



City Health Information

September 2003

The New York City Department of Health and Mental Hygiene

Vol. 22 No. 6

INFLUENZA: PREVENTION AND CONTROL

KEY 2003–2004 RECOMMENDATIONS

- All persons 50 years of age and older (especially those 65 years and over) and those persons with chronic medical conditions (and their close contacts) should receive influenza vaccine each year. All health care workers should be vaccinated early in the influenza season.
- Influenza vaccination of healthy children age 6–23 months is encouraged when feasible, as young, otherwise healthy children are at increased risk of influenza-related hospitalization. Vaccination of children age \geq 6 months who have medical indications continues to be strongly recommended.
- The optimal time to receive influenza vaccine is during October and November. As there is adequate vaccine supply this year, influenza vaccination can proceed for all high-risk and healthy persons as soon as vaccine is available. In past years, influenza activity has not reached peak levels until late December through early March. Therefore, vaccination efforts should continue through early 2004, at least until March.

In 2001, influenza and pneumonia caused more than 2,000 deaths in New York City and was the third leading cause of death among persons age 75 years and older.¹ More than 500,000 New Yorkers contract influenza every year. From 1990–1999, influenza accounted for more than 36,000 deaths annually in the United States.² Recent data demonstrate that in adults age 65 years and older, receipt of influenza vaccination is associated with large reductions in the risk of hospitalization for heart disease, stroke, pneumonia, and influenza, as well as reductions in the risk of death from all causes during influenza season.^{3,4}

Young children, especially those under 2 years of age, have the highest rate of hospitalization for influenza and its complications.^{5,6} Adults age 65 years and older have the highest mortality rates.

The majority of these deaths and hospitalizations can be prevented with a simple intervention—an annual influenza vaccination.

TARGET GROUPS FOR INFLUENZA VACCINATION

Influenza vaccine is recommended for:

- All persons 50 years of age and older, *particularly those age 65 and over*;

- All persons age 6 months and older with chronic medical conditions, including heart disease, pulmonary disorders (including asthma), diabetes, kidney disease, hemoglobinopathies, and compromised immune systems (HIV or immunosuppressive therapy);
- Residents of nursing homes and chronic-care facilities who are age 6 months and older;
- Women who will be in the second or third trimester of pregnancy during the influenza season;
- Children and adolescents, age 6 months to 18 years, receiving long-term aspirin therapy;
- Physicians, nurses, and other staff in both hospital and outpatient settings, including emergency departments;
- Close contacts of high-risk individuals, including all household members \geq 6 months of age and persons who provide home care (including home-care attendants);
- Employees of nursing homes, chronic-care facilities, assisted-living facilities, and other residences for persons in groups at increased risk;
- All children 6–23 months of age, when feasible.

All Persons 50–64 Years of Age

Up to one third of individuals age 50–64 years have underlying medical conditions that place them at high risk for complications from influenza. Age-based strategies have been more successful at increasing vaccine coverage than strategies based on medical conditions.⁷

Persons Who Can Transmit Influenza to Those at High Risk for Complications

Persons who are clinically or subclinically infected with influenza can transmit the influenza virus to others. Influenza is spread by aerosol, droplet, or direct contact; inhalation of even a small number of infective particles can transmit infection.⁸ Decreasing the transmission of influenza from caregivers or household members to persons at high risk reduces influenza-related disease and death.^{9,10} Vaccination of health care workers and others in close contact with persons at high risk, including household members, is strongly recommended.

Because children age 0–23 months are at increased risk for influenza-related hospitalization,^{5,6,11} vaccination is encouraged for their household contacts and out-of-home caretakers. This is particularly important for contacts of children age 0–5 months, because influenza vaccines have not been approved by the Food and Drug Administration (FDA) for use among children under 6 months of age.

Healthy Young Children

Influenza vaccination continues to be recommended for children 6–23 months of age when feasible.⁷ Healthy children under 2 years of age, and possibly children 2–4 years of age, are at increased risk of influenza-related hospitalization compared with older healthy children.⁶ Hospitalization rates for these young children are higher than those for adults age 65 and older.

Persons Who Should Not Be Vaccinated

Influenza vaccine should not be administered to persons known to have anaphylactic hypersensitivity to eggs or to other components of the vaccine. It is important to note that minor illnesses, with or without fever, are *NOT* contraindications to administration of influenza vaccine.

The Following are NOT Valid Contraindications for Withholding Influenza Vaccination:

- mild illness (such as diarrhea or upper respiratory tract illness)
- antibiotic therapy
- disease exposure or convalescence
- pregnancy in the household
- breastfeeding

- allergies to products not in the vaccine
- need for other vaccines at the same visit
- need for tuberculin skin testing.

INFLUENZA VACCINE COVERAGE

New York City survey data collected in 2002 showed that 63% of individuals age 65 and older reported receiving influenza vaccine in the 2001–2002 influenza season.¹² While higher than previous years, this falls well below the nationwide Healthy People 2010 target of 90%.¹³ These self-reported influenza vaccination rates vary dramatically by race and by neighborhood. Only 52% of African-American New Yorkers 65 years of age and older have been vaccinated, compared with 67% of whites.¹² Immunization rates were substantially below recommended targets for high-risk individuals. In the 2001–2002 influenza season, only 40% of all New Yorkers with diabetes and only 35% of persons with asthma were vaccinated.¹² Furthermore, studies have consistently shown that children with asthma do not receive influenza vaccination as recommended; coverage has ranged from 10% to 25%.^{14,15}

Although annual vaccination is recommended for health care workers, reported vaccination rates among this group are low. According to the Centers for Disease Control and Prevention (CDC), coverage rates are only in the mid-30% range.⁷ Data demonstrate that patients in long-term care facilities where more than 60% of the staff has been vaccinated experience less influenza-related illness and death compared with patients in facilities where fewer members of the staff have been vaccinated. In one study, total patient mortality was reduced from 17% to 10% (OR 0.56; 95% CI 0.40–0.80).⁹ Furthermore, vaccination of health care workers is associated with reduced work absenteeism.^{9,10,16}

IMPROVING COVERAGE RATES

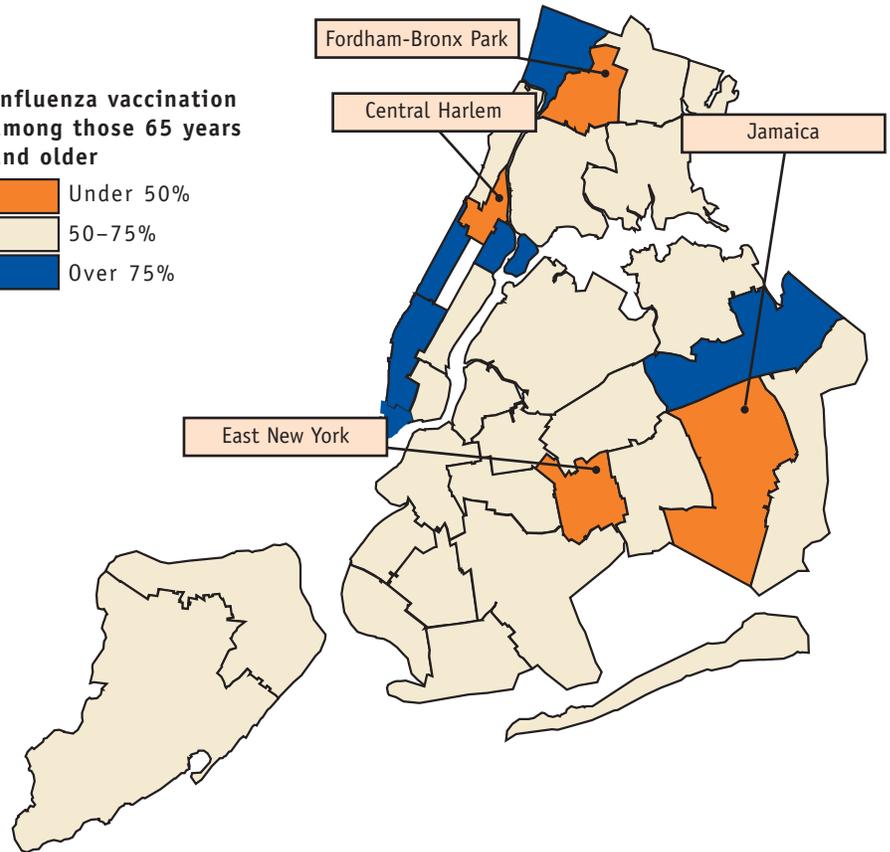
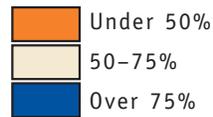
Access to health care in New York City is not a guarantee that an individual will receive influenza vaccine; 81% of unvaccinated older New Yorkers have both health insurance and a personal physician.¹²

Practice-based strategies that have been demonstrated to be effective in increasing influenza coverage rates include labeling the charts of high-risk patients and using

Self-Reported Influenza Vaccination Rates in NYC Neighborhoods, 2001-2002 Influenza Season

- Vaccination rates vary dramatically from neighborhood to neighborhood.
- Kingsbridge-Riverdale, Bayside-Fresh Meadows, Lower Manhattan, Chelsea-Village, the Upper West Side and East Harlem had the highest vaccination rates in the city. Even in these neighborhoods, however, up to 25% of older New Yorkers did not receive their annual vaccination for influenza.
- In Jamaica, East New York, Central Harlem, and Fordham-Bronx Park, more than half of older New Yorkers did not receive an influenza vaccination.

Influenza vaccination among those 65 years and older



Adapted from www.nyc.gov/html/doh/pdf/survey/survey-2002flu.pdf

reminder/recall systems.¹⁷ A physician’s specific recommendation to receive influenza vaccine is one of the most important factors for patient acceptance of vaccination. The use of standing orders is recommended for all long-term care, inpatient, and outpatient facilities (visit www.nyc.gov/html/doh/html/imm/immpinf.html for a standing order template). Health care facilities should offer influenza vaccination to all personnel, with particular emphasis on persons who provide care for members of high-risk groups.

INFLUENZA VACCINE

The effectiveness of influenza vaccine depends primarily on the age and immunocompetence of the recipient and the degree of similarity between the viruses in the vaccine and those in circulation during that season. Among healthy young adults, influenza vaccine

is up to 90% effective in preventing clinical illness. For the elderly population, the vaccine is up to 70%–80% effective in preventing secondary complications and reducing the risk of influenza-related hospitalization and death.

Influenza vaccine has few side effects. Soreness at the injection site may occur. Fever and malaise occur rarely. Allergic reactions to the vaccine are also rare.

An injection of influenza vaccine cannot cause influenza as it is made from inactivated virus. Coincidental respiratory disease unrelated to influenza vaccination can occur after vaccination.

Be sure that patients understand that influenza cannot be contracted from inactivated vaccine.

INFLUENZA VACCINE DOSAGE, BY AGE GROUP

Age Group	Dosage	Number of Doses	Route
6–35 months	0.25 mL	1* or 2**	IM
3–8 years	0.50 mL	1* or 2**	IM
≥ 9 years	0.50 mL	1	IM

* Only one dose is needed if the child received influenza vaccine during a previous influenza season.

** The second dose should be administered at least one month after the first dose.

Live Intranasal Influenza Vaccine (LAIV)

A new live attenuated influenza vaccine (LAIV) has recently been licensed. FluMist™, a live trivalent intranasally administered vaccine, is licensed for use only in healthy children and adults 5–49 years of age. Because it is a live virus vaccine, LAIV is contraindicated in individuals who are immunocompromised. LAIV should not be used in pregnant women or anyone with a chronic medical condition. Inactivated vaccine is recommended for those vaccine recipients who are close contacts (including household contacts and health care workers) of immunosuppressed persons because of the theoretical risk of transmission of live virus by recipients of LAIV. Stringent storage and handling requirements are required for LAIV; further information is available from the manufacturer.

INFLUENZA VACCINE SUPPLY

Inactivated influenza vaccine will be available from two manufacturers in 2003–2004. Available information indicates that there will be sufficient supply of vaccine this year. The NYC Department of Health and Mental Hygiene (NYC DOHMH) will provide updates in the event that the vaccine supply is less than expected or distribution is delayed.

A limited amount of influenza vaccine with reduced thimerosal content will be available for children age 6–35 months.

To remain potent, flu vaccine should be refrigerated at 35°F–46°F (2°C–8°C) and never frozen.

INSURANCE COVERAGE FOR INFLUENZA VACCINE

All commercial insurance written in New York State must cover influenza vaccine for high-risk children.¹⁸ The Vaccines for Children (VFC) Program covers influenza vaccine for VFC-eligible, high-risk children and healthy children age 6–23 months, and children 18 years and under who are household contacts of high-risk individuals.

Recent changes in the Medicare fee schedule have resulted in a substantial increase in reimbursement for influenza and pneumococcal vaccine administration for individuals 65 years and older covered by Medicare.

Commercial insurance plans may provide coverage for influenza and pneumococcal vaccines for at-risk patients.

Medicare reimbursement rates for administration of influenza and pneumococcal vaccines have increased substantially in 2003.

SURVEILLANCE FOR INFLUENZA

The NYC DOHMH, along with many partners, intensively monitors influenza activity through laboratory, vital statistics, disease reporting, and sentinel surveillance methods. In addition, the NYC DOHMH monitors 911-EMS calls, emergency department visits, and pharmacy prescriptions to detect increases in respiratory and/or flu-like illness that could herald the start of the influenza season.

When influenza virus is first detected in New York City, the NYC DOHMH notifies key offices in all hospitals and nursing homes via the Department's broadcast alert system. Updates on the level of activity and the types/subtypes of influenza circulating are sent during the season.

Hospitals and nursing homes are required to report the occurrence of one or more laboratory-confirmed nosocomial case(s) of influenza and/or any increased incidence of influenza-like illness (temperature ≥ 100°F, with either cough or sore throat, in the absence of another known disease). The facility should complete the Nosocomial Report Form DOH 4018 and fax it to the

New York State Department of Health (NYS DOH), Bureau of Communicable Disease Control, at (518) 474-7381. The NYS DOH will then notify the NYC DOHMH. Questions about nosocomial influenza reporting can be directed to the NYC Influenza Surveillance Coordinator at (212) 442-9050.

Influenza Surveillance

We are recruiting physicians to participate in an active surveillance system for influenza-like illness; in less than 30 minutes a week, you can participate in this important public health initiative. Please call Beth Nivin at (212) 442-9050 or e-mail bnivin@health.nyc.gov for more information.

USE OF ANTIVIRAL DRUGS

Antiviral drugs for influenza are an adjunct to influenza vaccine for the prevention and control of influenza. These agents are not a substitute for vaccination; widespread use of antivirals is NOT recommended.

There are currently 4 licensed agents effective against influenza: amantadine, rimantadine, zanamivir, and oseltamivir. Routine use of these agents could result in a large number of adverse effects and an increase in the development of drug-resistant strains, reducing the effectiveness of these drugs. For these reasons, judicious use of antiviral agents is recommended. Antiviral drug therapy is warranted, for example, in the control of influenza outbreaks in institutions as an adjunct to vaccination, droplet precautions, cohorting of patients, and restricting movement of ill persons.

For detailed information on indications for use of antiviral agents in influenza treatment and prophylaxis, dosage (including adjustments for persons 65 years and older, with impaired renal function and/or liver disease, or with seizure disorders), and adverse effects and contraindications (all 4 agents are pregnancy Category C)¹⁹ see reference or visit www.cdc.gov/mmwr/pdf/RR/RR5208-pdf.

USE OF PNEUMOCOCCAL VACCINE

There are approximately 500,000 cases of invasive pneumococcal disease in the United States annually, resulting in more than 40,000 deaths.²⁰ More than half of these deaths are preventable with adequate vaccination. Fatality rates are highest among persons 70 years and older.

The increasing prevalence of penicillin-resistant and multidrug-resistant pneumococcal strains underscores the importance of primary prevention through vaccination of high-risk populations. During 2002, the overall prevalence of penicillin resistance (MIC \geq 0.12 μ g/mL) among *S. pneumoniae* isolates in New York City was 26.7%; 8.5% of isolates were highly resistant (MIC \geq 2.0 μ g/mL).²¹

Pneumococcal polysaccharide vaccine (PPV23) reduces the risk of bacterial complications of influenza infection. It is recommended for all persons 65 years of age or older and for many of the same groups with indications for the influenza vaccine. Although pneumococcal vaccine is available throughout the year, the influenza season, when patients present for their yearly influenza vaccine, is an ideal opportunity to vaccinate PPV23-eligible people. A single revaccination is recommended after 5 years for those with a compromised immune system or people vaccinated before 65 years of age who are currently over 65 years.

In 2001 in New York City, only 50% of persons 65 years of age or older reported having been vaccinated against pneumococcal disease. Racial and ethnic disparities remain a problem; only 40% of African-American New Yorkers and only 45% of Hispanic New Yorkers reported receiving vaccine.¹²

Standing orders can facilitate the appropriate administration of pneumococcal vaccine in all ambulatory care centers and inpatient facilities. New York State law

Simultaneous Administration of Vaccines

Influenza vaccine may be given simultaneously with pneumococcal vaccine and all other vaccines (at different anatomic sites). Children may receive influenza vaccine simultaneously with all routine childhood vaccinations and/or pneumococcal vaccine.

THE NEW YORK CITY DEPARTMENT OF HEALTH AND MENTAL HYGIENE OFFERS THESE GUIDELINES:

1. As soon as vaccine is available, influenza vaccine should be offered routinely during office visits to all persons for whom vaccine is recommended, especially those at high risk for complications from influenza and their close contacts, including out-of-home caregivers and health care workers. Vaccination for all persons should then continue through early 2004, at least until March.
2. Standing orders should be implemented in all ambulatory care centers, inpatient facilities, and long-term care facilities to expedite administration of influenza vaccine to all patients 50 years of age and over and those with high-risk conditions. Efforts should be made to expand access to influenza vaccine in clinical settings by offering additional services, such as drop-in clinics, express-lane vaccination services, or weekend and evening clinics.
3. Vaccination against pneumococcal disease is strongly recommended. Use of standing orders should be considered to facilitate administration of the vaccine to all persons 65 years of age and older.
4. The pneumococcal vaccine can be given simultaneously with influenza vaccine at separate sites, if there is no documentation of previous pneumococcal vaccination. Please consult the Advisory Committee on Immunization Practices guidelines for pneumococcal revaccination for select populations.²⁰
5. Providers should implement office-based strategies to increase adult vaccination rates. Recommended practices include: use of standing orders, computerized record reminders, chart reminders, mailed or telephone reminders, and provision of health education materials to patients.

The NYC DOHMH provides updated information on influenza vaccination sites and influenza activity in the City via our Web site, www.nyc.gov/health/flu, and the Flu Hotline, which can be reached by dialing 311. Additional information on influenza and the vaccine supply is available at the CDC Web site, www.cdc.gov/nip/flu. These web sites also contain sample educational materials and recommended forms.

requires that all residents and employees of adult long-term residential facilities be offered pneumococcal and influenza vaccines.

WHEN IN THE OFFICE:

- Remember, your patients need to hear the message from their doctor: “Get your flu shot now!”
- Make sure all your medical office staff receive the influenza vaccine annually at the beginning of influenza season (October/November). Set an example by getting your vaccination early.
- Evaluate *every* patient for indications for influenza and pneumococcal vaccines. (Remember to ask patients about their high-risk contacts at home and in the workplace.)
- Withhold vaccination **ONLY** if there is a specific valid medical contraindication.
- Give your patients health education materials to read about the importance of the influenza vaccine. Discuss the information with them.
- If your patients and/or staff refuse vaccine, have them sign a “refusal” form to let them know you are serious about the importance of influenza vaccine (visit www.nyc.gov/html/doh/html/imm/immpinfo.html for a refusal form template).
- For recommendations and suggestions on providing influenza vaccine in your office, visit www.nyc.gov/html/doh/html/imm/immpinfo.html.

Influenza: Prevention and Control

SPONSORED BY THE NEW YORK CITY DEPARTMENT OF
HEALTH AND MENTAL HYGIENE

CITY HEALTH INFORMATION
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Objectives:

The educational objectives of this activity are to:

1. Identify the target groups for influenza vaccination;
2. Define true contraindications to influenza vaccine;
3. Specify the ideal time for individuals to receive influenza vaccine each influenza season;
4. Describe strategies for implementing influenza vaccination in the outpatient setting.

Accreditation:

The continuing medical education (CME) activity is open to physicians (MDs, DOs) and physician assistants. The New York City Department of Health and Mental Hygiene is accredited by the Medical Society of the State of New York to sponsor continuing medical education for physicians. The New York City Department of Health and Mental Hygiene designates this continuing medical education activity for 1.5 hours in Category One credit toward the AMA/PRA (Physician's Recognition Award). Each physician should claim only those hours of credit that he/she actually spent on the educational activity.

Participants in CME activities sponsored by the NYC DOHMH are required to submit their name, address, and professional degree. Such information will be maintained in the Department's CME program database. If participants in CME activities so request, the information will be used by the CME Program to verify whether a professional participated in an activity and, if the activity was associated with an exam, passed the exam.

The Department will not share information in the CME database with other organizations without permission from persons included in the database, except in certain emergencies or disasters where public health agencies deem communication with all health care providers to be essential or where required by law.

Participants who provide e-mail addresses upon registration for an activity may receive electronic announcements from the Department about future CME activities as well as other public health information.

The Continuing Nursing Education (CNE) activity is open to nurses. This educational activity is presented by the NYC

Department of Health and Mental Hygiene, which has been approved as a provider of continuing education by the NYSNA's Council on Continuing Education, which is accredited by the ANCC Commission on Accreditation as an approver of continuing education in nursing. A total of 1.8 contact hours will be awarded to nurses for participation in this activity.

Participants must submit the accompanying exam by March 31, 2004.

CME/CNE Activity Faculty: S Palevsky, MD, MPH, Provider Liaison; JR Zucker, MD, MSc, Medical Director: Bureau of Immunization, NYC DOHMH.



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1. The following individuals or groups should receive an annual influenza vaccine:

- A. All persons ≥ 65 years of age
- B. All persons ≥ 6 months of age with any chronic medical condition
- C. All persons 50–64 years of age
- D. Persons who live with or care for persons at high risk
- E. All health care workers
- F. All of the above

2. Which of the following is a valid contraindication for use of influenza vaccine?

- A. Concurrent administration of pneumococcal vaccine
- B. Upper respiratory illness
- C. Anaphylactic reaction to eggs
- D. Pregnancy
- E. All of the above

3. The most common adverse reaction following influenza vaccination is:

- A. Allergic reaction
- B. Influenza-like illness
- C. Fever
- D. Soreness at the injection site
- E. Guillain-Barré Syndrome

4. Because young, otherwise healthy children are at increased risk for influenza-related hospitalization:

- A. Influenza vaccine is encouraged for all children 6–23 months of age
- B. Influenza vaccine is recommended for all children < 6 months of age who have any condition that puts them at high risk for complications of influenza
- C. Influenza vaccine is recommended for household contacts and out-of-home caregivers of children 0–23 months of age
- D. B and C
- E. A and C

5. Pneumococcal polysaccharide vaccine is recommended for:

- A. All persons ≥ 50 years of age
- B. All persons ≥ 65 years of age
- C. Only those individuals who have received the influenza vaccine
- D. Only nursing home residents
- E. Anyone who requests the vaccine

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

- A. Very well
- B. Adequately
- C. Poorly

Name _____

Degree _____ Telephone _____

Address _____

E-mail address _____

CME/CNE Activity

This issue of *City Health Information*, including the continuing education activity, can be downloaded from the publications section at nyc.gov/health. To access *City Health Information* and Continuing Medical Education online, visit www.nyc.gov/html/doh/html/chi/chi.html

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.

If you would like to participate in this activity by submitting the response card:

1. Complete all information on the response card, including your name, degree, mailing address, telephone number, and e-mail address. PLEASE WRITE CLEARLY.
2. Select your answers to the questions, and check the corresponding boxes on the response card.
3. Return the response card or a photocopy of the card postmarked no later than March 31, 2004. Mail to CME/CNE Administrator; NYC Department of Health and Mental Hygiene; 125 Worth Street, CN-29C; New York, NY, 10013.

JOIN THE MEDICAL RESERVE CORPS/NYC

The NYC Department of Health & Mental Hygiene (DOHMH) Medical Reserve Corps (MRC) coordinates the skills of health professionals who volunteer to address the community's public health needs and to help New York during large-scale emergency situations. The MRC works in partnership with professional associations to ensure that health professionals are ready to respond. For information on the Medical Reserve Corps, dial 311 if calling from within NYC, or dial 1-866-NYC-MRC1 if calling from outside of NYC, or visit www.citymedicalreserve.org.

ONLINE CME/CNE ACTIVITIES

To participate in *City Health Information* CME/CNE activities online, visit www.nyc.gov/html/doh/html/chi/chi.html. Hardware/software requirements for online participation are given at this site.

Respondents who participate will have their responses graded immediately; participants who pass will be able to generate a certificate immediately. If participants have questions about the completion of this exam online, they may call (212) 788-5716.



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