyc.gov/html/doh/downloads/pdf/imm/imm-var.pdf)).
- If your patients or your staff refuse flu vaccine, have them sign a "Refusal to Receive Vaccination" form to let them know you are serious about the importance of influenza vaccine (template available at: [www.nyc.gov/html/doh/downloads/pdf/imm/immiv-refusal.pdf](http://www.nyc.gov/html/doh/downloads/pdf/imm/immiv-refusal.pdf)).
- Give your patients a copy of their immunization record. Use the Take Care New York (TCNY) Passport, available through the Provider Access Line: 1-866-692-3641/1-866-NYC-DOH1.

### 4. Progress

- Monitor how well your practice is doing. Simple methods, such as tracking yearly doses of flu vaccine administered, or conducting quick chart reviews, can be helpful.
- Determine what percent of eligible patients identified at the start of the flu season received vaccine. Improve this percentage season to season.

**USE EVERY OFFICE VISIT AS AN OPPORTUNITY TO VACCINATE!**

**Vaccinate patients as soon as flu vaccine becomes available. There is no prioritization in the use of vaccine this flu season. Everyone who is at high risk and anyone who wants a flu vaccine should get vaccinated.**

## BARRIERS TO INFLUENZA VACCINATION AND SUGGESTED SOLUTIONS

### Barrier

Many patients avoid flu shots because they believe that getting vaccinated can give them the flu, or because they are afraid of injections.

### Solution

- Educate patients about the safety and proven effectiveness of flu shots.
- Emphasize that one cannot get the flu from the flu shot.
- Offer FluMist® as an alternative to a shot.

Clinicians are unfamiliar with specific populations recommended to receive an annual flu vaccine.

- To better identify patients in your practice who need an annual vaccine, be sure that you and your staff are familiar with all targeted high-risk populations.
- Use easy pocket guides for reference. See [www.immunize.org/pocketguides](http://www.immunize.org/pocketguides)
- Place vaccination recommendations in prominent locations in your examination and waiting rooms.

There are time constraints during office visits.

- Be sure vaccination information is readily available in your reception area, waiting room, and examination rooms.
- Streamline your office procedures:
  - You or your nurse should review charts of your scheduled patients in advance to determine who should receive flu and/or pneumococcal vaccine.
  - Have your nurse offer vaccine while the patient has his or her vital signs checked.
- Plan ahead—estimate the number of patients who should be vaccinated and order accordingly.

There is not enough vaccine for all patients in practice.

- Implement a technique to identify high-priority patients and flag their charts when vaccination is indicated.
- For a template of chart stickers, visit [www.nyc.gov/html/doh/downloads/pdf/imm/ptk-1-doublecheck.doc](http://www.nyc.gov/html/doh/downloads/pdf/imm/ptk-1-doublecheck.doc).
- If you need more vaccine, visit [www.nyc.gov/health/flu](http://www.nyc.gov/health/flu).

There is no systematic tracking of high-risk patients.

- Set targets and monitor your progress.

Detach here ✂

**Table 4. Approved Influenza Vaccines by Age Group – United States, 2007-2008 Season\***

Vaccine <sup>†</sup>	Trade name	Manufacturer	Dose/Presentation	Age group	Doses	Route
<b>Inactivated</b>						
TIV	Fluzone®	sanofi pasteur	0.25-mL prefilled syringe	6–35 mos	1 or 2 <sup>†</sup>	Intramuscular
			0.5-mL prefilled syringe	≥ 36 mos	1 or 2 <sup>†</sup>	Intramuscular
			0.5-mL vial	≥ 36 mos	1 or 2 <sup>†</sup>	Intramuscular
			5.0-mL multi-dose vial	≥ 6 mos	1 or 2 <sup>†</sup>	Intramuscular
TIV	Fluvirin™	Novartis	5.0-mL multi-dose vial	≥ 4 yrs	1 or 2 <sup>†</sup>	Intramuscular
TIV	FLUARIX™	GlaxoSmithKline	0.5-mL prefilled syringe	≥ 18 yrs	1	Intramuscular
TIV	FluLuval™	GlaxoSmithKline	5.0-mL multi-dose vial	≥ 18 yrs	1	Intramuscular
<b>Live, attenuated</b>						
LAIV	FluMist®	Medimmune	0.2-mL sprayer	2–49 yrs	1 or 2 <sup>‡</sup>	Intranasal

\* Adapted from 2007 ACIP recommendations<sup>1</sup>

<sup>†</sup> Two doses administered at least 1 month apart are recommended for children aged 6 months to <9 years who are receiving influenza vaccine for the first time. Children <9 years of age who received only one dose of influenza vaccine in their first season of vaccination should receive two doses the following year.

<sup>‡</sup> Two doses administered at least one month apart are recommended for children aged 2 to <9 years who are receiving influenza vaccine for the first time. Children 2 to <9 years of age who received only one dose of influenza vaccine in their first season of vaccination should receive two doses the following year.

Use of brand names is for informational purposes only and does not imply endorsement by the New York City Department of Health and Mental Hygiene.

Control, at 518-474-7381. For a copy of the form, go to: [www.health.state.ny.us/nysdoh/infection/infecreport.pdf](http://www.health.state.ny.us/nysdoh/infection/infecreport.pdf). Questions about nosocomial influenza reporting can be directed to the NYC DOHMH Influenza Surveillance Coordinator at 212-442-9050.

All suspected influenza-related deaths in children younger than 18 years of age should be reported to the NYC DOHMH Bureau of Communicable Disease at 212-788-9830, 9:00 am to 5:00 pm, Monday through Friday. After hours, call the Poison Control Center at 212-764-7667.

**Influenza Surveillance**

Become part of an active surveillance system for influenza-like illness; in less than 30 minutes a week, you can participate as a sentinel physician in an important national public health initiative. The data you provide will help us monitor the impact of influenza in NYC.

Please call Beth Nivin at 212-442-9050 or e-mail [bnivin@health.nyc.gov](mailto:bnivin@health.nyc.gov) for more information.

**INVASIVE PNEUMOCOCCAL DISEASE**

Invasive pneumococcal disease (IPD), a life-threatening infection caused by *Streptococcus pneumoniae*, manifests as meningitis, bacteremia, or pneumonia. National estimates suggest that there were more than 40,000 cases of IPD and 4,400 deaths in 2005.<sup>28</sup> IPD can be a complication of influenza. Older adults are at the greatest risk for developing IPD; case-fatality rate among adults 65 years and older is approximately 20%, increasing to more than 40% among those 80 years and older.<sup>29</sup> This rate also increases with underlying medical conditions, such as diabetes, chronic heart or lung disease, and malignancy or HIV. IPD incidence is significantly higher among blacks than whites.<sup>30</sup>

Pneumococcal polysaccharide vaccine (PPV23) is indicated for specific groups (Table 5). This vaccine protects against antigens identified in 88% of all cases of IPD in adults; it is recommended for all people 65 years and older. PPV23 is also recommended for people aged 2 to 64 years with certain high-risk conditions.<sup>31</sup> Many of the same office-based strategies recommended for promoting influenza vaccination can be used to promote pneumococcal vaccination.

**Table 5. Indications for Pneumococcal Polysaccharide Vaccine (PPV23)** <sup>31, 32</sup>

WHO NEEDS PPV23 VACCINE	WHO NEEDS REVACCINATION WITH PPV23
<b>Immunocompetent Persons</b>	
All persons 65 years and older	Revaccination for healthy persons is not recommended. However, if the first dose of vaccine was received prior to age 65, give a single revaccination at age 65 or older if at least 5 years have elapsed since the previous dose.
Vaccinate persons 2–64 years of age who: <ul style="list-style-type: none"> <li>• Have chronic cardiovascular disease (including congestive heart failure and cardiomyopathy); chronic pulmonary disease (including COPD and emphysema); diabetes; or those who have cochlear implants.</li> <li>• Have chronic liver disease (including cirrhosis), are alcoholic, or have CSF leaks.</li> </ul>	If the person received 1 dose prior to age 65, give a single revaccination at age 65 (or older) if at least 5 years have elapsed since the previous dose.
Vaccinate persons 2–64 years of age with functional or anatomic asplenia (including persons with sickle cell disease or splenectomy patients).	If a vaccinated patient in this risk group is older than 10 years of age, give a single revaccination if at least 5 years have elapsed since the previous dose. If the patient is 10 years of age or younger, consider revaccination 3 years after the previous dose.
<b>Immunocompromised Persons</b>	
Vaccinate immunocompromised patients age 2 years and older, including those with HIV, leukemia, lymphoma, Hodgkin’s disease, multiple myeloma, generalized malignancy, chronic renal failure (including dialysis patients), or nephrotic syndrome; those receiving immunosuppressive therapy (including long-term systemic corticosteroids); and those who have received an organ or bone marrow transplant.	If a vaccinated immunocompromised patient in this risk group is older than 10 years of age, give a single revaccination if at least 5 years have elapsed since the previous dose. If the patient is 10 years of age or younger, consider revaccination 3 years after the previous dose.

If there is no record of prior vaccination available, immunize as is age- and condition-appropriate.

Physicians should vaccinate all eligible patients with PPV23 at any office visit, any time of the year. Everyone should receive one dose of PPV23 at or after 65 years of age.

Generally, a single dose of vaccine at or after age 65 is all that is recommended; a single revaccination is recommended no sooner than 5 years after the first dose for immunocompromised patients and for those 65 years and older who were vaccinated before age 65. Revaccination every 5 years is not recommended. ♦

**The best way to protect against the flu is with an annual influenza vaccine, but everyone can take these simple and effective steps to prevent or limit the spread of flu:**

- Cover your sneeze or cough.
- Stay home if you're sick with fever and cough.

**To reduce the spread of infection in general during flu season and year-round:**

- Wash hands with soap and water or use an alcohol-based hand sanitizer.



## Resources

### NYC Department of Health and Mental Hygiene

- Provider Access Line, 9:00 AM to 5:00 PM:  
1-866-692-3641/1-866-NYC-DOH1
- After business hours: 212-764-7667
- Health Alert Network (HAN):  
[www.nyc.gov/health/nycmed](http://www.nyc.gov/health/nycmed)  
or 1-888-692-6339
- E-mail questions to DOHMH: [nycflu@health.nyc.gov](mailto:nycflu@health.nyc.gov)
- Provider information:  
[www.nyc.gov/html/doh/html/imm/immpinform.html](http://www.nyc.gov/html/doh/html/imm/immpinform.html)

### Other Organizations

- Centers for Disease Control and Prevention:  
1-800-232-2522 or [www.cdc.gov/flu](http://www.cdc.gov/flu)  
(influenza information)
- Immunization Action Coalition:  
[www.immunize.org](http://www.immunize.org) (influenza information)
- National Foundation for Infectious Diseases:  
[www.nfid.org](http://www.nfid.org)

**References Available Online:** [www.nyc.gov/html/doh/downloads/pdf/chi/chi26-8-ref.pdf](http://www.nyc.gov/html/doh/downloads/pdf/chi/chi26-8-ref.pdf)

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# PREVENTION AND CONTROL OF INFLUENZA

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## CME Activity Prevention and Control of Influenza, 2007-2008

- Which of the following individuals or groups should receive the influenza vaccine each flu season?
  - All persons who wish to reduce the likelihood of getting the flu or spreading it to others
  - All persons  $\geq 50$  years of age
  - All persons at least 6 months of age with any chronic medical condition
  - All children aged 6 months until their fifth birthday
  - All health care workers
  - All persons who live with or care for high-risk individuals
    - Only 2 and 4
    - Only 2, 3, and 4
    - All of the above
- Young children are at an increased risk of hospitalization for complications of influenza. Of the following, which are true?
  - Influenza vaccine is recommended for all children  $< 6$  months of age.
  - Influenza vaccine is recommended for all household contacts and out-of-home caregivers of children under 5 years of age.
  - Influenza vaccine is recommended for all children aged 6 months until their fifth birthday.
  - A and B
  - B and C
- Which of the following is a valid contraindication for a flu shot?
  - Upper respiratory infection
  - Concurrent administration of pneumococcal vaccine
  - Anaphylactic reaction to eggs
  - Pregnancy

- Insulin treatment for diabetes
- All of the above

### 4. Which of the following is not an indication for pneumococcal polysaccharide vaccine?

- HIV infection
- Chronic liver disease (cirrhosis)
- Diabetes mellitus
- Cerebrospinal fluid leak
- All of the above are valid indications

### 5. The live, attenuated intranasal influenza vaccine:

- Can be used instead of the flu shot for all individuals  $\geq 65$  years
- Is easy to administer to infants and toddlers
- Is licensed for use only in healthy individuals 2-49 years of age
- Is not indicated for health care workers

### 6. How well did this continuing education activity achieve its educational objectives?

- A. Very well     B. Adequately     C. Poorly

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### Instructions

Read this issue of *City Health Information* for the correct answers to questions. To receive continuing education credit, you must answer 4 of the first 5 questions correctly.

### To Submit by Mail

- Complete all information on the response card, including your name, degree, mailing address, telephone number, and e-mail address. PLEASE PRINT LEGIBLY.
- Select your answers to the questions and check the corresponding boxes on the response card.
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## Continuing Education Activity

Prevention and Control of Influenza: Key Messages  
for the 2007-2008 Season

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### Objectives

At the conclusion of the activity, the participants should be able to:

1. Describe indications for the use of flu vaccine.
2. List valid contraindications to the use of flu vaccine.
3. List targeted populations for pneumococcal polysaccharide vaccine (PPV23).

### Accreditation

The New York City Department of Health and Mental Hygiene (NYC DOHMH) is accredited by the Medical Society of the State of New York to sponsor continuing medical education for physicians. The NYC DOHMH designates this continuing medical education activity for a maximum of 1.00 AMA PRA Category 1 credit(s).™ Each physician should only claim credit commensurate with the extent of his/her participation in the activity.

Participants are required to submit name, address, and professional degree. This information will be maintained in the Department's CME program data-

base. If you request, the CME Program will verify your participation and whether you passed the exam.

We will not share information with other organizations without your permission, except in certain emergencies when communication with health care providers is deemed by the public health agencies to be essential or when required by law. Participants who provide e-mail addresses may receive electronic announcements from the Department about future CME activities as well as other public health information.

**Participants must submit the accompanying exam by April 30, 2008.**

### CME Activity Faculty:

Palevsky S, Zucker J, Wake E.

All faculty are affiliated with the New York City DOHMH, Bureau of Immunization.

The faculty does not have any financial arrangements or affiliations with any commercial entities whose products, research, or services may be discussed in this issue.



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