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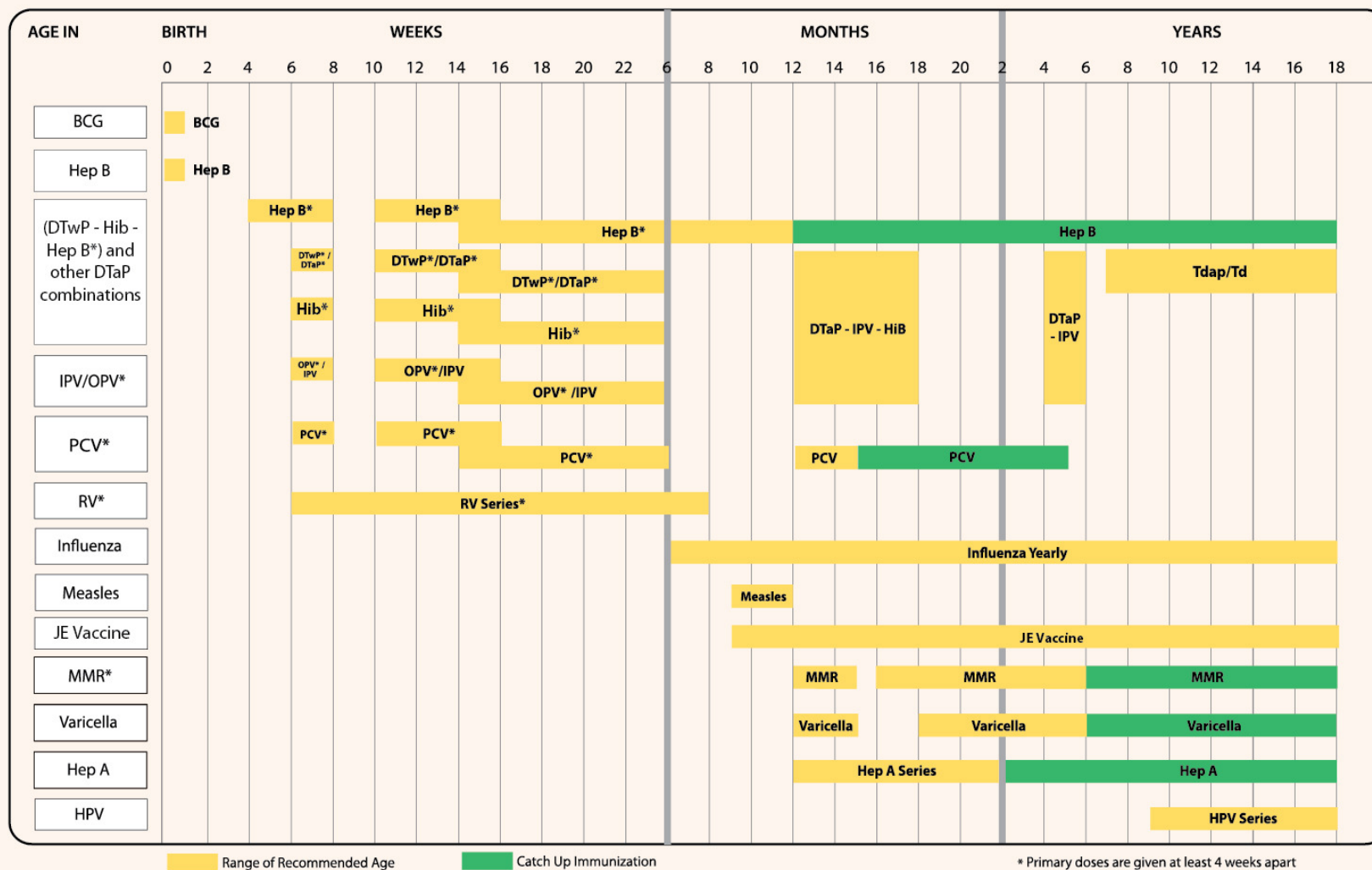
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Childhood Immunization Schedule 2016



Childhood Immunization Schedule 2016



The National Immunization Program (NIP) consists of the following antigens:

- BCG vaccine, single dose given at birth
- Monovalent Hepatitis B vaccine given at birth
- DPT-Hib-Hep B vaccines, 3 doses given at 6-10-14 weeks of age
- Oral polio vaccine(OPV), 3 doses given at 6-10-14 weeks of age.

A single dose of Inactivated polio vaccine (IPV) is given with the third dose of OPV at 14 weeks.

- Pneumococcal conjugate vaccine (PCV), 3 doses given at 6-10-14 weeks of age
- Measles containing vaccine (either monovalent or MMR) given at 9 months of age
- Measles-Mumps-Rubella (MMR) vaccine given at 12 months of age
- Rotavirus vaccine given at a minimum age of 6 weeks with minimum interval of 4 weeks between doses. The last dose should be administered not later than 32 weeks.

A school based immunization program to provide catch-up doses for school children and adolescents has been established. Measles-Rubella (MR) vaccine and Tetanus-Diphtheria (Td) vaccines are administered to Grade 1 and Grade 7 students enrolled in public schools.

Human Papillomavirus Vaccine (HPV) shall be given to female children 9-10 years old at health facilities in priority provinces. Quadrivalent HPV 2 doses are given at 0, 6 months.

DISCLAIMER:

The Childhood Immunization Schedule presents recommendations for immunization for children and adolescents based on the knowledge, experience and premises current at the time of publication. The schedule represents a consensus with which physicians may at times disagree. No claim is made for infallibility, and the PPS, PIDSP and PFV acknowledge that individual circumstances may warrant a decision differing from the recommendations given here. The recommendations are not absolute. 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.

OTHER VACCINES:

Bacillus 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 age

For healthy infants and children > 2 months who are 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:

- Suspected congenital TB
- History of close contact to known or suspected infectious 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 > 5mm is considered positive

Hepatitis B Vaccine (HBV)

Given intramuscularly (IM)

The first dose is given at birth or within the 1st 12 hours of life. The minimum interval between doses is 4 weeks. The final dose is administered not earlier than age 24 weeks. Another dose is needed if the last dose was given at age < 24 weeks.

For preterm infants:

- If born to HBsAg (-) mothers and medically stable, the 1st dose of HBV may be given at 30 days of chronological age regardless of weight, and this can be counted as part of the 3-dose primary series.
- Another dose of HBV is needed for those < 2 kgs whose 1st dose was received at birth

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

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

The recommended interval between the 3rd and 4th dose is 6 months, but a minimum of 4 months is valid.

The 5th dose may not be given if the 4th dose was administered at age 4 years or older.

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

Inactivated Poliovirus Vaccine (IPV)

Given intramuscularly (IM)

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

Pneumococcal Conjugate Vaccines (PCV)

Given intramuscularly (IM)

Given at a minimum age of 6 weeks

Primary vaccination of PCV 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 have no previous PCV vaccination may be given 1 dose of PCV13 or 2 doses of PCV10 at least 8 weeks apart.

Routine use of PCV is not recommended for healthy children 5 years and above.

Refer to Vaccines for Special Groups for Pneumococcal vaccine recommendation in high risk children

Rotavirus Vaccine (RV)

Given per os (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.

Influenza Vaccine (Trivalent/Quadrivalent)

Trivalent influenza vaccine given intramuscularly (IM) or subcutaneously (SC)

Quadrivalent influenza vaccine 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 first time should receive 2 doses separated by at least 4 weeks. If only 1 dose was given during the previous influenza season, give 2 doses of the vaccine then 1 dose yearly thereafter.

Children aged 9 to 18 years should receive 1 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.

In lieu of monovalent measles vaccine, MMR may be given if recommended by public health authorities.

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 Vaccine (MMR)

Given subcutaneously (SC)

Given at a minimum age of 12 months MMR may be given at an earlier age if recommended by public health authorities.

The minimum interval between doses is at least 4 weeks:

Two doses of MMR are recommended. The 2nd dose is usually given from 4-6 years of age but may be given earlier

Children below 12 months of age given any measles containing vaccine (Measles, MR, MMR) should be given 2 additional doses

Varicella Vaccine

Given subcutaneously (SC)

Given at a minimum age of 12 months

Two doses of varicella vaccine are recommended. The 1st dose is given at 12-15 months of age. The 2nd dose is usually given at 4-6 years of age.

- For children below 13 years old the recommended minimum interval between doses is 3 months. However, if the 2nd dose was administered at least 4 weeks after the 1st dose, it is considered valid.
- For children 13 years and above, the recommended minimum interval between doses is 4 weeks.

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 vaccine

The maximum age is 12 years

The recommended minimum interval between doses is 3 months

Hepatitis A Vaccine

Given intramuscularly (IM)

Given as a 2 dose series at a minimum age of 12 months

A 2nd dose is given at least 6 months from the 1st dose

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. A single dose of Tdap can be given in place of a due Td dose and can be administered regardless of the interval since the last tetanus and diphtheria toxoid containing vaccine

*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 fully immunized pregnant adolescent, administer one dose of Tdap vaccine anytime after 20 weeks age of gestation

For the unimmunized pregnant adolescent, give the 3-dose tetanus-diphtheria containing vaccine (Td/Tdap) following a 0-1-6 month schedule. Tdap should replace one dose of Td given preferably after 20 weeks age of gestation

Human Papillomavirus Vaccine (HPV)

Given intramuscularly (IM)

Primary vaccination consists of a 3-dose series with the minimum age of 9 years.

The recommended schedule is as follows:

- Bivalent HPV at 0, 1 and 6 months
- Quadrivalent HPV at 0, 2, and 6 months

The minimum interval between the 1st and the 2nd dose is at least 1 month and the minimum interval between the 2nd and the 3rd dose is at least 3 months. The 3rd dose should be given at least 6 months from the 1st dose.

A 2-dose schedule is an option for girls 9 to 14 years of age, for both bivalent and quadrivalent vaccines. The doses are given at least 6 months apart.

The quadrivalent HPV can be given to males 9-18 years of age for the prevention of anogenital warts.

VACCINES FOR HIGH RISK / SPECIAL GROUPS

Pneumococcal Conjugate Vaccine (PCV)/ Pneumococcal Polysaccharide Vaccine (PPSV)

Given intramuscularly (IM)

Indications for children with high risk medical conditions: chronic heart, lung, kidney disease, DM, CSF leak, cochlear implant, sickle cell disease and other hemoglobinopathies, anatomic and functional asplenia, HIV and congenital immunodeficiency, immunosuppression, malignancy, and solid organ transplantation

Children > 2 through 5 years of age:

- Give one dose of PCV13 if an incomplete schedule of 3 doses of any PCV was administered previously
- Give 2 doses of PCV13 at least 8 weeks apart if unvaccinated or any incomplete schedule of less than 3 doses of any PCV was administered previously
- Give a supplemental dose of PCV13 if 4 doses of PCV7 or other age appropriate complete PCV7 series was given

For children with no history of PPSV vaccination, give PPSV at least 8 weeks after the most recent PCV13

Children 6 through 18 years of age:

- Give one dose of PCV13 followed by one dose of PPSV at least 8 weeks later if with no prior PCV or PPSV immunization
- Give one dose of PPSV at least 8 weeks after the most recent PCV13 if with previous PCV13 but without PPSV immunization
- A single dose of PPSV is given at least 8 weeks after the last dose of PCV 13 in children with no history of PPSV immunization

A single revaccination with PPSV should be administered 5 years after the 1st dose of PPSV to children with high risk medical conditions

Haemophilus influenzae Type b Conjugate Vaccine (Hib)

Given intramuscularly (IM)

Indications for children with high risk conditions : chemotherapy recipients, anatomic/functional asplenia including sickle cell disease, HIV infection, immunoglobulin or early complement deficiency

Children aged 12-59 months :

- Unimmunized* or with one dose of Hib vaccine received before age 12 months, give 2 additional doses 8 weeks apart
- Given ≥ 2 doses of Hib vaccine before age 12 months, give one additional dose

Children ≤ 5 years old who received a Hib booster dose during or within 14 days of starting chemotherapy/radiation treatment should receive a repeat dose of the vaccine at least 3 months after completion of therapy

Children who are hematopoietic stem cell transplant recipients should be reimmunized with 3 doses of Hib vaccine, 6-12 months after transplant regardless of vaccination history: doses should be given 4 weeks apart

Unimmunized children aged 15 months and older undergoing elective splenectomy, give one dose of Hib containing vaccine at least 14 days before procedure

Give one dose of Hib vaccine to unimmunized children 5-18 years old who have anatomic/functional asplenia (including sickle cell disease) and HIV infection

* 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 Vaccine

Given intramuscularly (IM) or subcutaneously (SC)

Tetravalent meningococcal (ACYW-135) conjugate vaccine MCV4-D, MCV4-TT, MCV4-CRM given intramuscularly
Tetravalent meningococcal polysaccharide vaccine (MPSV4) given intramuscularly (IM)/subcutaneously (SC)

Indicated for those at high risk for invasive disease: persistent complement deficiencies, anatomic/functional asplenia, HIV, travellers to or resident of areas where meningococcal disease is hyperendemic or epidemic 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.
- 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
MPSV4 given to children 2 years and above as a single dose. If MPSV4 is used for high risk individuals as the 1st dose, a 2nd dose using MCV4 should be given 2 months later. Booster doses of MPSV4 are not recommended.

MCV4-D and PCV13 should be given at least 4 weeks apart

Rabies Vaccine

Given intramuscularly (IM) or intradermally (ID)

Recommended regimens for pre-exposure prophylaxis:

- Intramuscular regimen: Purified Vero Cell Rabies Vaccine (PVRV) 0.5 ml or Purified Chick Embryo Cell Vaccine (PCECV) 1 ml given on days 0,7,21 or 28
- Intradermal regimen: 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 travellers to areas where there is a risk of 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 health authorities

SUMMARY TABLE: Immunization of Teens and Pre-teens 2016 (7 to 18 yrs old)

Vaccine	Range of Recommended Age	Dose(s) needed	Schedule of Immunization	Route of Administration	Precautions & Contraindications
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 wks 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 wks from 1st dose		
Varicella Vaccine	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	Anytime : 7-12 years old at least 3 mos from 1st dose, 13 years old at least 4 weeks from the 1st dose		
Influenza Vaccine	9-18 yrs old	annually	Begin immunizing in Feb.	IM/SC	Severe allergic reaction to vaccine component, moderate to severe illness, history of Guillain-Barre syndrome following a previous dose
HPV: Bivalent HPV	Females: 9-18 yrs old	3	0, 1 and 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	Females: 9-18 yrs old Males: 9-18 yrs old	3	0, 2 and 6 months		
Bivalent/ Quadrivalent HPV Alternative schedule for girls aged 9-14 yrs	9-14 yrs old	2	0, 6 months	IM	
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		