

Novel Influenza A (H1N1) Virus and Children with Underlying Medical Conditions AAP Work Group Clarifies Children at Highest Risk

On September 4, 2009, data related to children at highest risk of experiencing fatal outcomes from novel influenza A (H1N1) virus were published in the *MMWR*.¹ With support from the Centers for Disease Control and Prevention (CDC), the American Academy of Pediatrics (AAP) identified an expert work group to review these data and provide information that would assist clinical providers in the prevention, management, and treatment of H1N1 influenza in children at highest risk of experiencing fatal outcomes from infection.

The AAP recognizes that information related to H1N1 is constantly evolving. Updates and additional guidance will be provided to members on the clinical management of children with H1N1 as new and important information with implications for practice becomes available.

On the basis of recent mortality data and prior experience from seasonal influenza, children with certain diagnoses/conditions appear to be at highest risk of experiencing fatal outcomes from H1N1 influenza illness.² These observations are intended to highlight medically fragile children who may—or may not yet—seem to be notably affected by the H1N1 virus but, because of their underlying medical condition(s), merit closer medical follow-up and/or treatment.

The conditions identified by this AAP Work Group as placing children most at risk of serious outcomes from H1N1 influenza include:

1. Neurological disorders, such as:
 - Epilepsy or cerebral palsy, especially when accompanied by neurodevelopmental disabilities (eg, moderate to profound intellectual disability [mental retardation] or developmental delay).
 - Neuromuscular disorders (eg, muscular dystrophy), when associated with impairment in respiratory functioning.
2. Chronic respiratory diseases associated with impaired pulmonary function and/or difficulty handling lung secretions; moderate and especially severe persistent asthma; technology-dependent children (eg, those requiring oxygen, tracheostomy, or a ventilator).
3. Moderate to profound intellectual disability (mental retardation) or developmental delay, especially when associated with specific conditions (see #1 and #2 above).
4. Deficiencies in immune function or conditions that require medications or treatments (eg, certain cancer treatments) that result in significant immune deficiencies.
5. Congenital heart disease or significant metabolic (eg, mitochondrial) or endocrine disorders, especially if a child has specific respiratory conditions (see #2 above).

These observations are based on limited mortality data and prior experience with seasonal influenza. The specifics may be modified as ongoing data are collected and analyzed during this pandemic. *Additional conditions may be determined to place children at high risk of severe complications; those already reported for seasonal influenza^{3,4} also should be considered for H1N1.*

There are a number of children who have no known risk factors and who nonetheless; experience fatal outcomes from H1N1; many, but not all, of them developed invasive bacterial infections.

These observations, therefore, cannot replace clinical judgment. Any child demonstrating clinical symptoms (eg, respiratory distress) that suggest the need for more aggressive intervention should receive appropriate treatment regardless of the absence of any underlying condition.

Children with H1N1 or influenza-like illness will likely be seen for medical evaluation in emergency departments, pediatric offices, and other settings. Guidelines for the emergency care of children are available and can be used along with triage algorithms and other tools to support clinical decision-making within a medical home.⁵

The AAP will continue to monitor issues related to H1N1 and children with special health care needs as they evolve and will provide its membership with additional information as necessary and appropriate.

ADDITIONAL INFORMATION AND RESOURCES

[Updated Interim Recommendations for the Use of Antiviral Medications in the Treatment and Prevention of Influenza for the 2009-2010 Season \(CDC\)](#)

[Novel Influenza A \(H1N1\) Virus \(Swine Flu\) Information for Health Care Professionals \(AAP\)](#)

Contact the Centers for Disease Control and Prevention (CDC) 24 hours a day, every day with pediatric-specific questions at 800-CDC-INFO or 800-232-4636; TTY: 888-232-6348; or cdcinfo@cdc.gov. Identify yourself as a pediatrician immediately to obtain the most specific assistance.

September 29, 2009

¹ Centers for Disease Control and Prevention. Surveillance for pediatric deaths associated with 2009 pandemic influenza A (H1N1) virus infection—United States, April-August 2009. *MMWR Morb Mortal Wkly Rep.* 2009;58(36):1009-1012. Available at: <http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5834a1.htm>. Accessed September 25, 2009

² Centers for Disease Control and Prevention. [Updated Interim Recommendations for the Use of Antiviral Medications in the Treatment and Prevention of Influenza for the 2009-2010 Season.](#) Available at: <http://www.cdc.gov/h1n1flu/recommendations.htm>. Accessed September 25, 2009

³ American Academy of Pediatrics, Committee on Infectious Diseases. Recommendations for the prevention and treatment of influenza in children, 2009-2010. *Pediatrics.* 2009;124(4): in press. Available at: <http://pediatrics.aappublications.org/cgi/reprint/peds.2009-1806v1>. Accessed September 25, 2009

⁴ Centers for Disease Control and Prevention. Prevention and control of seasonal influenza with vaccines. Recommendations of the Advisory Committee on Immunization Practices (ACIP), 2009.

MMWR Recomm Rep. 2009;58(Early Release):1-52. Available at:
<http://www.cdc.gov/mmwr/preview/mmwrhtml/rr58e0724a1.htm>. Accessed September 25, 2009

- ⁵ American Academy of Pediatrics, Committee on Pediatric Emergency Medicine; American College of Emergency Physicians, Pediatric Committee; Emergency Nurses Association, Pediatric Committee. Joint policy statement—Guidelines for care of children in the emergency department. *Pediatrics*. 2009;124(4):1233. Available at:
<http://pediatrics.aappublications.org/cgi/reprint/peds.2009-1807v1>. Accessed September 28, 2009