Pneumococcal Vaccination for Cochlear Implant Candidates and Recipients: Updated Recommendations of the Advisory Committee on Immunization Practices

On July 31, this report was posted on the MMWR website (http://www.cdc.gov/mmwr).

In October 2002, CDC recommended that all persons with cochlear implants receive age-appropriate pneumococcal vaccination with 7-valent pneumococcal conjugate vaccine (PCV7) (Prevnar®, 23-valent pneumococcal polysaccharide vaccine (PPV23) (Pneumovax®), or both according to the Advisory Committee on Immunization Practices (ACIP) schedules for persons at high risk (1). CDC issued these recommendations on the basis of preliminary data suggesting an increased risk for pneumococcal meningitis in persons with cochlear implants. Findings of a recent investigation by CDC, the Food and Drug Administration (FDA), and state health departments support this recommendation. Children aged <6 years with a cochlear implant had a substantially greater risk for having pneumococcal meningitis, compared with children in the general U.S. population of the same age (2). Some children who are candidates for cochlear implants have pre-existing anatomic factors that might contribute to an increased risk for meningitis; however, the recent study was not designed to assess this association (2).

Because the rate for pneumococcal meningitis is higher in children with cochlear implants and Streptococcus pneumoniae is the most common pathogen causing bacterial meningitis in cochlear implant recipients of all ages with meningitis of known etiology (2,3), ACIP recommends the following for persons who have or are scheduled to receive a cochlear implant (Table):

- Children aged <24 months with cochlear implants should receive PCV7, as is universally recommended; children with a lapse in vaccination should be vaccinated according to the catch-up schedule issued after the PCV7 shortage resolved (4,5).
- Children aged 24--59 months with cochlear implants who have not received PCV7 should be vaccinated according to the high-risk schedule; children with a lapse in vaccination should be vaccinated according to the catch-up schedule for persons at high risk issued after the PCV7 shortage resolved (3,4). Children who have completed the PCV7 series should receive PPV23 ≥2 months after vaccination with PCV7 (3).
- Persons aged 5--64 years with cochlear implants should receive PPV23 according to the schedule used for persons with chronic illnesses; a single dose is indicated (6).
Persons planning to receive a cochlear implant should be up-to-date on age-appropriate pneumococcal vaccination ≥2 weeks before surgery, if possible.

Health-care providers should review vaccination records of their patients who are cochlear implant recipients or candidates to ensure that they have received pneumococcal vaccinations based on the age-appropriate schedules for persons at high risk. In addition, all cases of meningitis should be reported to state health departments according to state requirements. Because information about *Streptococcus pneumoniae* serotypes causing pneumococcal meningitis in persons with cochlear implants is limited, providers are encouraged to send isolates to their state health department, which can forward isolates to CDC, where serotyping can be performed to determine whether the type is included in the vaccines.

To send an isolate, contact CDC’s National Center for Infectious Diseases, telephone 404-639-2215. Providers also are encouraged to report cases of meningitis in cochlear implant recipients to FDA's MedWatch. Reports can be submitted online at [http://www.accessdata.fda.gov/scripts/medwatch](http://www.accessdata.fda.gov/scripts/medwatch); by telephone, 800-332-1088; by fax, 800-332-0178; or by mail, MedWatch, Food and Drug Administration, HF-2, 5600 Fishers Lane, Rockville, Maryland 20857. Cases also can be reported directly to the device manufacturer.

**References**

**Table**

<table>
<thead>
<tr>
<th>Age at first PCV7 dose (mos)*</th>
<th>PCV7 primary series</th>
<th>PCV7 additional dose</th>
<th>PPV23 dose</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-6</td>
<td>3 doses, 2 months apart†</td>
<td>1 dose at 12-15 months of age§</td>
<td>Indicated at ≥24 months of age¶</td>
</tr>
<tr>
<td>7-11</td>
<td>2 doses, 2 months apart†</td>
<td>1 dose at 12-15 months of age§</td>
<td>Indicated at ≥24 months of age¶</td>
</tr>
<tr>
<td>12-23</td>
<td>2 doses, 2 months apart*</td>
<td>Not indicated</td>
<td>Indicated at ≥24 months of age¶</td>
</tr>
<tr>
<td>≥60</td>
<td>2 doses, 2 months apart**</td>
<td>Not indicated</td>
<td>Not indicated††</td>
</tr>
</tbody>
</table>

*A schedule with a reduced number of total 7-valent pneumococcal conjugate vaccine (PCV7) doses is indicated if children start late or are incompletely vaccinated. Children with a lapse in vaccination should be vaccinated according to the catch-up schedule (CDC. Pneumococcal conjugate vaccine shortage resolved. MMWR 2003;52:446-7).† For children vaccinated at age <1 year, minimum interval between doses is 4 weeks.‡ The additional dose should be administered ≥2 weeks after the primary series has been completed.§ Children aged <2 years should complete the PCV7 series first. 23-valent pneumococcal polysaccharide vaccine (PPV23) should be administered to children aged ≥24 months ≥3 weeks after the last dose of PCV7 (CDC. Preventing pneumococcal disease among infants and young children: recommendations of the Advisory Committee on Immunization Practices. MMWR 2000;49(RR-6).¶ Minimum interval between doses is 6 weeks.†† PCV7 is not indicated generally for children aged ≥5 years.

Use of trade names and commercial sources is for identification only and does not imply endorsement by the U.S. Department of Health and Human Services.

References to non-CDC sites on the Internet are provided as a service to *MMWR* readers and do not constitute or imply endorsement of these organizations or their programs by CDC or the U.S. Department of Health and Human Services. CDC is not responsible for the content of pages found at these sites. URL addresses listed in *MMWR* were current as of the date of publication.

**Disclaimer** All *MMWR* HTML versions of articles are electronic conversions from ASCII text into HTML. This conversion may have resulted in character translation or format errors in the HTML version. Users should not rely on this HTML document, but are referred to the electronic PDF version and/or the original *MMWR* paper copy for the official text, figures, and tables. An original paper copy of this issue can be obtained from the Superintendent of Documents, U.S. Government Printing Office (GPO), Washington, DC 20402-9371; telephone: (202) 512-1800. Contact GPO for current prices.

**Questions or messages regarding errors in formatting should be addressed to mmwrq@cdc.gov.**

Page converted: 8/7/2003