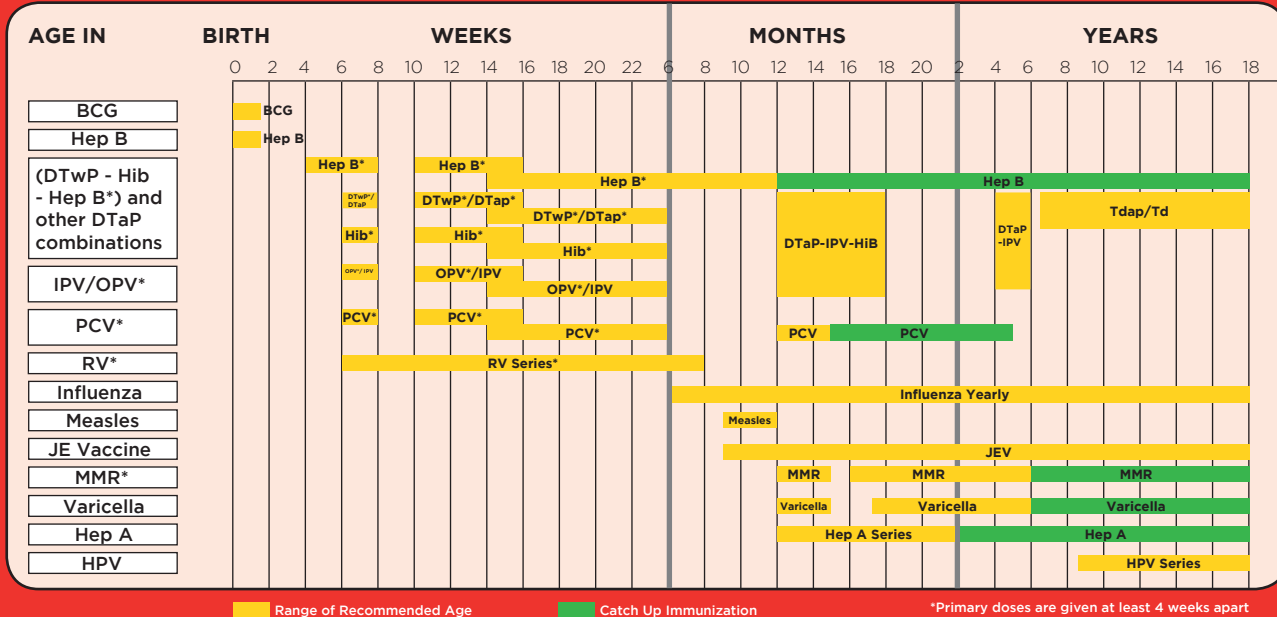


# Childhood Immunization Schedule 2018



## DISCLAIMER:

The Childhood Immunization Schedule presents recommendations for immunization for children and adolescents based on updated literature review, experience and premises current at the time of publication. The PPS, PIDSP and PFV acknowledge that individual circumstances may warrant a decision differing from the recommendations given here. Physicians must regularly update their knowledge about specific vaccines and their use because information about safety and efficacy of vaccines and recommendations relative to their administration continue to develop after a vaccine is licensed.

### Vaccines in the Philippine National Immunization Program (NIP)

The following vaccines are in the 2018 NIP:

- BCG, monovalent Hep B, Pentavalent vaccine (DTwP-Hib-HepB), bivalent OPV, IPV, PCV, MMR, MR, Td and HPV.

### Recommended Vaccines

These are vaccines not included in the NIP which are recommended by the Philippines Pediatric Society (PPS), Pediatric Infectious Disease Society of the Philippines (PIDSP) and the Philippine Foundation for Vaccination (PFV).

# ANNOTATIONS

## **Bacille Calmette-Guérin (BCG)**

- Given intradermally (ID)
- The dose of BCG is 0.05 ml for children < 12 months of age and 0.1 ml for children > 12 months of age
- Given at the earliest possible age after birth preferably within the first 2 months of life
- For healthy infants and children > 2 months who were not given BCG at birth, PPD prior to BCG vaccination is not necessary. However, PPD is recommended prior to BCG vaccination if any of the following is present:
  - Congenital TB
  - History of close contact to known or suspected infectious TB cases
  - Clinical findings suggestive of TB and/or chest x-ray suggestive of TB

In the presence of any of these conditions, an induration of  $\geq$  5mm is considered positive and BCG is no longer recommended.

## **Hepatitis B Vaccine (HBV)**

- Given intramuscularly (IM)
- Administer the first dose of monovalent HBV to all newborns >2kgs within 24 hours of life.
- A 2nd dose is given 1-2 months after the birth dose
- The final dose is administered not earlier than 24 weeks of age. Another dose is needed if the last dose was given at age <24 weeks.

### **For infants born to HBsAg (+) mothers:**

- Administer HBV and HBIG (0.5ml) within 12 hours of life. HBIG should be administered not later than 7 days of age if not immediately available.

### **For infants born to mothers with unknown HBsAg status:**

- with birth weight >2kgs, administer HBV within 12 hours of birth and determine the mother's HBsAg as soon as possible. If HBsAg (+), administer also HBIG not later than 7 days of age.
- with birth weight <2kgs, administer HBIG in addition to HBV within 12 hours of life.

### **For preterm infants:**

- If born to HBsAg (-) mothers and medically stable, the 1st dose of HBV maybe given at 30 days of chronological age regardless of weight, and this can be counted as part of the 3-dose primary series.
- For those <2 kgs, the 1st dose received at birth is not counted as part of the vaccine series. Additional 3 HBV doses are needed.

## **Haemophilus influenzae Type b Conjugate Vaccine (Hib)**

- Given intramuscularly (IM)
  - Given as a 3-dose primary series with a minimum age of 6 weeks and a minimum interval of 4 weeks
  - A booster dose is given between 12-15 months of age with an interval of 6 months from the 3rd dose
- Refer to Vaccines for Special Groups for Hib recommendation in high risk children*

## **Diphtheria and Tetanus Toxoid and Pertussis Vaccine (DTP)**

- Given intramuscularly (IM)
- Given at a minimum age of 6 weeks with a minimum interval of 4 weeks
- Complete a 5-dose series at ages 2, 4, 6, 15 through 18 months, and 4 through 6 years. The recommended interval between the 3rd and 4th dose is 6 months, but a minimum interval of 4 months is valid
- The 5th dose of DTaP vaccine may not be given if the 4th dose was administered at age 4 years or older.

## **Inactivated Poliovirus Vaccine (IPV)**

- Given intramuscularly (IM)
- Usually given in combination with DTaP and Hib, with or without Hep B
- Given at a minimum age of 6 weeks with a minimum interval of 4 weeks
- The primary series consists of 3 doses
- A booster dose should be given on or after the 4th birthday and at least 6 months from the previous dose

## **Rotavirus Vaccine (RV)**

- Given per orem (PO)
- Given at a minimum age of 6 weeks with a minimum interval of 4 weeks between doses. The last dose should be administered not later than 32 weeks of age.
- The monovalent human rotavirus vaccine (RV1) is given as a 2-dose series and the pentavalent human bovine rotavirus vaccine (RV5) is given as a 3-dose series.

## **Pneumococcal Conjugate Vaccines (PCV)**

- Given intramuscularly (IM)
- Given at a minimum age of 6 weeks for PCV10 and PCV 13
- Primary vaccination consists of 3 doses with an interval of at least 4 weeks between doses plus a booster dose given 6 months after the 3rd dose.
- Healthy children 2 to 5 years old who do not have previous PCV vaccination may be given 1 dose of PCV 13, or 2 doses of PCV 10 at least 8 weeks apart

*Refer to Vaccines for Special Groups for Pneumococcal Vaccine recommendation in high-risk children.*

## **Influenza Vaccine (Trivalent/Quadrivalent Influenza Vaccine)**

- Trivalent influenza vaccine (TIV) given intramuscularly (IM) or subcutaneously (SC)
- Quadrivalent influenza vaccine (QIV) given intramuscularly (IM)
- Given at a minimum age of 6 months
- The dose of influenza vaccine is 0.25 ml for children 6 months to 35 months and 0.5 ml for children 36 months to 18 years

- Children 6 months to 8 years receiving influenza vaccine for the 1st time should receive 2 doses separated by at least 4 weeks
- If only one dose was given during the previous influenza season, give 2 doses of the vaccine then one dose yearly thereafter
- Children aged 9 to 18 years should receive one dose of the vaccine yearly
- Annual vaccination should begin in February but may be given throughout the year

## **Measles Vaccine**

- Given subcutaneously (SC)
- Given at the age of 9 months, but may be given as early as 6 months of age in cases of outbreaks as declared by public health authorities
- If monovalent measles is not available, MMR may be given

## **Japanese Encephalitis Vaccine (JE)**

- Given subcutaneously (SC)
- Given at a minimum age of 9 months
- Children 9 months to 17 years of age should receive one primary dose followed by a booster dose 12-24 months after the primary dose
- Individuals 18 years and older should receive a single dose only

## **Measles-Mumps-Rubella (MMR) Vaccine**

- Given subcutaneously (SC)
- Given at a minimum age of 12 months
- 2 doses of MMR vaccine are recommended
- The 2nd dose is usually given from 4-6 years of age but may be given at an earlier age with a minimum of 4 weeks interval between doses.

## **Varicella Vaccine**

- Given subcutaneously (SC)
- Given at a minimum age of 12 months
- 2 doses of varicella vaccine are recommended
- The 2nd dose is usually given at 4-6 years of age, but may be given earlier at an interval of 3 months from the first dose.
- If the 2nd dose was given 4 weeks from the first dose, it is considered valid.
- For children 13 years and above, the recommended minimum interval between doses is 4 weeks.

## **Hepatitis A Vaccine (HAV)**

- Given intramuscularly (IM)
- Given at a minimum age of 12 months
- 2 doses of the vaccine are recommended
- The 2nd dose is given at least 6 months from the 1st dose

## **Measles-Mumps-Rubella-Varicella Vaccine (MMRV)**

- Given subcutaneously (SC)
- Given at a minimum age of 12 months
- MMRV may be given as an alternative to separately administered MMR and Varicella vaccines
- The maximum age is 12 years
- The recommended minimum interval between doses is 3 months

## **Human Papillomavirus Vaccine (HPV)**

- Given intramuscularly (IM)
- For ages 9-14 years, a 2-dose series is recommended
  - Bivalent HPV (2vHPV), quadrivalent (4vHPV) or nonavalent (9vHPV) given at 0 and 6 months
  - If the interval between the 1st and 2nd dose is less than 6 months a 3rd dose is needed. The minimum interval between the 2nd and 3rd dose is 3 months.
- For ages 15 years and older, a 3-dose series is recommended.
  - Bivalent HPV (2vHPV), quadrivalent (4vHPV) or nonavalent (9vHPV) at 0, 2 and 6 months.
  - The minimum interval between the 1st and the 2nd dose is 1 month and the minimum interval between the 2nd and 3rd dose is 3 months. The 3rd dose should be given at least 6 months from the 1st dose.

For males 9-18 years of age, a 4vHPV and 9vHPV can be given for the prevention of anogenital warts and anal cancer

## **Tetanus and Diphtheria Toxoid (Td)/ Tetanus and Diphtheria Toxoid and Acellular Pertussis Vaccine (Tdap)**

- Given intramuscularly (IM)
- For children who are fully immunized, Td booster doses should be given every 10 years.
- For children aged > 7 years old, a single dose of Tdap can be given and can replace due Td. It can be administered regardless of the interval since the last tetanus and diphtheria toxoid containing vaccine. Subsequent doses are given as Td

\*Fully immunized is defined as 5 doses of DTP or 4 doses of DTP if the 4th dose was given on or after the 4th birthday

### **For pregnant adolescents**

- Fully immunized:
  - administer 1 dose of Tdap vaccine during 27 to 36 wks AOG regardless of previous Td or Tdap vaccination
- Unimmunized:
  - administer a 3 dose tetanus-diphtheria containing vaccine (Td) following a 0-1-6 month schedule. Tdap should replace one dose of Td given during 27 to 36 wks AOG

# ANNOTATIONS: VACCINES FOR HIGH RISKS / SPECIAL GROUPS 2018

## Pneumococcal Conjugate Vaccine (PCV)/ Pneumococcal Polysaccharide Vaccine (PPSV23)

- Given intramuscularly (IM)
  - All recommended PCV doses should be given prior to PPSV23 if possible. The two vaccines should not be co-administered. If a dose of PPSV23 is inadvertently given earlier than the recommended interval, the dose need not be repeated.
  - The following tables summarizes the indication and schedule of PCV/PPSV administration to children with high risk conditions according to age group:

SCHEDULE OF PCV 13-PPSV23 VACCINATION SEQUENCE	INDICATION
Age: 24 mos to 5 years •Administer 1 dose of PCV13 if any incomplete schedule of 3 doses of PCV13 was received previously. •Administer 2 doses of PCV13 at least 8 weeks apart if unvaccinated or any incomplete schedule of fewer than 3 doses of PCV13 was received previously. •The minimum interval between doses of PCV13 is 8 weeks. •For children with no history of PPSV23 vaccination, administer PPSV23 at least 8 weeks after the most recent dose of PCV13.	•Chronic heart disease, particularly cyanotic congenital heart disease and cardiac failure •Chronic lung disease, including asthma if treated with high-dose oral corticosteroid therapy •Diabetes mellitus •Cerebrospinal fluid leaks •Cochlear implant(s) •Sickle cell disease and other hemoglobinopathies •Congenital or acquired asplenia, or splenic dysfunction •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 (includes B- (humoral) or T-lymphocyte deficiency, complement deficiencies (particularly C1, C2, C3, and C4 deficiencies), and phagocytic disorders (excluding chronic granulomatous disease)
Age: 6 yrs to 18 years •Administer 1 dose of PCV13 if they have not previously received this vaccine, regardless of whether the previous vaccine received was PCV7 or PPSV 23 Children aged 2 years to 64 years old, with any 1 of the listed chronic medical conditions should get 1 dose of PPSV23	•Chronic heart disease, including heart failure and cardiomyopathies •Chronic lung disease, including chronic obstructive pulmonary disease, emphysema, and asthma •Diabetes mellitus •Cerebrospinal fluid leaks •Cochlear implant(s) •Alcoholism •Chronic liver disease
Children aged 2 years to 64 years old, with any 1 of the listed chronic medical conditions should get 1 dose of PPSV23	•Chronic heart disease, including heart failure and cardiomyopathies •Chronic lung disease, including chronic obstructive pulmonary disease, emphysema, and asthma •Diabetes mellitus •Cerebrospinal fluid leaks •Cochlear implant(s) •Alcoholism •Chronic liver disease
Children 2 years to 64 years old, with any 1 of the listed immunocompromising conditions should get 2 doses of PPSV23, 5 years apart	Congenital or acquired immunodeficiencies includes B- (humoral) or T-lymphocyte deficiency, complement deficiencies (particularly C1, C2, C3, and C4 deficiencies), and phagocytic disorders (excluding chronic granulomatous disease) • HIV infection • Chronic renal failure or nephrotic syndrome • Leukemia or lymphoma • Hodgkin's disease • Generalized malignancy • Iatrogenic immunosuppression (diseases requiring treatment with immunosuppressive drugs, including long-term systemic corticosteroids and radiation therapy) • Solid organ transplant • Multiple myeloma

## Hemophilus influenzae Type b Conjugate Vaccine (Hib)

- Given intramuscularly (IM)
- Indications for children with the following high risk conditions:
  - Chemotherapy recipients, anatomic/functional asplenia including sickle cell disease, HIV infection, immunoglobulin or early component complement deficiency
- Children aged 12-59 months:
  - Unimmunized\* or with one Hib vaccine dose received before age 12 months, give 2 additional doses 8 weeks apart
  - With ≥ 2 Hib vaccine doses received before age 12 months, give 1 additional dose
- For children ≤ 5 years old who received a Hib vaccine dose(s) during or within 14 days of starting chemotherapy or radiation treatment, repeat the dose(s) of Hib vaccine at least 3 months after completion of therapy
- For children who are hematopoietic stem cell transplant recipients, revaccination with 3 doses of Hib vaccine given 4 weeks apart, starting 6-12 months after transplant, is recommended regardless of vaccination history.
- Unimmunized\* children ≥ 15 months of age and undergoing elective splenectomy should be given 1 dose of Hib-containing vaccine at least 14 days before the procedure
- Unimmunized\* children 5-18 years old and with either anatomic or functional asplenia (including sickle cell disease) or HIV infection, should be given 1 dose of Hib vaccine

\* Unimmunized children are those without a primary series and booster dose or those without at least one dose of the vaccine after 14 months of age

## Meningococcal Vaccines

- Tetravalent meningococcal (ACYW-135) conjugate vaccine MCV4-D, MCV4-TT, MCV4-CRM given intramuscularly (IM)
- Indicated for those at high risk for invasive disease:
  - Persistent complement component deficiencies (including those with inherited or chronic deficiencies in C3, C5-9, properdin, factor D, factor H), anatomic/functional asplenia (including sickle cell disease), HIV, travelers to or resident of areas where meningococcal disease is hyperendemic or epidemic, including countries in the African meningitis belt or the Hajj, or belonging to a defined risk group during a community or institutional meningococcal outbreak

## Dosing schedule:

- MCV4-D: minimum age is 9 months. For children 9-23 months give 2 doses 3 months apart. For children 2 years and above give one dose, except in cases of asplenia, HIV and persistent complement component deficiency where 2 doses, 8 weeks apart are recommended.
- MCV4-TT given to children 12 months and above as a single dose
- MCV4-CRM given to children 2 years and above as a single dose
- Revaccinate with a MCV4 vaccine every 5 years as long as the person remains at increased risk of infection
- Co-administration of MCV4 and other vaccines
  - MCV4-D and PCV13
    - If MCV4-D is administered to a child with asplenia (including sickle cell disease) or HIV infection, do not administer MCV4-D until age 2 years and at least 4 weeks after the completion of all PCV13 doses
  - MCV4-D and Tdap
    - If MCV4-D is to be administered to a child at high risk for meningococcal disease, it is recommended that MCV4-D be given either before or at the same time as DTaP.
- MCV4-TT with Tetanus toxoid (TT) containing vaccines
  - Whenever feasible, MCV4-TT should be co-administered with TT-containing vaccines, or administer MCV4-TT 1 month before the other TT-containing vaccines

## Rabies Vaccine

- Given intramuscularly (IM) or intradermally (ID)
- Recommended regimens for pre-exposure prophylaxis:
  - Intramuscular regimen (IM):
    - Purified Vero Cell Rabies (PVRV) 0.5 ml OR
    - Purified Chick Embryo Cell Vaccine (PCECV) 1 ml given on days 0, 7, 21 or 28
  - Intradermal regimen (ID): PVRV or PCECV 0.1 ml given on days 0, 7, 21 or 28
- A repeat dose should be given if the vaccine is inadvertently given subcutaneously.
- Rabies vaccine should never be given in the gluteal area since absorption is unpredictable.
- In the event of subsequent exposures, those who have completed 3 doses of pre-exposure prophylaxis regardless of the interval between exposure and last dose of the vaccine will require only booster doses given on day 0 and 3. Booster doses may be given IM (0.5 ml PVRV or 1 ml PCECV) or ID (0.1 ml of PVRV or PCECV). There is no need to give rabies immune globulin.

## Typhoid Vaccine

- Given intramuscularly (IM)
- Given at a minimum age of 2 years old with revaccination every 2-3 years
- Recommended for travelers to areas where there is a risk for exposure and for outbreak situations as declared by public health authorities

## Cholera Vaccine

- Given per orem (PO)
- Given at a minimum age of 12 months as a 2-dose series two weeks apart.
- Recommended for outbreak situations and natural disasters as declared by public health authorities

## Hepatitis A Vaccine

- Given intramuscularly (IM)
- Administer 2 doses of Hepatitis A vaccine at least 6 months apart to unvaccinated individuals who are at increased risk for infection:
  - Travelers to or are working in countries with intermediate or high endemicity of infection,
  - Men having sex with men (MSM)
  - Users of injection and non-injection illicit drugs,
  - Working with HAV infected primates or with HAV in research laboratories,
  - With clotting factor disorders and chronic liver disease

## Human Papillomavirus Vaccine (HPV)

- Given intramuscularly (IM)
- Give 3 doses of HPV vaccine following the 0, 1-2, and 6 month schedule, regardless of age at vaccine initiation to the following:
  - Children with history of sexual abuse or assault starting at age 9 years
  - Immunocompromised children including those with HIV infection
- HPV vaccination is not recommended during pregnancy. If HPV vaccine is inadvertently given during pregnancy, delay the remaining doses until after pregnancy. Pregnancy testing is not necessary before initiating HPV vaccination.

## Dengue Vaccine

Recommendation under review, pending re-labelling of the product

## SUMMARY TABLE 2018: Immunization of Pre-Adolescents and Adolescents (7 to 18 yrs.old)

Vaccine	Range of Recommended Age	Dose(s) Needed	Schedule of Immunization	Route of Administration	Precautions & Contradiction
Hep B Vaccine	Unvaccinated 7-18 yrs. old	3	0,1,6 months	IM	• Severe allergic reaction to vaccine component • Moderate to severe illness
Hep A Vaccine	Unvaccinated 7-18 yrs. old	2	2nd dose given at least 6 months from the 1st dose	IM	• Severe allergic reaction to vaccine component • Moderate to severe illness
MMR	Unvaccinated 7-18 yrs. old	2	4 weeks interval between doses	SC	• Severe allergic reaction to vaccine component • Pregnancy • Immunosuppression • Recent receipt of blood products • Moderate to severe illness
	Incompletely vaccinated 7-18 yrs. old	1	2nd dose given anytime but at least 4 weeks from 1st dose		
Varicella	Unvaccinated 7-12 yrs. old	2	Minimum interval between doses is 3 months	SC	• Severe allergic reaction to vaccine component • Pregnancy • Immunosuppression • Recent receipt of blood products • Moderate to severe illness
	Unvaccinated ≥ 13 yrs. old	2	Minimum interval between doses is one month		
	Incompletely vaccinated 7-18 yrs. old	1	Given anytime 7-12 yrs. old at least 3 mos. from the 1st dose, 13 yrs. old at least 1 month from the 1st dose		
Influenza Vaccine	9-18 yrs. old	1	Give annually beginning February	IM/SC	• Severe allergic reaction to vaccine component • Moderate to severe illness • History of Guillain-Barre syndrome following a previous dose
Td/Tdap	Unvaccinated 7-18 yrs. old	3	0,1 and 6 months Tdap preferably as the 1st dose then Td for the remaining doses	IM	• Severe allergic reaction to vaccine component, • Moderate to severe illness
	Incompletely vaccinated 7-18 yrs. old	1-2	One dose Tdap then Td for remaining dose		
	Fully vaccinated 7-18 yrs. old (Fully vaccinated defined as 5 doses of DTaP or 4 doses of DTaP if the 4th dose was administered on or after the 4th birthday)	1	1 dose Tdap then Td every 10 years		
HPV: Bivalent HPV (2vHPV)	Females: 15-18 yrs. old	3	0,1,6 months	IM	• Severe allergic reaction to vaccine component • Moderate to severe illness • If found to be pregnant after starting immunization, delay remaining doses until completion of pregnancy
Quadrivalent HPV (4vHPV)/Nonavalent HPV (9vHPV)	Females: 15-18 yrs. old Males: 15-18 yrs. old	3	0,2 and 6 months		
For Females: (2vHPV)/ Quadrivalent HPV (4vHPV)/ Nonavalent HPV (9vHPV) For Males: 4vHPV/9vHPV	9-14 yrs. old	2	0,6-12 months	IM	• Severe allergic reaction to vaccine component • Moderate to severe illness • If found to be pregnant after starting immunization, delay remaining doses until completion of pregnancy