National Center for Immunization & Respiratory Diseases

Clinical Considerations for Use of PCV15 in Children

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Overview

- Proposed Guidance
  1. Children who have not received PCV13 or PCV15
  2. Children previously vaccinated with PCV13 or PCV15
  3. PPSV23 use for children aged 2–18 years who are at increased risk of pneumococcal disease
  4. Recipients of Hematopoietic Stem Cell Transplant

*Changes from existing recommendations[1,2] for PCV13 use are highlighted in yellow.

1. MMWR 2010. 59(RR11); 1–18
2. MMWR 2013. 62(25); 521–524

Children who have Not Received PCV13 or PCV15

- Either PCV13 or PCV15 is recommended as a 4-dose series at ages 2, 4, 6, and 12–15 months.
- PCV13 and PCV15 can be used interchangeably.
- Interruption of the vaccination schedule does not require reinstitution of the entire series or the addition of extra doses.

No previous PCV: Infants Aged 2–6 Months

- The primary infant series consists of 3 doses of PCV (either PCV13 or PCV15). Infants receiving their first dose at age ≤6 months should receive 3 doses of PCV at intervals of approximately 8 weeks (the minimum interval is 4 weeks). The fourth (booster) dose is recommended at age 12--15 months and at least 8 weeks after the third dose.
- Newborns should begin the schedule at age 2 months, although the first dose can be administered as early as 6 weeks. For prematurely born infants (i.e., <37 weeks' gestation) who are medically stable enough to be vaccinated, PCV should be administered at the recommended chronologic age concurrent with other routine vaccinations.

No previous PCV: Infants Aged 7–11 Months

- Three doses of PCV (either PCV13 or PCV15) are recommended. The first 2 doses should be administered with an interval of at least 4 weeks between doses. The third dose should be administered at age 12--15 months, at least 8 weeks after the second PCV dose.

No previous PCV: Children Aged 12–23 months

- Two doses of PCV (either PCV13 or PCV15) are recommended, with an interval of at least 8 weeks between doses.

No previous PCV: Children Aged ≥24 months

- Unvaccinated healthy children aged 24--59 months should receive a single dose of PCV (either PCV13 or PCV15).
- Unvaccinated children aged 24--71 months with underlying medical conditions should receive 2 doses of PCV with an interval of at least 8 weeks between doses.
- Routine use of PCV is not recommended for healthy children aged ≥5 years.

No previous PCV: Children Aged 6–18 Years with an immunocompromising condition

- Children aged 6–18 years who have not received either PCV13 or PCV15 previously and are at increased risk for invasive pneumococcal disease because of cochlear implant, cerebrospinal fluid leaks, or immunocompromising conditions such as HIV-infection or anatomic or functional asplenia, should receive a single dose of PCV13 or PCV15 regardless of whether they have previously received PPSV23, even if they have received PCV7.

Children Previously Vaccinated with PCV13 or PCV15

(Incomplete or Complete PCV Vaccination)

Incomplete PCV13/15: Children aged <24 months

- Infants and children aged <24 months who have received ≥1 dose of PCV (either PCV13 or PCV15) should complete the vaccination series with either PCV13 or PCV15 using the previously recommended schedule.

Incomplete PCV13/15: Children aged ≥24 months

- For all healthy children aged 24--59 months with any incomplete PCV schedule before age 24 months, 1 dose of PCV is recommended.
- For children aged 24--71 months with underlying medical conditions:
  - Who have received any incomplete schedule of <3 doses* of PCV before age 24 months, 2 doses of PCV are recommended.
  - Who have received a total of 3 doses of PCV, all 3 doses before 12 months, a single dose of PCV is recommended. The minimum interval between doses is 8 weeks.

*Refer to Table 3 for the recommended number of PCV doses and schedule before age 24 months. If a child received 2 doses of PCV between age 12–23 months, the child has received a complete PCV schedule and does not require additional PCV doses, even though the total number of PCV doses given is 2.

Incomplete PCV13/15: Children aged ≥24 months

- For all healthy children aged 24–59 months with any incomplete PCV schedule before age 24 months, 1 dose of PCV is recommended.
- For children aged 24–71 months with underlying medic Footnote added
  - Who have received any incomplete schedule of <3 doses* of PCV before age 24 months, 2 doses of PCV are recommended.
  - Who have received a total of 3 doses of PCV, all 3 doses before 12 months, a single dos Previously "any incomplete schedule of 3 doses" erval between doses is 8 weeks.

*Refer to Table 3 for the recommended number of PCV doses and schedule before age 24 months. If a child received 2 doses of PCV between age 12–23 months, the child has received a complete PCV schedule and does not require additional PCV doses, even though the total number of PCV doses given is 2.

Complete PCV13 Vaccination

- A supplemental dose of PCV15 is not indicated for children who have received 4 doses of PCV13 or another age-appropriate, complete PCV13 schedule.

PPSV23 use for children aged 2–18 years who are at increased risk of pneumococcal disease

- Children aged ≥2 years with underlying medical conditions should receive PPSV23 after completing all recommended doses of PCV (either PCV13 or PCV15). These children should receive 1 dose of PPSV23 at age ≥2 years and at least 8 weeks after the most recent dose of PCV.
- Children who have received PPSV23 previously also should receive recommended PCV doses ≥8 weeks after the PPSV23 dose.

Revaccination with PPSV23 Among Children with Immunocompromising Conditions

- Children aged ≥2 years who have anatomic or functional asplenia including SCD, HIV infection, or other immunocompromising condition, should receive a second dose of PPSV23 ≥5 years after the first dose of PPSV23 (**Table 1**). No more than 2 PPSV23 doses are recommended before age 65 years.

TABLE 1. Underlying medical conditions with risk-based recommendations for 13- or 15-valent pneumococcal conjugate vaccine (PCV13 or PCV15)‡ or PPSV23

Risk group	Condition	PCV for children aged <6 years	PCV for children aged 6–18 years	PPSV23 for children aged ≥2 years	
		Recommended	Recommended	Recommended	Single revaccination 5 years after first dose
Immunocompetent children	Chronic heart disease*	X		X	
	Chronic lung disease†	X		X	
	Diabetes mellitus	X		X	
	Cerebrospinal fluid leaks	X	X	X	
	Cochlear implant	X	X	X	
Children with immunocompromising conditions	Sickle cell disease and other hemoglobinopathies	X	X	X	X
	Congenital or acquired asplenia, or splenic dysfunction	X	X	X	X
	HIV infection	X	X	X	X
	Chronic renal failure and nephrotic syndrome	X	X	X	X
	Diseases associated with treatment with immunosuppressive drugs or radiation therapy, including malignant neoplasms, leukemias, lymphomas and Hodgkin disease; or solid organ transplantation	X	X	X	X
	Congenital immunodeficiency§	X	X	X	X

Source: Advisory Committee on Immunization Practices, 2010.

‡ Either PCV13 or PCV15 may be used

* 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).

Recipients of Hematopoietic Stem Cell Transplant

Recipients of Hematopoietic Stem Cell Transplant

- Recipients of hematopoietic stem cell transplants (HSCT) are recommended to receive 3 sequential doses of PCV followed by a dose of PPSV23 beginning 3–6 months after the transplant[1]

1. Best Practices Guidance of the Advisory Committee on Immunization Practices. https://www.cdc.gov/vaccines/hcp/acip-recs/general-recs/immunocompetence.html

Thank you

For more information, contact CDC
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TTY: 1-888-232-6348 www.cdc.gov