

Influenza in children

Background and epidemiology: The US Advisory Committee on Immunization Practices now recommends influenza immunization of all healthy children aged 6–23 months.¹ This is a change from its previous recommendations, which focused on vaccinating children with chronic medical conditions, and differs from current Canadian guidelines, which encourage vaccinating healthy young children but do not designate them as being at high risk of infection.² The change in the US guidelines resulted from recent reports indicating that otherwise healthy young children aged 6–23 months were being admitted to hospital because of influenza and its complications at rates comparable to those among people at high risk, for whom routine immunization was recommended, such as elderly people.³ One study reported an influenza-related rate of hospital admission among healthy children under 2 years of age that was 12 times higher than the rate among healthy children aged 5–17 years and that approached the rate among children 5–17 years with chronic health conditions.⁴

In the middle of the influenza season last year, the problem of influenza in children attracted attention when, in January 2003, the Michigan Department of Community Health received reports of severe influenza-associated morbidity and mortality among children and young adults under 21 years of age.⁵ Enhanced surveillance identified 14 cases, including 4 deaths. Of these cases, 8 had evidence of encephalopathy and 1 had evidence of myocarditis. Most of the cases were caused by influenza A, although the H (hemagglutinin) and N (neuraminidase) subtypes varied. Cases of influenza-associated acute encephalopathy among children have also been reported in Japan. These occurrences have prompted recommendations for further studies to better define the frequency of serious complications from influenza in children and young adults and to incorporate such findings into evaluations of current vaccine recommendations for children.⁵

Clinical management: Each year, about 9%–20% of healthy children aged less than 5 years will require health care for an influenza-related illness.⁶ Common presentations include a febrile illness, an acute respiratory tract illness and otitis media. Children less than 2 are most susceptible to the serious complications of influenza and may present with pneumonia, croup, bronchiolitis and sepsis.⁶ One cannot diagnose influenza virus infections clinically with confidence because many respiratory viruses (e.g., parainfluenza, respiratory syncytial virus, adenovirus and coxsackievirus) cause similar symptoms and signs.⁷ Rapid enzyme-linked immunosorbent assay and polymerase chain reaction diagnostic tests for influenza A and B are available but have not been widely used in the office setting, primarily because in most cases the disease is self-limiting and the treatment options for influenza infection in children are limited.

Amantadine syrup is available for treating influenza A in children and may also be used for chemoprophylaxis in unvaccinated contacts with underlying illness that puts them at high risk of severe infection. Neuraminidase inhibitors (e.g., oseltamivir and zanamivir) are active against influenza A and B and are often used in adults.⁷ Their role in young children has not been clearly established, although authors of a recent Cochrane review of the evidence concluded that they were effective in shortening illness duration in previously healthy children aged 1–12 years with a clinical or laboratory diagnosis of influenza and that efficacy in children with asthma remains to be proven.⁸

Prevention: The key to controlling influenza infection is prevention. The importance of hand-washing cannot be overemphasized. Vaccination works to prevent cases;⁹ one of the biggest factors influencing whether a child is vaccinated is whether the family physician recommends it (odds ratio 6.8, 95% confidence interval 2.4–19.2).¹⁰ The antigenic characteristics of current and

emerging influenza virus strains provide the basis for selecting the strains included in each year's vaccine. Previously unvaccinated children less than 9 years old require 2 doses (4 weeks apart) of the split-virus influenza vaccine.² Previously vaccinated children less than 9 years old do not require the second dose, nor do older children. The recommended single dose of vaccine is 0.25 mL for children aged 6–35 months and 0.50 mL for older children. Intramuscular administration is preferred. Newer vaccines, such as the cold-adapted, live attenuated vaccine administered as a large-droplet intranasal spray, are currently under review.¹¹

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