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AAP updates policy on flu prevention, treatment

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The Academy has updated its recommendations for the prevention and treatment of influenza in children, addressing how the influenza vaccine composition has changed, the recent licensure of quadrivalent vaccines, the availability of multiple formulations of vaccine and the role of antivirals, among other issues. The recommendations for the 2013-'14 influenza season are published in the October issue of *Pediatrics* (2013;132:e1089-e1104).

Last year's influenza season was moderately severe compared with the 2011-'12 season, with a higher percentage of outpatient visits for influenza-like illness, higher hospitalizations rates, and more deaths attributed to pneumonia and influenza.

As always, influenza virus is unpredictable. The influenza season may start early in the fall/winter, have more than one disease peak in a community and even extend into late spring. Therefore, as soon as the seasonal influenza vaccine is available locally, health care personnel should be immunized, parents and caregivers should be notified about vaccine availability, and immunization of all children 6 months and older, especially children at high risk of complications from influenza, should begin.

Key messages from the updated policy statement are highlighted.

The influenza vaccine composition this season has changed from last season.

The trivalent vaccine for the 2013-'14 season contains the following three virus strains:

- A/California/7/2009 (H1N1)-like virus (derived from influenza A [H1N1] pdm09 [pH1N1] virus)
- A/Texas/50/2012 (H3N2) virus
- B/Massachusetts/2/2012-like virus (B/Yamagata lineage)

While the H1N1 antigen is the same, the influenza A (H3N2) and B antigens differ from those in the 2012-'13 seasonal vaccines (two new strains).

Quadrivalent influenza vaccines are licensed and available.

In recent years, it has proven difficult to predict consistently which of two B virus lineages (i.e., Victoria or Yamagata) will predominate during a given influenza season. Therefore, a quadrivalent influenza vaccine with influenza B strains of *both* lineages may offer improved protection.

New quadrivalent vaccines for the 2013-'14 season contain the same three strains as the trivalent vaccine and include an additional B strain (opposite lineage). Post-marketing safety and vaccine effectiveness data are not yet available, prohibiting a full risk-benefit analysis of newer vs. previously available products.

Photo courtesy of the CDC

All children and adolescents 6 months of age and older should receive influenza vaccine annually, especially those with conditions that increase the risk of complications from influenza.

Multiple formulations of influenza vaccine are available this season.

In the past, there have been two forms of the vaccine: trivalent inactivated influenza vaccine (TIV) and live-attenuated influenza vaccine (LAIV), both of which contained the same three annually selected virus strains. Beginning this season, inactivated influenza vaccines will be available in both trivalent (IIV3) and quadrivalent (IIV4) formulations (no preference).

The abbreviation IIV has replaced TIV because inactivated influenza vaccines now contain either three or four virus strains. The trivalent live attenuated influenza vaccine (LAIV) will be replaced by a quadrivalent LAIV formulation (LAIV4).

With the addition of several newly licensed influenza vaccines, it is likely that more than one type or brand of vaccine may be appropriate for vaccine recipients. However, no recommendation is made for use of any influenza vaccine product over another. Vaccination should not be delayed in order to obtain a specific product.

Annual universal influenza immunization is indicated for all children and adolescents 6 months of age and older.

Special outreach efforts should be made to vaccinate people in the following groups:

- all children 6 months of age and older, especially those with conditions that increase the risk of complications from influenza (e.g., asthma, diabetes mellitus, hemodynamically significant cardiac disease, immunosuppression or neurologic and neurodevelopmental disorders);
- children of American Indian/Alaska Native heritage;

- all household contacts and out-of-home care providers of:
  - children with high-risk conditions
  - children younger than 5 years, especially infants younger than 6 months;
- all health care personnel; and
- all women who are pregnant, are considering pregnancy, have recently delivered or are breastfeeding during the influenza season.

Egg-allergic children should be vaccinated.

IIV administered in a single, age-appropriate dose is well-tolerated by virtually all recipients who have egg allergy. LAIV is not recommended for egg-allergic children this season, as it has not been studied adequately in this population.

As a precaution, pediatricians should continue to determine whether the presumed egg allergy is based on a mild (i.e., hives alone) or severe reaction (i.e., anaphylaxis involving cardiovascular changes, respiratory and/or gastrointestinal tract symptoms, or reactions that required the use of epinephrine). Pediatricians should consult with an allergist for children with a history of severe reaction. Most individuals with egg allergy can be vaccinated without the need for referral.

Two trivalent influenza vaccines manufactured using new technologies that do not utilize eggs also will be available for people 18 years or older: cell culture-based inactivated influenza vaccine (ccIIV3) and recombinant influenza vaccine (RIV3). Pediatricians may consider the use of ccIIV3 or RIV3 for young adults with egg allergy.

RESOURCE

Pediatricians can find speaking points on the flu at http://www.aap.org/en-us/my-aap/advocacy/workingwiththemedia/speaking-tips/Pages/Flu-Vaccine-Recommendations-Speaking-Points.aspx.

Antivirals continue to be important in the control of influenza.

Treatment should be offered for:

- any child hospitalized with presumed influenza or with severe, complicated or progressive illness attributable to influenza, regardless of influenza immunization status; and
- influenza infection of any severity in children at high risk of complications of influenza.

Treatment should be considered for:

- any otherwise healthy child with influenza infection for whom a decrease in duration of clinical symptoms is felt to be warranted by his or her pediatrician; the greatest impact on outcome will occur if treatment can be initiated within 48 hours of illness onset.

The neuraminidase inhibitors oral oseltamivir and inhaled zanamivir are the only antiviral medications routinely recommended for treatment or chemoprophylaxis of influenza for the 2013-'14 season. Chemoprophylaxis should never be a substitute for immunization.

The Food and Drug Administration recently licensed oseltamivir down to 2 weeks of age. Given its known safety profile, weight-based dosing of oseltamivir can be used to treat influenza in both term and preterm infants from birth, while chemoprophylaxis should be considered only in term infants (see table).

Dr. Bernstein *is the associate editor of* Red Book Online *and an ex officio member of the AAP Committee on Infectious Diseases.*

Oseltamivir dosing for term and preterm infants younger than 1 year

Age	Treatment (mg/kg/dose po BID x 5 days)	Chemoprophylaxis (mg/kg/dose po QD x 10 days)
Preterm		
• younger than 38 weeks postmenstrual age*	1.0	Not recommended
• 38 through 40 weeks postmenstrual age	1.5	Not recommended
• older than 40 weeks postmenstrual age	3.0	Not recommended
Term		
0 to younger than 9 months	3.0	• 3.0 (infants 3 through 8 months) • Not recommended for infants younger than 3 months, unless situation judged critical, because of limited safety and efficacy data in this age group
9 to younger than 12 months	3.5	3.5

*Postmenstrual age is defined as gestational age + chronological age (in weeks).