State of California—Health and Human Services Agency
California Department of Public Health

RON CHAPMAN, MD, MPH
Director

EDMUND G. BROWN JR.
Governor

California Department of Public Health – Health Advisory
August 18, 2011

FATAL VACCINE-PREVENTABLE PNEUMOCOCCAL DISEASE
Pediatric providers - Immunize all children younger than 5 years of age who have not yet received 13-valent pneumococcal conjugate vaccine.

The California Department of Public Health has received a report of young child who died in 2011 from invasive pneumococcal disease (IPD). This child died from IPD caused by *Streptococcus pneumoniae* serotype 19A, one of six serotypes that are protected against by the13-valent pneumococcal conjugate vaccine (PCV13) but not by 7-valent pneumococcal conjugate vaccine (PCV7). In addition, at least 29 other California children have developed nonfatal vaccine-preventable IPD since PCV13 became available.

CDPH reminds healthcare providers to protect pediatric patients who have completed an age-appropriate series of PCV7 with one additional dose of PCV 13, including:

- **All children 14 through 59 months of age**
- **Children 60 through 71 months of age with specified underlying medical conditions (see Table).**

In addition, children who began, but did not finish, a series with doses of PCV7 should complete their series with doses of PCV13.

A single dose of PCV13 may also be administered to children 6-18 years of age with specified underlying conditions (see Table).

<u>Providers should not be using PCV7 at this time</u>. If you have any remaining stock, please contact the CDPH VFC program or your private distributor.

For detailed information about IPD and immunization with PCV13, please review the December 2010 federal ACIP recommendations at:
http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5911a1.htm?s_cid=rr5911a1_e

In addition for information about revaccination of hematopoietic cell transplant recipients, please see the 2011 ACIP general recommendations at:
http://www.cdc.gov/mmwr/preview/mmwrhtml/rr6002a1.htm?s_cid=rr6002a1_e

Background
Streptococcus pneumoniae (pneumococcus) remains a leading cause of serious bacterial illness, including bacteremia, meningitis, and pneumonia among children and adults worldwide. It is also a major cause of sinusitis and acute otitis media. Most of the over 90 identified pneumococcal serotypes have been shown to cause serious disease; however, the majority of pneumococcal infections are caused by only a few serotypes.

Before routine use of pneumococcal conjugate vaccine, ~17,000 cases of IPD (bacteremia, meningitis, or other infection of a normally sterile site) occurred in children younger than 5 years of age in the U.S. and an estimated 200 children died due to IPD each year.

The first pneumococcal conjugate vaccine (PCV7) was licensed in the U.S. in 2000 and provided protection against seven *S. pneumoniae* serotypes (4, 9V, 14, 19F, 23F, 18C, and 6B). PCV7 was highly effective and the overall incidence of IPD among children younger than 5 years of age decreased from approximately 99 cases per 100,000 population during 1998-1999 to 21 cases per 100,000 population in 2008.

The reductions in incidence resulted from a 99% decrease in disease caused by the seven serotypes in PCV7 and serotype 6A, a serotype against which PCV7 provides some cross-protection. The decreases were offset partially by increases in invasive disease caused by serotypes not included in PCV7, in particular 19A. In 2008, 61% of IPD cases among children younger than 5 years of age were attributable to the serotypes included in PCV13, with serotype 19A accounting for 43% of cases; PCV7 serotypes caused less than 2% of cases.

PCV13 was licensed in the U.S. in 2010. It protects against the seven serotypes contained in PCV7 plus serotypes 1, 3, 5, 6A, 7F and 19A. This vaccine has been available through the federal Vaccines for Children (VFC) program in California since May 1, 2010 and all VFC purchased PCV7 was to be returned by providers as of April 30, 2010.

Table. Underlying medical conditions that are indications for pneumococcal vaccination among children, by risk group

Risk group	Condition
Immunocompetent children	Chronic heart disease*
	Chronic lung disease†
	Diabetes mellitus
	Cerebrospinal fluid leaks
	Cochlear implant
Children with functional or anatomic asplenia	Sickle cell disease and other hemoglobinopathies Congenital or acquired asplenia, or splenic dysfunction
Children with immunocompromising conditions	HIV infection
	Chronic renal failure and nephrotic syndrome
	Diseases associated with treatment with immunosuppressive drugs or radiation therapy, including malignant neoplasms, leukemias, lymphomas and Hodgkin disease; or solid organ transplantation
	Congenital immunodeficiency§

Source: Advisory Committee on Immunization Practices, 2010.
* Particularly cyanotic congenital heart disease and cardiac failure.
† Including asthma if treated with high-dose oral corticosteroid therapy.
§ Includes B- (humoral) or T-lymphocyte deficiency; complement deficiencies, particularly C1, C2, C3, and C4 deficiency; and phagocytic disorders (excluding chronic granulomatous disease).

http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5911a1.htm?s_cid=rr5911a1_e#Tab2