Jim Doyle
Governor

Kevin R. Hayden
Secretary

**State of Wisconsin**

Department of Health and Family Services

**DIVISION OF PUBLIC HEALTH**

1 WEST WILSON STREET
P O BOX 2659
MADISON WI 53701-2659

608-266-1251
FAX: 608-267-2832
TTY: 888-701-1253
dhfs.wisconsin.gov

January 31, 2008

RE: CDC Health Advisory
Influenza-Associated Pediatric Mortality and *Staphylococcus aureus* co-infection
CDC Recommendations and Case Reporting

**CDC Recommendations:**

- Health care providers should test persons hospitalized with respiratory illness for influenza, including those with suspected community-acquired pneumonia.
- Health care providers should be alerted to the possibility of bacterial co-infection among children with influenza, and request bacterial cultures if children are severely ill or when community-acquired pneumonia is suspected.
- Health care providers should be aware of the prevalence of methicillin-resistant *S. aureas* (MRSA) strains in their communities when choosing empiric therapy for patients with suspected influenza-related pneumonia.

**Case Reporting:**

Since 2004, Influenza-Associated Pediatric Deaths have been a nationally reportable condition. The Department of Health and Family Services will make Influenza-Associated Pediatric Deaths reportable in Wisconsin, beginning March 1, 2008.

Case definition:

- An influenza-associated death is defined for surveillance purposes as a death resulting from a clinically compatible illness that was confirmed to be influenza by an appropriate laboratory or rapid diagnostic test.
- There should be no period of complete recovery between the illness and death.
- Influenza-associated deaths in all persons aged <18 years should be reported.

Laboratory criteria for diagnosis:
Laboratory testing for influenza virus infection may be done on pre- or post-mortem clinical specimens, and include identification of influenza A or B virus infections by a positive result by at least one of the following:

- Influenza virus isolation in tissue cell culture from respiratory specimens
- Reverse-transcriptase polymerase chain reaction (RT-PCR) testing of respiratory specimens
- Immunofluorescent antibody staining (direct or indirect) of respiratory specimens
- Rapid influenza diagnostic testing of respiratory specimens

- Immunohistochemical (IHC) staining for influenza viral antigens in respiratory tract tissue from autopsy specimens
- Four-fold rise in influenza hemagglutination inhibition (HI) antibody titer in paired acute and convalescent sera. Serologic testing for influenza is available in a limited number of laboratories, and should only be considered as evidence of recent infection if a four-fold rise in influenza antibody titer is demonstrated in paired sera. Single serum samples are not interpretable.

Attached are the CDC influenza-associated pediatric case report form.

Completed reports should be faxed to the Wisconsin Division of Public Health at (608) 261-4976. The Division of Public Health will be responsible for sending data to the CDC, and for assuring notification of local public health officials regarding data received from local healthcare providers, coroners and Medical Examiners.

Questions and clarification of reporting mechanisms and case consultation should be addressed to:

Thomas Haupt M.S.
Wisconsin Division of Public Health
hauptte@dhfs.state.wi.us
608-266-5326

# Influenza-Associated Pediatric Deaths Case Report Form

**Form approved**
**OMB No. 0920-0007**

**STATE USE ONLY – DO NOT SEND INFORMATION *IN THIS SECTION* TO CDC**

Last Name: _____ First Name: _____ County: _____

Address: City: State, Zip:

## Patient Demographics

| | | | |
|---|---|---|---|
| 1. State: | 2. County: | 3. State ID: | 4. CDC ID: |
| 5. Age: _____ ☐ Days ☐ Months ☐ Years | 6. Date of birth: _____/ _____/ _____ MM DD YYYY | 7.Sex: ☐ Male ☐ Female | 8. Ethnicity: ☐ Hispanic or Latino ☐ Not Hispanic or Latino ☐ Unknown |

9. Race: ☐ White ☐ Black ☐ Asian ☐ Native Hawaiian or Other Pacific Islander ☐ American Indian or Alaska Native ☐ Unknown

## Death Information

| | | |
|---|---|---|
| 10. Date of illness onset: _____/ _____/ _____ MM DD YYYY | 11. Date of death: _____/ _____/ _____ MM DD YYYY | 12 a. Was an autopsy performed? ☐ Yes ☐ No ☐ Unknown<br>12 b. Were pathology specimens sent to CDC? ☐ Yes ☐ No ☐ Unknown |

13 a. Did cardiac/respiratory arrest occur outside the hospital? ☐ Yes ☐ No ☐ Unknown

13 b. Location of death: ☐ Outside Hospital ☐ Emergency Dept (ER) ☐ Inpatient ward ☐ ICU ☐ Other (specify): _____

## Influenza Testing (check all that were used)

| Test Type | Result | Specimen Collection Date |
|---|---|---|
| ☐ Commercial rapid diagnostic test | ☐ Influenza A ☐ Influenza B ☐ Negative ☐ Influenza A/B (Not Distinguished) | _____/ _____/ _____ |
| ☐ Viral culture | ☐ Influenza A (Subtyping Not Done) ☐ Influenza B ☐ Negative ☐ Influenza A (Unable To Subtype) ☐ Influenza A (H1) ☐ Influenza A (H3) | _____/ _____/ _____ |
| ☐ Direct fluorescent antibody (DFA) | ☐ Influenza A ☐ Influenza B ☐ Negative ☐ Influenza A/B | _____/ _____/ _____ |
| ☐ Indirect fluorescent antibody (IFA) | ☐ Influenza A ☐ Influenza B ☐ Negative ☐ Influenza A/B | _____/ _____/ _____ |
| ☐ Enzyme immunoassay (EIA) | ☐ Influenza A (Subtyping Not Done) ☐ Influenza B ☐ Negative ☐ Influenza A (Unable To Subtype) ☐ Influenza A (H1) ☐ Influenza A (H3) | _____/ _____/ _____ |
| ☐ RT-PCR | ☐ Influenza A (Subtyping Not Done) ☐ Influenza B ☐ Negative ☐ Influenza A (Unable To Subtype) ☐ Influenza A (H1) ☐ Influenza A (H3) | _____/ _____/ _____ |
| ☐ Immunohistochemistry (IHC) | ☐ Influenza A ☐ Influenza B ☐ Negative | _____/ _____/ _____ |

# Influenza-Associated Pediatric Deaths Case Report Form

## Culture confirmation of INVASIVE bacterial pathogens

14 a. Was a specimen collected for bacterial culture from a normally sterile site (e.g., blood, cerebrospinal fluid [CSF], tissue, or pleural fluid)? ☐ Yes ☐ No ☐ Unknown

14 b. If yes, please indicate the site from which the specimen was obtained.

| | | |
|---|---|---|
| ☐ Blood | Date __/__/__ | ☐ Positive ☐ Negative ☐ Unknown |
| ☐ Pleural fluid | Date __/__/__ | ☐ Positive ☐ Negative ☐ Unknown |
| ☐ CSF | Date __/__/__ | ☐ Positive ☐ Negative ☐ Unknown |
| ☐ Other _____ | Date __/__/__ | ☐ Positive ☐ Negative ☐ Unknown |
| ☐ Unknown | | |

14 c. What was the result of the bacterial culture? ☐ Positive ☐ Negative ☐ Unknown

| 14 d. If positive, please check the organism cultured. | | |
|---|---|---|
| ☐ *Streptococcus pneumoniae* | ☐ *Staphylococcus aureus*, methicillin **sensitive** | ☐ *Neisseria meningitidis (serogroup, if known):*_____ |
| ☐ *Haemophilus influenzae* type b | ☐ *Staphylococcus aureus*, methicillin **resistant (MRSA)** | ☐ Group A streptococcus |
| ☐ *Haemophilus influenzae* not-type b | ☐ *Staphylococcus aureus*, **sensitivity not done** | ☐ Other invasive bacteria: _____ |

## Culture confirmation of bacterial pathogens from NON-STERILE SITES

14 e. Were other respiratory specimens collected for bacterial culture (e.g., sputum, ET tube aspirate)? ☐ Yes ☐ No ☐ Unknown

14 f. If yes, please indicate the site from which the specimen was obtained.

| | | |
|---|---|---|
| ☐ Sputum | Date __/__/__ | ☐ Positive ☐ Negative ☐ Unknown |
| ☐ ET tube | Date __/__/__ | ☐ Positive ☐ Negative ☐ Unknown |
| ☐ Other _____ | Date __/__/__ | ☐ Positive ☐ Negative ☐ Unknown |
| ☐ Unknown | | |

14 g. What was the result of the bacterial culture? ☐ Positive ☐ Negative ☐ Unknown

| 14 h. If positive, please check the organism cultured. | | |
|---|---|---|
| ☐ *Streptococcus pneumoniae* | ☐ *Staphylococcus aureus*, methicillin **sensitive** | ☐ *Neisseria meningitidis (serogroup, if known):*_____ |
| ☐ *Haemophilus influenzae* type b | ☐ *Staphylococcus aureus*, methicillin **resistant (MRSA)** | ☐ Group A streptococcus |
| ☐ *Haemophilus influenzae* not-type b | ☐ *Staphylococcus aureus*, **sensitivity not done** | ☐ Other bacteria: _____ |

## Medical Care

15. Did the patient receive medical care for this illness before admission to the hospital or death if outside the hospital? ☐ Yes* ☐ No ☐ Unknown

16. **If YES*,** indicate level(s) of care received (check all that apply): ☐ Outpatient clinic ☐ ER ☐ Inpatient ward ☐ ICU

17. Did the patient require mechanical ventilation? ☐ Yes ☐ No ☐ Unknown

# Influenza-Associated Pediatric Deaths Case Report Form

## Clinical Diagnoses and Complications

18 a. **Did complications occur during the acute illness:** ☐ Yes ☐ No ☐ Unknown

18 b. **If yes, check all complications that occurred during the acute illness:**

☐ Pneumonia (Chest X-Ray confirmed) ☐ Acute Respiratory Disease Syndrome (ARDS) ☐ Croup ☐ Seizures

☐ Bronchiolitis ☐ Encephalopathy/encephalitis ☐ Reye syndrome ☐ Shock ☐ Sepsis

☐ Another viral co-infection: _____ ☐ Other: _____

19 a. **Did the child have any medical conditions that existed before the start of the acute illness:** ☐ Yes ☐ No ☐ Unknown

19 b. **If yes, check all medical conditions that existed before the start of the acute illness:**

☐ Moderate to severe developmental delay ☐ Hemaglobinopathy (e.g. sickle cell disease) ☐ Asthma/ reactive airway disease

☐ Diabetes mellitus ☐ History of febrile seizures ☐ Seizure disorder ☐ Cystic fibrosis

☐ Cardiac disease (specify) _____ ☐ Renal disease (specify) _____ ☐ Skin or soft tissue infection

☐ Chronic pulmonary disease (specify) _____ ☐ Immunosuppressive condition (specify) _____

☐ Metabolic disorder (specify) _____ ☐ Neuromuscular disorder (including cerebral palsy) (specify) _____

☐ Pregnant (specify gestational age) _____ weeks ☐ Other (specify) _____

## Medication and Therapy History

20 a. Was the patient receiving any of the following therapies in the 7 days prior to illness onset or after illness onset? **(check all that apply)**

☐ Aspirin or aspirin-containing products ☐ NSAID or NSAID-containing products

20 b. Was the patient receiving any of the following therapies prior to illness onset? **(check all that apply)**

☐ Antibiotic therapy ☐ Antiviral therapy specify_____ ☐ Chemotherapy or radiation therapy ☐ Steroids by mouth or injection ☐ other immunosuppressive therapy:_____

## Influenza vaccine history

21. Did the patient receive any influenza vaccine during the current season (before illness) ☐ Yes* ☐ No ☐ Unknown

22. **If YES*,** please specify influenza vaccine received before illness onset: ☐ Trivalent inactivated influenza vaccine (TIV) *[injected]* ☐ Live-attenuated influenza vaccine (LAIV) *[nasal spray]* ☐ Unknown

23. **If YES***, how many doses did the patient receive and what was the timing of each dose? (Enter vaccination dates if available)

| | | | |
|---|---|---|---|
| ☐ 1 dose **ONLY** | ☐ <14 days prior to illness onset<br>☐ ≥14 days prior to illness onset | Date dose given:_____/ _____/ _____ MM DD YYYY | |
| ☐ 2 doses | ☐ 2nd dose given <14 days prior to onset<br>☐ 2nd dose given ≥14 days prior to onset | Date of 1st dose: _____/ _____/_____ MM DD YYYY | Date of 2nd dose: _____/ _____/ _____ MM DD YYYY |

24. Did the patient receive any influenza vaccine in previous seasons? ☐ Yes ☐ No ☐ Unknown

Submitted By: _____ Date: _____/ _____/ _____ MM DD YYYY

Phone No.: (_____) - _____

E-mail Address: _____