Appendix A: Schedule and Recommendations

Catch-up Schedule Job Aids for Persons Aged 0 Through 18 Years:

Appendix A

Catch-Up Guidance for Children 4 Months through 6 Years of Age

Diphtheria-, Tetanus-, and Pertussis-Containing Vaccines: DTaP/DT[1]

The table below provides guidance for children whose vaccinations have been delayed. Start with the child's age and information on previous doses (previous doses must be documented and must meet minimum age requirements and minimum intervals between doses). Use this table in conjunction with table 2 of the Recommended Child and Adolescent Immunization Schedule for Ages 18 Years or Younger, found at www.cdc.gov/vaccines/schedules/hcp/child-adolescent.html.

IF current age is	AND # of previous doses of DTaP or DT is	AND	THEN	Next dose due
4 months through 11 months	Unknown or 0	→	Give Dose 1 (DTaP) today	Give Dose 2 (DTaP) at least 4 weeks after Dose 1
	1	It has been at least 4 weeks since Dose 1	Give Dose 2 (DTaP) today	Give Dose 3 (DTaP) at least 4 weeks after Dose 2
		It has **not** been at least 4 weeks since Dose 1	No dose today	Give Dose 2 (DTaP) at least 4 weeks after Dose 1
	2	It has been at least 4 weeks since Dose 2	Give Dose 3 (DTaP) today	Give Dose 4 (DTaP) at least 6 calendar months after Dose 3 **and** at 15 months of age or older[2]
		It has **not** been at least 4 weeks since Dose 2	No dose today	Give Dose 3 (DTaP) at least 4 weeks after Dose 2
1 through 3 years	Unknown or 0	→	Give Dose 1 (DTaP) today	Give Dose 2 (DTaP) at least 4 weeks after Dose 1
	1	It has been at least 4 weeks since Dose 1	Give Dose 2 (DTaP) today	Give Dose 3 (DTaP) at least 4 weeks after Dose 2
		It has **not** been 4 weeks since Dose 1	No dose today	Give Dose 2 (DTaP) at least 4 weeks after Dose 1
	2	It has been at least 4 weeks since Dose 2	Give Dose 3 (DTaP) today	Give Dose 4 (DTaP) at least 6 calendar months after Dose 3
		It has **not** been 4 weeks since Dose 2	No dose today	Give Dose 3 (DTaP) at least 4 weeks after Dose 2
	3	It has been at least 6 calendar months since Dose 3	If 12 through 14 months of age, no dose today[2]	Give Dose 4 (DTaP) at 15 through 18 months of age
			If 15 months of age or older, give Dose 4 (DTaP) today	Give Dose 5 (DTaP) at least 6 months after Dose 4 **and** at 4 through 6 years of age
		It has **not** been 6 calendar months since Dose 3	No dose today	Give Dose 4 (DTaP) at least 6 months after Dose 3

[1]Vaccine information: DTaP–Administer to children 6 weeks through 6 years of age without a contraindication or precaution to diphtheria, tetanus, or pertussis vaccine. DTaP products include Daptacel, Kinrix, Infanrix, Pediarix, Pentacel, and Quadracel. Use the correct product based on the approved age indications. DT–Administer to children 6 weeks through 6 years of age with a contraindication to pertussis vaccine.

[2]The fourth dose may be administered as early as age 12 months, provided at least 6 months have elapsed since the third dose.

Reference: Recommended Child and Adolescent Immunization Schedule for Ages 18 Years or Younger—United States, 2021. www.cdc.gov/vaccines/schedules/downloads/child/0-18yrs-child-combined-schedule.pdf

Revised February 2021

Catch-Up Guidance for Children 4 Months through 6 Years of Age

Diphtheria-, Tetanus-, and Pertussis-Containing Vaccines: DTaP/DT[1]

IF current age is	AND # of previous doses of DTaP or DT is[1]	AND	AND	THEN	Next dose due
4 through 6 years	Unknown or 0	→	→	Give Dose 1 (DTaP) today	Give Dose 2 (DTaP) at least 4 weeks after Dose 1
	1	It has been at least 4 weeks since Dose 1	→	Give Dose 2 (DTaP) today	Give Dose 3 (DTaP) at least 4 weeks after Dose 2
		It has **not** been 4 weeks since Dose 1	→	No dose today	Give Dose 2 (DTaP) at least 4 weeks after Dose 1
	2	It has been at least 4 weeks since Dose 2	→	Give Dose 3 (DTaP) today	Give Dose 4 (DTaP) at least 6 calendar months after Dose 3
		It has **not** been at least 4 weeks since Dose 2	→	No dose today	Give Dose 3 (DTaP) at least 4 weeks after Dose 2
	3	It has been at least 6 calendar months since Dose 3	→	Give Dose 4 (DTaP) today	Give Tdap at 11 to 12 years of age
		It has **not** been at least 6 calendar months since Dose 3	→	No dose today	Give Dose 4 (DTaP) at least 6 calendar months after Dose 3
	4	All doses were given prior to the 4th birthday	It has not been at least 6 months since Dose 4	No dose today	Give Dose 5 (DTaP) at least 6 calendar months after Dose 4
			It has been at least 6 months since Dose 4	Give Dose 5 (DTaP) today	Give Tdap at 11 to 12 years of age
		At least one dose was given at/after the 4th birthday	→	No dose today	

[1]Vaccine information: DTaP–Administer to children 6 weeks through 6 years of age without a contraindication or precaution to diphtheria, tetanus, or pertussis vaccine. DTaP products include Daptacel, Kinrix, Infanrix, Pediarix, Pentacel, and Quadracel. Use the correct product based on the approved age indications. DT–Administer to children 6 weeks through 6 years of age with a contraindication to pertussis vaccine.

Reference: Recommended Child and Adolescent Immunization Schedule for Ages 18 Years or Younger—United States, 2021.
www.cdc.gov/vaccines/schedules/downloads/child/0-18yrs-child-combined-schedule.pdf

Catch-Up Guidance for Healthy[1] Children 4 Months through 4 Years of Age

Haemophilus influenzae type B Vaccines: ActHIB, Pentacel, Hiberix, or Unknown

The table below provides guidance for children whose vaccinations have been delayed. Start with the child's age and information on previous doses (previous doses must be documented and must meet minimum age requirements and minimum intervals between doses). Use this table in conjunction with table 2 of the Recommended Child and Adolescent Immunization Schedule for Ages 18 Years or Younger, found at www.cdc.gov/vaccines/schedules/hcp/child-adolescent.html.

IF current age is	AND # of previous doses is	AND		THEN	Next dose due
4 through 6 months	Unknown or 0	→		Give Dose 1 today	Give Dose 2 at least 4 weeks after Dose 1
	1	It has been at least 4 weeks since Dose 1		Give Dose 2 today	Give Dose 3 at least 4 weeks after Dose 2
		It has **not** been 4 weeks since Dose 1		No dose today	Give Dose 2 at least 4 weeks after Dose 1
	2	It has been at least 4 weeks since Dose 2		Give Dose 3 today	Give Dose 4 (**Final Dose**) at 12 months of age or older
		It has **not** been 4 weeks since Dose 2		No dose today	Give Dose 3 at least 4 weeks after Dose 2
7 through 11 months	Unknown or 0	→	→	Give Dose 1 today	Give Dose 2 at least 4 weeks after Dose 1
	1	It has been at least 4 weeks since Dose 1	→	Give Dose 2 today	IF Dose 1 was given **before** 7 months of age, give Dose 3 at least 4 weeks after Dose 2
					IF Dose 1 was given at 7 months of age or older, give Dose 3 (**Final Dose**) at least 8 weeks after Dose 2 **and** no earlier than 12 months of age
		It has **not** been 4 weeks since Dose 1	→	No dose today	Give Dose 2 at least 4 weeks after Dose 1
	2	Dose 1 was given **before** 7 months of age	It has been at least 4 weeks since Dose 2	Give Dose 3 today	Give Dose 4 (**Final Dose**) at least 8 weeks after Dose 3 **and** no earlier than 12 months of age
			It has **not** been 4 weeks since Dose 2	No dose today	Give Dose 3 at least 4 weeks after Dose 2
		Dose 1 was given at 7 months of age or older	→	No dose today	Give Dose 3 (**Final Dose**) at least 8 weeks after Dose 2 **and** no earlier than 12 months of age

[1] Refer to notes of the Recommended Child and Adolescent Immunization Schedule for Ages 18 Years or Younger–United States, 2021, for immunization guidance for children at increased risk for Haemophilus influenzae type b disease.

Reference: Recommended Child and Adolescent Immunization Schedule for Ages 18 Years or Younger–United States, 2021. www.cdc.gov/vaccines/schedules/downloads/child/0-18yrs-child-combined-schedule.pdf

Catch-Up Guidance for Healthy[1] Children 4 Months through 4 Years of Age

Haemophilus influenzae type B Vaccines: ActHIB, Pentacel, Hiberix, or Unknown

IF current age is	AND # of previous doses is	AND	AND	AND	THEN	Next dose due
12 through 14 months	Unknown or 0	→	→	→	Give Dose 1 today	Give Dose 2 (**Final Dose**) at least 8 weeks after Dose 1
	1	Dose 1 was given **before** 12 months of age	It has been at least 4 weeks since Dose 1	→	Give Dose 2 today	Give Dose 3 (**Final Dose**) at least 8 weeks after Dose 2
			It has **not** been 4 weeks since Dose 1	→	No dose today	Give Dose 2 at least 4 weeks after Dose 1
		Dose 1 was given at 12 months of age or older	It has been at least 8 weeks since Dose 1	→	Give Dose 2 (**Final Dose**) today	**No additional doses needed**
			It has **not** been 8 weeks since Dose 1	→	No dose today	Give Dose 2 (**Final Dose**) at least 8 weeks after Dose 1
	2	Dose 1 was given **before** 12 months of age	It has been at least 8 weeks since Dose 2	→	Give Dose 3 (**Final Dose**) today	**No additional doses needed**
			It has **not** been 8 weeks since Dose 2	→	No dose today	Give Dose 3 (**Final Dose**) at least 8 weeks after Dose 2
		Dose 1 was given at 12 months of age or older	→	→	No dose today	**No additional doses needed**
	3	All doses were given **before** 12 months of age	→	It has been at least 8 weeks since Dose 3	Give Dose 4 (**Final Dose**) today	**No additional doses needed**
				It has **not** been 8 weeks since Dose 3	No dose today	Give Dose 4 (**Final Dose**) at least 8 weeks after Dose 3
		At least one dose was given at 12 months of age or older	→	→	No dose today	**No additional doses needed**

[1] Refer to notes of the Recommended Child and Adolescent Immunization Schedule for Ages 18 Years or Younger–United States, 2021, for children at increased risk for *Haemophilus influenzae* type b disease.

Reference: Recommended Child and Adolescent Immunization Schedule for Ages 18 Years or Younger–United States, 2021. www.cdc.gov/vaccines/schedules/downloads/child/0-18yrs-child-combined-schedule.pdf

Catch-Up Guidance for Healthy[1] Children 4 Months through 4 Years of Age

Haemophilus influenzae type B Vaccines: ActHIB, Pentacel, Hiberix, or Unknown

IF current age is	AND # of previous doses is	AND	AND	AND	THEN	Next dose due
15 through 59 months	Unknown or 0	→	→	→	Give Dose 1 (**Final Dose**) today	**No additional doses needed**
	1	Dose 1 was given **before** 12 months of age	→	→	Give Dose 2 (**Final Dose**) today	**No additional doses needed**
		Dose 1 was given at 12 through 14 months of age	It has been at least 8 weeks since Dose 1	→	Give Dose 2 (**Final Dose**) today	**No additional doses needed**
			It has **not** been 8 weeks since Dose 1	→	No dose today	Give Dose 2 (**Final Dose**) at least 8 weeks after Dose 1
		Dose 1 was given at 15 months of age or older	→	→	No dose today	**No additional doses needed**
	2	Dose 1 was given **before** 12 months of age	Dose 2 was given **before** 15 months of age	It has been at least 8 weeks since Dose 2	Give Dose 3 (**Final Dose**) today	**No additional doses needed**
				It has **not** been 8 weeks since Dose 2	No dose today	Give Dose 3 (**Final Dose**) at least 8 weeks after Dose 2
			Dose 2 was given at 15 months of age or older	→	No dose today	**No additional doses needed**
		Dose 1 was given at 12 months of age or older	→	→	No dose today	**No additional doses needed**
	3	Dose 3 was given **before** 15 months of age	All doses were given **before** 12 months of age	→	Give Dose 4 (**Final Dose**) today	**No additional doses needed**
			At least one dose was given at 12 months of age or older	→	No dose today	**No additional doses needed**
		Dose 3 was given at 15 months of age or older	→	→	No dose today	**No additional doses needed**

[1] Refer to notes of the Recommended Child and Adolescent Immunization Schedule for Ages 18 Years or Younger–United States, 2021, for immunization guidance for children at increased risk for Haemophilus influenzae type b disease.

Reference: Recommended Child and Adolescent Immunization Schedule for Ages 18 Years or Younger–United States, 2021. www.cdc.gov/vaccines/schedules/downloads/child/0-18yrs-child-combined-schedule.pdf

Catch-Up Guidance for Healthy[1] Children 4 Months through 4 Years of Age

Haemophilus influenzae type b Vaccines: PedvaxHIB Vaccine Only

The table below provides guidance for children whose vaccinations have been delayed. Start with the child's age and information on previous doses (previous doses must be documented and must meet minimum age requirements and minimum intervals between doses). Use this table in conjunction with table 2 of the Recommended Child and Adolescent Immunization Schedule for Ages 18 Years or Younger, found at www.cdc.gov/vaccines/schedules/hcp/child-adolescent.html.

IF current age is	AND # of previous doses is	AND	AND	THEN	Next dose due
4 through 6 months	0	→	→	Give Dose 1 today	Give Dose 2 at least 4 weeks after Dose 1
	1	→	It has been at least 4 weeks since Dose 1	Give Dose 2 today	Give Dose 3 (**Final Dose**) at 12 months of age or older
		→	It has **not** been 4 weeks since Dose 1	No dose today	Give Dose 2 at least 4 weeks after Dose 1
7 through 11 months	0	→	→	Give Dose 1 today	Give Dose 2 at least 4 weeks after Dose 1
	1	→	It has been at least 4 weeks since Dose 1	Give Dose 2 today	Give Dose 3 (**Final Dose**) at least 8 weeks after Dose 2 **and** at 12 months of age or older
		→	It has **not** been 4 weeks since Dose 1	No dose today	Give Dose 2 at least 4 weeks after Dose 1
12 through 14 months	0	→	→	Give Dose 1 today	Give Dose 2 (**Final Dose**) at least 8 weeks after Dose 1
	1	Dose 1 was given **before** 12 months of age	It has been at least 4 weeks since Dose 1	Give Dose 2 today	Give Dose 3 (**Final Dose**) at least 8 weeks after Dose 2
			It has **not** been 4 weeks since Dose 1	No dose today	Give Dose 2 at least 4 weeks after Dose 1
		Dose 1 was given at 12 months of age or older	It has been at least 8 weeks since Dose 1	Give Dose 2 (**Final Dose**) today	**No additional doses needed**
			It has **not** been 8 weeks since Dose 1	No dose today	Give Dose 2 (**Final Dose**) at least 8 weeks after Dose 1
	2	Dose 1 was given **before** 12 months of age	It has been at least 8 weeks since Dose 2	Give Dose 3 (**Final Dose**) today	**No additional doses needed**
			It has **not** been 8 weeks since Dose 2	No dose today	Give Dose 3 (**Final Dose**) at least 8 weeks after Dose 2
		Dose 1 was given at 12 months of age or older	→	No dose today	**No additional doses needed**

[1] Refer to notes of the Recommended Child and Adolescent Immunization Schedule for Ages 18 Years or Younger–United States, 2021, for immunization guidance for children at increased risk for *Haemophilus influenzae* type b disease.

Reference: Recommended Child and Adolescent Immunization Schedule for Ages 18 Years or Younger–United States, 2021. www.cdc.gov/vaccines/schedules/downloads/child/0-18yrs-child-combined-schedule.pdf

Catch-Up Guidance for Healthy[1] Children 4 Months through 4 Years of Age

Haemophilus influenzae type b Vaccines: PedvaxHIB Vaccine Only

IF current age is	AND # of previous doses is	AND	AND	AND	THEN	Next dose due
15 through 59 months	0	→	→	→	Give Dose 1 (**Final Dose**) today	**No additional doses needed**
	1	Dose 1 was given **before** 12 months of age	→	→	Give Dose 2 (**Final Dose**) today	**No additional doses needed**
		Dose 1 was given at 12 through 14 months of age	It has been at least 8 weeks since Dose 1	→	Give Dose 2 (**Final Dose**) today	**No additional doses needed**
			It has **not** been 8 weeks since Dose 1	→	No dose today	Give Dose 2 (**Final Dose**) at least 8 weeks after Dose 1
		Dose 1 was given at 15 months of age or older	→	→	No dose today	**No additional doses needed**
	2	Dose 1 was given **before** 12 months of age	Dose 2 was given **before** 15 months of age	It has been at least 8 weeks since Dose 2	Give Dose 3 (**Final Dose**) today	**No additional doses needed**
				It has **not** been 8 weeks since Dose 2	No dose today	Give dose 3 (**Final Dose**) at least 8 weeks after Dose 2
			Dose 2 was given at 15 months of age or older	→	No dose today	**No additional doses needed**
		Dose 1 was given at 12 months or older	→	→	No dose today	**No additional doses needed**

[1] Refer to notes of the Recommended Child and Adolescent Immunization Schedule for Ages 18 Years or Younger–United States, 2021, for immunization guidance for children at increased risk for *Haemophilus influenzae* type b disease.

Reference: Recommended Child and Adolescent Immunization Schedule for Ages 18 Years or Younger–United States, 2021. www.cdc.gov/vaccines/schedules/downloads/child/0-18yrs-child-combined-schedule.pdf

Catch-Up Guidance for Children 4 Months through 17 Years of Age

Inactivated Polio Vaccine (IPV)

The table below provides guidance for children whose vaccinations have been delayed. Start with the child's age and information on previous doses (previous doses must be documented and must meet minimum age requirements and minimum intervals between doses). Use this table in conjunction with table 2 of the Recommended Child and Adolescent Immunization Schedule for Ages 18 Years or Younger, found at www.cdc.gov/vaccines/schedules/hcp/child-adolescent.html.

IF current age is	AND # of previous doses[1] is	AND		THEN	Next dose due[2]
4 through 18 months	Unknown or 0	→		Give Dose 1 today	Give Dose 2 at least 4 weeks after Dose 1
	1	It has been at least 4 weeks since Dose 1		Give Dose 2 today	Give Dose 3 at least 4 weeks after Dose 2 **and** at 6 months of age or older
		It has **not** been at least 4 weeks since Dose 1		No dose today	Give Dose 2 at least 4 weeks after Dose 1
	2	It has been at least 4 weeks since Dose 2	Child is 6 months of age or older	Give Dose 3 today	Give Dose 4 (**Final Dose**) at 4 through 6 years of age
			Child is younger than 6 months of age	No dose today	Give Dose 3 at 6 months of age
		It has **not** been at least 4 weeks since Dose 2	→	No dose today	Give Dose 3 at least 4 weeks after Dose 2 **and** at 6 months of age or older
19 months through 3 years	Unknown or 0	→		Give Dose 1 today	Give Dose 2 at least 4 weeks after Dose 1
	1	It has been at least 4 weeks since Dose 1		Give Dose 2 today	Give Dose 3 at least 4 weeks after Dose 2
		It has **not** been at least 4 weeks since Dose 1		No dose today	Give Dose 2 at least 4 weeks after Dose 1
	2	It has been at least 4 weeks since Dose 2		Give Dose 3 today	Give Dose 4 (**Final Dose**) at least 6 months after Dose 3 **and** at 4 through 6 years of age
		It has **not** been 4 weeks since Dose 2		No dose today	Give Dose 3 at least 4 weeks after Dose 2

[1] Series containing oral polio vaccine (OPV), either mixed OPV-IPV or OPV only: Total number of doses needed to complete the series is the same as that recommended for the U.S. IPV schedule. www.cdc.gov/mmwr/volumes/66/wr/mm6601a6.htm

[2] Next dose due is not the final dose in the series unless explicitly stated.

Reference: Recommended Child and Adolescent Immunization Schedule for Ages 18 Years or Younger—United States, 2021. www.cdc.gov/vaccines/schedules/downloads/child/0-18yrs-child-combined-schedule.pdf

Revised February 2021

Catch-Up Guidance for Children 4 Months through 17 Years of Age

Inactivated Polio Vaccine (IPV)

IF current age is	AND # of previous doses[1] is	AND			THEN	Next dose due2
4 through 17 years	Unknown or 0	→			Give Dose 1 today	Give Dose 2 at least 4 weeks after Dose 1
	1	It has been at least 4 weeks since Dose 1			Give Dose 2 today	Give Dose 3 (**Final Dose**) at least 6 months after Dose 2
		It has **not** been 4 weeks since Dose 1			No dose today	Give Dose 2 at least 4 weeks after Dose 1
	2	It has been at least 6 months since Dose 2			Give Dose 3 (**Final Dose**) today	**No additional doses needed**
		It has **not** been 6 months since Dose 2			No dose today	Give Dose 3 (**Final Dose**) at least 6 months after Dose 2
	3	Dose 3 was given **before** 4 years of age	It has been at least 6 months since Dose 3	→	Give Dose 4 (**Final dose**) today	**No additional doses needed**
			It has **not** been at least 6 months since Dose 3	→	No dose today	Give Dose 4 (**Final Dose**) at least 6 months after Dose 3
		Dose 3 was given at 4 years of age or older	Dose 3 was given at least 6 months from previous dose	→	No dose today	**No additional doses needed**
			Dose 3 was **not** given at least 6 months from previous dose	It has been at least 6 months since Dose 3	Give Dose 4 (**Final dose**) today	**No additional doses needed**
				It has **not** been at least 6 months since Dose 3	No dose today	Give Dose 4 (**Final Dose)** at least 6 months after Dose 3

[1] Series containing oral polio vaccine (OPV), either mixed OPV-IPV or OPV only: Total number of doses needed to complete the series is the same as that recommended for the U.S. IPV schedule. www.cdc.gov/mmwr/volumes/66/wr/mm6601a6.htm

[2] Next dose due is not the final dose in the series unless explicitly stated.

Reference: Recommended Child and Adolescent Immunization Schedule for Ages 18 Years or Younger—United States, 2021. www.cdc.gov/vaccines/schedules/downloads/child/0-18yrs-child-combined-schedule.pdf

Catch-Up Guidance for Healthy[1] Children 4 Months through 4 Years of Age

Pneumococcal Conjugate Vaccine: PCV

The table below provides guidance for children whose vaccinations have been delayed. Start with the child's age and information on previous doses (previous doses must be documented and must meet minimum age requirements and minimum intervals between doses). Use this table in conjunction with table 2 of the Recommended Child and Adolescent Immunization Schedule for Ages 18 Years or Younger, found at www.cdc.gov/vaccines/schedules/hcp/child-adolescent.html.

IF current age is	AND # of previous doses is	AND		THEN	Next dose due
4 through 6 months	0 or unknown	→	→	Give Dose 1 today	Give Dose 2 at least 4 weeks after Dose 1
	1	→	It has been at least 4 weeks since Dose 1	Give Dose 2 today	Give Dose 3 at least 4 weeks after Dose 2
		→	It has **not** been at least 4 weeks since Dose 1	No dose today	Give Dose 2 at least 4 weeks after Dose 1
	2	→	It has been at least 4 weeks since Dose 2	Give Dose 3 today	Give Dose 4 (**Final Dose**) at 12 months of age or older
		→	It has **not** been at least 4 weeks since Dose 2	No dose today	Give Dose 3 at least 4 weeks after Dose 2
7 through 11 months	0	→	→	Give Dose 1 today	Give Dose 2 at least 4 weeks after Dose 1
	1	Dose 1 was given **before** 7 months of age	It has been at least 4 weeks since Dose 1	Give Dose 2 today	Give Dose 3 (**Final Dose**) at least 8 weeks after Dose 2 **and** at 12 months of age or older
			It has **not** been 4 weeks since Dose 1	No dose today	Give Dose 2 at least 4 weeks after Dose 1
		Dose 1 was given at 7 months or older	It has been at least 4 weeks since Dose 1	Give Dose 2 today	Give Dose 3 (**Final Dose**) at least 8 weeks after Dose 2 **and** at 12 months of age or older
			It has **not** been 4 weeks since Dose 1	No dose today	Give Dose 2 at least 4 weeks after Dose 1
	2	Dose 2 was given **before** 7 months of age	It has been at least 4 weeks since Dose 2	Give Dose 3 today	Give Dose 4 (**Final Dose**) at least 8 weeks after Dose 3 **and** at 12 months of age or older
			It has **not** been 4 weeks since Dose 2	No dose today	Give Dose 3 at least 4 weeks after Dose 2
		Dose 2 was given at 7 months or older	→	No dose today	Give Dose 3 (**Final Dose**) at least 8 weeks after Dose 2 **and** at 12 months of age or older

[1] Refer to the notes of the Recommended Child and Adolescent Immunization Schedule for Ages 18 Years or Younger–United States, 2021, for immunization guidance for children at increased risk for pneumococcal disease.

Reference: Recommended Child and Adolescent Immunization Schedule for Ages 18 Years or Younger–United States, 2021. www.cdc.gov/vaccines/schedules/downloads/child/0-18yrs-child-combined-schedule.pdf.

Revised February 2021

Catch-Up Guidance for Healthy[1] Children 4 Months through 4 Years of Age

Pneumococcal Conjugate Vaccine: PCV

The table below provides guidance for children whose vaccinations have been delayed. Start with the child's age and information on previous doses (previous doses must be documented and must meet minimum age requirements and minimum intervals between doses). Use this table in conjunction with table 2 of the Recommended Child and Adolescent Immunization Schedule for Ages 18 Years or Younger, found at www.cdc.gov/vaccines/schedules/hcp/child-adolescent.html.

IF current age is	AND # of previous doses is	AND	AND	THEN	Next dose due
12 through 23 months	0 or unknown	→	→	Give Dose 1 today	Give Dose 2 (**Final Dose**) at least 8 weeks after Dose 1
	1	Dose 1 was given **before** 12 months of age	It has been at least 4 weeks since Dose 1	Give Dose 2 today	Give Dose 3 (**Final Dose**) at least 8 weeks after Dose 2
			It has **not** been 4 weeks since Dose 1	No dose today	Give Dose 2 at least 4 weeks after Dose 1
		Dose 1 was given at 12 months of age or older	It has been at least 8 weeks since Dose 1	Give Dose 2 (**Final Dose**) today	**No additional doses needed**
			It has **not** been 8 weeks since Dose 1	No dose today	Give Dose 2 (**Final Dose**) at least 8 weeks after Dose 1
	2	Both doses were given **before** 12 months of age	It has been at least 8 weeks since Dose 2	Give Dose 3 (**Final Dose**) today	N**o additional doses needed**
			It has **not** been 8 weeks since Dose 2	No dose today	Give Dose 3 (**Final Dose**) at least 8 weeks after Dose 2
		At least one dose was given at 12 months or older	It has been at least 8 weeks since Dose 2	Give Dose 3 (**Final Dose**) today	**No additional doses needed**
			It has **not** been 8 weeks since Dose 2	No dose today	Give Dose 3 (**Final Dose**) at least 8 weeks after Dose 2
		Both doses were given at 12 months or older[2]	→	No dose today	**No additional doses needed**
	3	All doses were given **before** 12 months of age	It has been at least 8 weeks since Dose 3	Give Dose 4 (**Final Dose**) today	**No additional doses needed**
			It has **not** been 8 weeks since Dose 3	No dose today	Give Dose 4 (**Final Dose**) at least 8 weeks after Dose 3
		1 or more doses were given at 12 months of age or older	→	No dose today	**No additional doses needed**

[1] Refer to the notes of the Recommended Child and Adolescent Immunization Schedule for Ages 18 Years or Younger–United States, 2021, for immunization guidance for children at increased risk for pneumococcal disease.

[2] Separated by at least 8 weeks.

Reference: Recommended Child and Adolescent Immunization Schedule for Ages 18 Years or Younger–United States, 2021. www.cdc.gov/vaccines/schedules/downloads/child/0-18yrs-child-combined-schedule.pdf.

Catch-Up Guidance for Healthy[1] Children 4 Months through 4 Years of Age

Pneumococcal Conjugate Vaccine: PCV

IF current age is	AND # of previous doses is	AND	AND	AND	THEN	Next dose due
24 through 59 months	0	→	→	→	Give Dose 1 today	**No additional doses needed**
	1	Dose 1 was given **before** 1st birthday	→	→	Give Dose 2 (**Final Dose**) today	**No additional doses needed**
		Dose 1 was given **after** 1st birthday	Dose 1 was given **before** 2nd birthday	It has been at least 8 weeks since Dose 1	Give Dose 2 **(Final Dose)** today	**No additional doses needed**
				It has **not** been at least 8 weeks since Dose 1	No dose today	Give Dose 2 **(Final Dose)** at least 8 weeks after Dose 1
			Dose 1 was given **after** 2nd birthday	→	No dose today	**No additional doses needed**
	2	Dose 1 was given **before** 12 months of age	Dose 2 was given **before** 1st birthday	→	Give Dose 3 (**Final Dose**) today	**No additional doses needed**
			Dose 2 was given **after** 1st birthday	Dose 2 was given **before** 2nd birthday	Give Dose 3 (**Final Dose**) today	**No additional doses needed**
				Dose 2 was given **after** 2nd birthday	No dose today	**No additional doses needed**
		Dose 1 was given **after** 12 months of age	→	→	No dose today	**No additional doses needed**
	3	All 3 doses were given **before** 12 months of age	→	→	Give Dose 4 (**Final Dose**) today	**No additional doses needed**
		1 or more doses were given at 12 months or older	→	→	No dose today	**No additional doses needed**

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[1] Refer to the notes of the Recommended Child and Adolescent Immunization Schedule for Ages 18 Years or Younger–United States, 2021, for immunization guidance for children at increased risk for pneumococcal disease.

Reference: Recommended Child and Adolescent Immunization Schedule for Ages 18 Years or Younger–United States, 2021. www.cdc.gov/vaccines/schedules/downloads/child/0-18yrs-child-combined-schedule.pdf.

Catch-Up Guidance for Children 7 through 9 Years of Age

Tetanus-, Diphtheria-, and Pertussis-Containing Vaccines: Tdap/Td[1]

The table below provides guidance for children whose vaccinations have been delayed. Start with the child's age and information on previous doses (previous doses must be documented and must meet minimum age requirements and minimum intervals between doses). Use this table in conjunction with table 2 of the Recommended Child and Adolescent Immunization Schedule for Ages 18 Years or Younger, found at www.cdc.gov/vaccines/schedules/hcp/child-adolescent.html.

IF current age is	AND # of previous doses of DTaP, DT, Td, or Tdap is	AND	AND	AND	THEN	Next dose due
7 through 9 years[1]	Unknown or 0	→	→	→	Give Dose 1 (Tdap) today	Give Dose 2 (Td or Tdap) at least 4 weeks after Dose 1
	1	Dose 1 was given **before** 12 months of age	→	→	Give Dose 2 (Tdap) today	Give Dose 3 (Td or Tdap) at least 4 weeks after Dose 2
		Dose 1 was given at 12 months of age or older	It has been at least 4 weeks since Dose 1	Dose 1 was Tdap	Give Dose 2 (Td or Tdap) today	Give Dose 3 (Td or Tdap) at least 6 calendar months after Dose 2
				Dose 1 was **not** Tdap	Give Dose 2 (Tdap) today	
			It has **not** been 4 weeks since Dose 1	Dose 1 was Tdap	No dose today	Give Dose 2 (Td or Tdap) at least 4 weeks after Dose 1
				Dose 1 was **not** Tdap	No dose today	Give Dose 2 (Tdap) at least 4 weeks after Dose 1
	2	Dose 1 was given **before** 12 months of age	It has been at least 4 weeks since Dose 2	Dose 2 was Tdap[1]	Give Dose 3 (Td or Tdap) today	Give Dose 4 (Td or Tdap) at least 6 calendar months after Dose 3
				No dose was Tdap	Give Dose 3 (Tdap) today	
			It has **not** been 4 weeks since Dose 2	Dose 2 was Tdap	No dose today	Give Dose 3 (Td or Tdap) at least 4 weeks after Dose 2
				No dose was Tdap	No dose today	Give Dose 3 (Tdap) at least 4 weeks after Dose 2
		Dose 1 was given at 12 months of age or older	It has been at least 6 calendar months since Dose 2	Any dose was Tdap[1]	Give Dose 3 (Td or Tdap) today	Give Tdap at 11–12 years of age[1,2]
				No dose was Tdap	Give Dose 3 (Tdap) today	
			It has **not** been 6 calendar months since Dose 2	Any dose was Tdap[1]	No dose today	Give Dose 3 (Td or Tdap) at least 6 calendar months after Dose 2[1]
				No dose was Tdap	No dose today	Give Dose 3 (Tdap) at least 6 calendar months after Dose 2

[1]For persons 7-9 years of age who receive a dose of Tdap, the routine adolescent Tdap dose should be administered at age 11-12.

[2]Tdap may be administered regardless of the interval since the last tetanus- and diphtheria-toxoid-containing vaccine.

Reference: Recommended Child and Adolescent Immunization Schedule for Ages 18 Years or Younger—United States, 2021. www.cdc.gov/vaccines/schedules/downloads/child/0-18yrs-child-combined-schedule.pdf.

Catch-Up Guidance for Children 7 through 9 Years of Age

Tetanus-, Diphtheria-, and Pertussis-Containing Vaccines: Tdap/Td[1]

IF current age is	AND # of previous doses of DTaP, DT, Td, or Tdap is	AND	AND	AND	THEN	Next dose due
7 through 9 years[1]	3	Dose 1 was given **before** 12 months of age	It has been at least 6 calendar months since Dose 3	Any dose was Tdap[1]	Give Dose 4 (Td or Tdap) today	Give Tdap at 11–12 years of age[1,2]
				No dose was Tdap	Give Dose 4 (Tdap) today	
			It has **not** been 6 calendar months since Dose 3	Any dose was Tdap[1]	No dose today	Give Dose 4 (Td or Tdap) at least 6 calendar months after Dose 3[1]
				No dose was Tdap	No dose today	Give Dose 4 (Tdap) at least 6 calendar months after Dose 3[1]
		Dose 1 was given at 12 months of age or older	No dose was Tdap	→	Give Dose 4 (Tdap) today[2]	Give Tdap at 11–12 years of age[1,2]
			Any dose was Tdap	→	No dose today	Give Tdap at 11–12 years of age[1,2]
	4	→	Dose of DTaP or Tdap given after 4th birthday	→	No dose today	Give Tdap at 11–12 years of age[1,2]
			No DTaP or Tdap given after 4th birthday	→	Give a dose of Tdap today	

[1]For persons 7-9 years of age who receive a dose of Tdap, the routine adolescent Tdap dose should be administered at age 11-12.

[2]Tdap may be administered regardless of the interval since the last tetanus- and diphtheria-toxoid-containing vaccine.

Reference: Recommended Child and Adolescent Immunization Schedule for Ages 18 Years or Younger—United States, 2021.

www.cdc.gov/vaccines/schedules/downloads/child/0-18yrs-child-combined-schedule.pdf

Revised February 2021

Catch-Up Guidance for Children 10 through 18 Years of Age

Tetanus-, Diphtheria-, and Pertussis-Containing Vaccines: Tdap/Td[1]

The table below provides guidance for children whose vaccinations have been delayed. Start with the child's age and information on previous doses (previous doses must be documented and must meet minimum age requirements and minimum intervals between doses). Use this table in conjunction with table 2 of the Recommended Child and Adolescent Immunization Schedule for Ages 18 Years or Younger, found at www.cdc.gov/vaccines/schedules/hcp/child-adolescent.html.

IF current age is	AND # of previous doses of DTaP, DT, Td, or Tdap is	AND	AND	AND	THEN	Next dose due
10 through 18 years	Unknown or 0	→	→	→	Give Dose 1 (Tdap) today	Give Dose 2 (Td or Tdap) at least 4 weeks after Dose 1
	1	Dose 1 was given **before** 12 months of age	→	→	Give Dose 2 (Tdap) today	Give Dose 3 (Td or Tdap) at least 4 weeks after Dose 2
		Dose 1 was given at 12 months of age or older	It has been at least 4 weeks since Dose 1	Dose 1 was Tdap	Give Dose 2 (Td or Tdap) today	Give Dose 3 (Td or Tdap) at least 6 calendar months after Dose 2
				Dose 1 was **not** Tdap	Give Dose 2 (Tdap) today	
			It has **not** been 4 weeks since Dose 1	Dose 1 was Tdap	No dose today	Give Dose 2 (Td or Tdap) at least 4 weeks after Dose 1
				Dose 1 was **not** Tdap	No dose today	Give Dose 2 (Tdap) at least 4 weeks after Dose 1
	2	Dose 1 was given **before** 12 months of age	It has been at least 4 weeks since Dose 2	Any dose was Tdap[1]	Give Dose 3 (Td or Tdap) today[2]	Give Dose 4 (Td or Tdap) at least 6 calendar months after Dose 3
				No dose was Tdap[3]	Give Dose 3 (Tdap) today	
			It has **not** been 4 weeks since Dose 2	Any dose was Tdap[1]	No dose today	Give Dose 3 (Td or Tdap) at least 4 weeks after Dose 2[2]
				No dose was Tdap[3]	No dose today	Give Dose 3 (Tdap) at least 4 weeks after Dose 2
		Dose 1 was given at 12 months of age or older	It has been at least 6 calendar months since Dose 2	Any dose was Tdap[1]	Give Dose 3 (Td or Tdap) today[2]	Give Td or Tdap 10 years after Dose 3
				No dose was Tdap[2]	Give Dose 3 (Tdap) today	
			It has **not** been 6 calendar months since Dose 2	Any dose was Tdap[1]	No dose today	Give Dose 3 (Td or Tdap) at least 6 calendar months after Dose 2[2]
				No dose was Tdap[3]	No dose today	Give Dose 3 (Tdap) at least 6 calendar months after Dose 2

[1]Given at 10 years of age or older.

2If the previous Tdap dose(s) was administered before the 10th birthday, then a dose of Tdap is recommended now.

[3]Or Tdap administered at 9 years of age or younger.

Reference: Recommended Child and Adolescent Immunization Schedule for Ages 18 Years or Younger—United States, 2021. www.cdc.gov/vaccines/schedules/downloads/child/0-18yrs-child-combined-schedule.pdf

Catch-Up Guidance for Children 10 through 18 Years of Age

Tetanus-, Diphtheria-, and Pertussis-Containing Vaccines: Tdap/Td[1]

IF current age is	AND # of previous doses of DTaP, DT, Td, or Tdap is	AND	AND	AND	THEN	Next dose due
10 through 18 years	3	Dose 1 was given **before** 12 months of age	It has been at least 6 calendar months since Dose 3	Any dose was Tdap[1]	Give Dose 4 (Td or Tdap) today[2]	Give Td or Tdap 10 years after Dose 4
				No dose was Tdap[3]	Give Dose 4 (Tdap) today	
			It has **not** been 6 calendar months since Dose 3	Any dose was Tdap[1]	No dose today	Give Dose 4 (Td or Tdap) at least 6 calendar months after Dose 3[2]
				No dose was Tdap[3]	No dose today	Give Dose 4 (Tdap) at least 6 calendar months after Dose 3
		Dose 1 was given at 12 months of age or older	No dose was Tdap[1]	→	Give Dose 4 (Tdap) today	Give Td or Tdap 10 years after Dose 4
			Any dose was Tdap[2]	→	No dose today	Give Td or Tdap 10 years after Dose 3
	4	→	No Tdap was given after 7th birthday	→	Give a dose of Tdap today[4]	Give Td or Tdap 10 years after Tdap dose
			Any dose of Tdap was given at age 7 years or older[1]	No Tdap was given after 10th birthday		
				Tdap was given after 10th birthday	No dose today	Give Td or Tdap 10 years after Dose 4

[1]Given at 10 years of age or older.

[2]If the previous Tdap dose(s) was administered before the 10th birthday, then a dose of Tdap is recommended now.

[3]Or Tdap administered at 9 years of age or younger.

[4]The preferred age at administration for this dose is 11–12 years. However, if Tdap is administered at age 10 years, the Tdap dose may count as the adolescent Tdap dose.

Reference: Recommended Child and Adolescent Immunization Schedule for Ages 18 Years or Younger—United States, 2021.
www.cdc.gov/vaccines/schedules/downloads/child/0-18yrs-child-combined-schedule.pdf

Healthcare Personnel Vaccination Recommendations[1]

VACCINES AND RECOMMENDATIONS IN BRIEF

Hepatitis B – If previously unvaccinated, give a 2-dose (Heplisav-B) or 3-dose (Engerix-B or Recombivax HB) series. Give intramuscularly (IM). For HCP who perform tasks that may involve exposure to blood or body fluids, obtain anti-HBs serologic testing 1–2 months after dose #2 (for Heplisav-B) or dose #3 (for Engerix-B or Recombivax HB).

Influenza – Give 1 dose of influenza vaccine annually. Inactivated injectable vaccine is given IM. Live attenuated influenza vaccine (LAIV) is given intranasally.

MMR – For healthcare personnel (HCP) born in 1957 or later without serologic evidence of immunity or prior vaccination, give 2 doses of MMR, 4 weeks apart. For HCP born prior to 1957, see below. Give subcutaneously (Subcut).

Varicella (chickenpox) – For HCP who have no serologic proof of immunity, prior vaccination, or diagnosis or verification of a history of varicella or herpes zoster (shingles) by a healthcare provider, give 2 doses of varicella vaccine, 4 weeks apart. Give Subcut.

Tetanus, diphtheria, pertussis – Give 1 dose of Tdap as soon as feasible to all HCP who have not received Tdap previously and to pregnant HCP with each pregnancy (see below). Give Td or Tdap boosters every 10 years thereafter. Give IM.

Meningococcal – Give both MenACWY and MenB to microbiologists who are routinely exposed to isolates of *Neisseria meningitidis*. As long as risk continues: boost with MenB after 1 year, then every 2–3 years thereafter; boost with MenACWY every 5 years. Give MenACWY and MenB IM.

Hepatitis A, typhoid, and polio vaccines are not routinely recommended for HCP who may have on-the-job exposure to fecal material.

Hepatitis B

Unvaccinated healthcare personnel (HCP) and/or those who cannot document previous vaccination should receive either a 2-dose series of Heplisav-B at 0 and 1 month or a 3-dose series of either Engerix-B or Recombivax HB at 0, 1, and 6 months. HCP who perform tasks that may involve exposure to blood or body fluids should be tested for hepatitis B surface antibody (anti-HBs) 1–2 months after dose #2 of Heplisav-B or dose #3 of Engerix-B or Recombivax HB to document immunity.

- If anti-HBs is at least 10 mIU/mL (positive), the vaccinee is immune. No further serologic testing or vaccination is recommended.
- If anti-HBs is less than 10 mIU/mL (negative), the vaccinee is not protected from hepatitis B virus (HBV) infection, and should receive another 2-dose or 3-dose series of HepB vaccine on the routine schedule, followed by anti-HBs testing 1–2 months later. A vaccinee whose anti-HBs remains less than 10 mIU/mL after 2 complete series is considered a "non-responder."

For non-responders: HCP who are non-responders should be considered susceptible to HBV and should be counseled regarding precautions to prevent HBV infection and the need to obtain HBIG prophylaxis for any known or probable parenteral exposure to hepatitis B surface antigen (HBsAg)-positive blood or blood with unknown HBsAg status. It is also possible that non-responders are people who are HBsAg positive. HBsAg testing is recommended. HCP found to be HBsAg positive should be counseled and medically evaluated.

For HCP with documentation of a complete 2-dose (Heplisav-B) or 3-dose (Engerix-B or Recombivax HB) vaccine series but no documentation of anti-HBs of at least 10 mIU/mL (e.g., those vaccinated in childhood): HCP who are at risk for occupational blood or body fluid exposure might undergo anti-HBs testing upon hire or matriculation. See references 2 and 3 for details.

Influenza

All HCP, including physicians, nurses, paramedics, emergency medical technicians, employees of nursing homes and chronic care facilities, students in these professions, and volunteers, should receive annual vaccination against influenza. Live attenuated influenza vaccine (LAIV) may be given only to non-pregnant healthy HCP age 49 years and younger. Inactivated injectable influenza vaccine (IIV) is preferred over LAIV for HCP who are in close contact with severely immunosuppressed patients (e.g., stem cell transplant recipients) when they require protective isolation.

Measles, Mumps, Rubella (MMR)

HCP who work in medical facilities should be immune to measles, mumps, and rubella.

- HCP born in 1957 or later can be considered immune to measles, mumps, or rubella only if they have documentation of (a) laboratory confirmation of disease or immunity or (b) appropriate vaccination against measles, mumps, and rubella (i.e., 2 doses of live measles and mumps vaccines given on or after the first birthday and separated by 28 days or more, and at least 1 dose of live rubella vaccine). HCP with 2 documented doses of MMR are not recommended to be serologically tested for immunity; but if they are tested and results are negative or equivocal for measles, mumps, and/or rubella, these HCP should be considered to have presumptive evidence of immunity to measles, mumps, and/or rubella and are not in need of additional MMR doses.
- Although birth before 1957 generally is considered acceptable evidence of measles, mumps, and rubella immunity, 2 doses of MMR vaccine should be considered for unvaccinated HCP born before 1957 who do not have laboratory evidence of disease or immunity to measles and/or mumps. One dose of MMR vaccine should be considered for HCP with no laboratory evidence of disease or immunity to rubella. For these same HCP who do not have evidence of immunity, 2 doses of MMR vaccine are recommended during an outbreak of measles or mumps and 1 dose during an outbreak of rubella.

Varicella

It is recommended that all HCP be immune to varicella. Evidence of immunity in HCP includes documentation of 2 doses of varicella vaccine given at least 28 days apart, laboratory evidence of immunity, laboratory confirmation of disease, or diagnosis or verification of a history of varicella or herpes zoster (shingles) by a healthcare provider.

Tetanus/Diphtheria/Pertussis (Td/Tdap)

All HCPs who have not or are unsure if they have previously received a dose of Tdap should receive a dose of Tdap as soon as feasible, without regard to the interval since the previous dose of Td. Pregnant HCP should be revaccinated during each pregnancy. All HCPs should then receive Td or Tdap boosters every 10 years thereafter.

Meningococcal

Vaccination with MenACWY and MenB is recommended for microbiologists who are routinely exposed to isolates of *N. meningitidis*. The two vaccines may be given concomitantly but at different anatomic sites, if feasible.

REFERENCES

1 CDC. Immunization of Health-Care Personnel: Recommendations of the Advisory Committee on Immunization Practices (ACIP). *MMWR*, 2011; 60(RR-7).

2 CDC. Prevention of Hepatitis B Virus Infection in the United States. Recommendations of the Advisory Committee on Immunization Practices. *MMWR*, 2018; 67(RR1):1–30.

3 IAC. Pre-exposure Management for Healthcare Personnel with a Documented Hepatitis B Vaccine Series Who Have Not Had Post-vaccination Serologic Testing. Accessed at www.immunize.org/catg.d/p2108.pdf.

For additional specific ACIP recommendations, visit CDC's website at www.cdc.gov/vaccines/hcp/acip-recs/vacc-specific/index.html or visit IAC's website at www.immunize.org/acip.

Appendix A

Recommended and minimum ages and intervals between vaccine doses[a],[b],[c],[d]

Vaccine and dose number	Recommended age for this dose	Minimum age for this dose	Recommended interval to next dose	Minimum interval to next dose
DTaP-1[e]	2 months	6 weeks	8 weeks	4 weeks
DTaP-2	4 months	10 weeks	8 weeks	4 weeks
DTaP-3	6 months	14 weeks	6-12 months[f]	6 months[f]
DTaP-4	15-18 months	15 months[f]	3 years	6 months
DTaP-5[g]	4-6 years	4 years	—	—
HepA-1[e]	12-23 months	12 months	6-18 months	6 months
HepA-2	≥18 months	18 months	—	—
HepB-1[h]	Birth	Birth	4 weeks-4 months	4 weeks
HepB-2	1-2 months	4 weeks	8 weeks-17 months	8 weeks
HepB-3[i]	6-18 months	24 weeks	—	—
Hib-1[j]	2 months	6 weeks	8 weeks	4 weeks
Hib-2	4 months	10 weeks	8 weeks	4 weeks
Hib-3[k]	6 months	14 weeks	6-9 months	8 weeks
Hib-4	12-15 months	12 months	—	—
HPV-1 (Two-Dose Series)[l]	11-12 years	9 years	6 months	5 months
HPV-2	11-12 years (+6 months)	9 years +5 months[m]	—	—
HPV-1[n] **(Three-Dose Series)**	11-12 years	9 years	1-2 months	4 weeks
HPV-2	11-12 years (+1-2 months)	9 years (+4 weeks)	4 months	12 weeks[n]
HPV-3[n]	11-12 years (+6 months)	9 years (+5 months)	—	—
Influenza, inactivated[o]	≥6 months	6 months[p]	4 weeks	4 weeks
IPV-1[e]	2 months	6 weeks	8 weeks	4 weeks
IPV-2	4 months	10 weeks	8 weeks-14 months	4 weeks
IPV-3	6-18 months	14 weeks	3-5 years	6 months
IPV-4[q]	4-6 years	4 years	—	—
LAIV[o]	2-49 years	2 years	4 weeks	4 weeks
MenACWY-1[r]	11-12 years	2 months[s]	4-5 years	8 weeks
MenACWY-2	16 years	11 years (+ 8 weeks)[t]	—	—
MenB-1	Healthy adolescents: 16-23 years	16 years	Bexsero: 4 weeks Trumenba: 6 months[c]	Bexsero: 4 weeks Trumenba: 6 months[c]
MenB-1	Persons at increased risk: ≥10 years	10 years	Bexsero: 4 weeks Trumenba: 1–2 months[c]	Bexsero: 4 weeks Trumenba: 1 month
MenB-2	Healthy adolescents: 16-23 years (+1 month)	16 years (+1 month)	—	—
MenB-2	Persons at increased risk: ≥10 years (+1 month)	10 years (+1 month)	Bexsero: — Trumenba: 4-5 month[c]	Bexsero: — Trumenba: 4 months[c]
MenB-3[u]	Persons at increased risk: ≥10 years (+6 months[c])	10 years (+6 months[c])	—	—

Vaccine and dose number	Recommended age for this dose	Minimum age for this dose	Recommended interval to next dose	Minimum interval to next dose
MMR-1[v]	12-15 months	12 months	3-5 years	4 weeks
MMR-2[v]	4-6 years	13 months	—	—
PCV13-1[j]	2 months	6 weeks	8 weeks	4 weeks
PCV13-2	4 months	10 weeks	8 weeks	4 weeks
PCV13-3	6 months	14 weeks	6 months	8 weeks
PCV13-4	12-15 months	12 months	—	—
PPSV23-1	—	2 years	5 years	5 years
PPSV23-2[w]	—	7 years	—	—
Rotavirus-1[x]	2 months	6 weeks	8 weeks	4 weeks
Rotavirus-2	4 months	10 weeks	8 weeks	4 weeks
Rotavirus-3[x]	6 months	14 weeks	—	—
Td	11-12 years	7 years	10 years	5 years
Tdap[y]	≥11 years	7 years	—	—
Varicella-1[v]	12-15 months	12 months	3-5 years	12 weeks[z]
Varicella-2[v]	4-6 years	15 months[aa]	—	—
RZV-1	≥50 years	50 years[bb]	2-6 months	4 weeks
RZV-2	≥50 years (+2-6months)	50 years	—	—

Abbreviations: DTaP = diphtheria and tetanus toxoids and acellular pertussis; HepA = hepatitis A; HepB = hepatitis B; Hib = *Haemophilus influenzae* type b; HPV = human papillomavirus; IPV = inactivated poliovirus; LAIV = live, attenuated influenza vaccine; MenACWY = quadrivalent meningococcal conjugate vaccine; MenB = serogroup B meningococcal vaccine; MMR = measles, mumps, and rubella; MMRV = measles, mumps, rubella, and varicella; PCV13 = pneumococcal conjugate vaccine; PPSV23= pneumococcal polysaccharide vaccine; PRP-OMP = polyribosylribitol phosphate-meningococcal outer membrane protein conjugate; RZV = recombinant zoster vaccine; Td = tetanus and diphtheria toxoids; Tdap = tetanus toxoid, reduced diphtheria toxoid, and acellular pertussis.

[a] Combination vaccines are available. Use of licensed combination vaccines is generally preferred to separate injections of their equivalent component vaccines. When administering combination vaccines, the minimum age for administration is the oldest age for any of the individual components. The minimum interval between doses is equal to the greatest interval of any of the individual components.

[b] Information on travel vaccines, including typhoid, Japanese encephalitis, and yellow fever, is available at https://www.cdc.gov/travel. Information on other vaccines that are licensed in the United States but not distributed, including anthrax and smallpox, is available at http://emergency.cdc.gov/bioterrorism/.

[c] "Months" refers to calendar months.

[d] Within a number range, a hyphen (-) should be read as "through."

[e] Combination vaccines containing the hepatitis B component are available (Twinrix and Pediarix). These vaccines should not be administered to infants aged <6 weeks because of the other vaccine components (i.e., Hib, DTaP, HepA, and IPV).

[f] The minimum recommended age for DTaP-4 is 15 months, with a recommended 6 months from DTaP-3 (the recommended interval between DTaP-3 and DTaP-4 is 6 months). However, DTaP4 need not be repeated if given on or after 12 months of age and at least 4 months after DTaP-3. The 4-day grace period can be applied when validating past doses and can be applied to the minimum age of 12 months and the minimum interval of 4 months between DTaP-3 and DTaP-4. The 4-day grace period can be used when planning doses ahead of time, but should be applied to the minimum age of 15 months and the minimum interval between DTaP-3 and DTaP-4 of 6 months.

[g] If a fourth dose of DTaP is given on or after the fourth birthday, a fifth dose is not needed if the interval between the third dose and fourth dose is at least 6 months.

[h] Adjuvanted Hepatitis B vaccine (HepB-CgG) can be administered to adults 18 years old and older on a two dose schedule, the first and second dose separated by 4 weeks.

[i] HepB-3 should be administered at least 8 weeks after HepB-2 and at least 16 weeks after HepB-1 and should not be administered before age 24 weeks.

[j] For Hib and PCV13, children receiving the first dose of vaccine at age ≥7 months require fewer doses to complete the series.

[k] If PRP-OMP (Pedvax-Hib, Merck Vaccine Division) was administered at ages 2 and 4 months, a dose at age 6 months is not necessary. The final dose has a minimum age of 12 months.

[l] A two-dose schedule of HPV vaccine is recommended for most persons beginning the series between 9 through 14 years of age. See HPV vaccine-specific recommendations for details. www.cdc.gov/mmwr/volumes/65/wr/pdfs/mm6549a5.pdf.

[m] If a patient is eligible for a 2-dose HPV series, and the second dose is given less than four weeks after the first dose, it is an invalid dose. Administer another dose 6-12 months after the first dose. If the second dose is given less than five months after the first dose, but more than four weeks after the first dose, the next dose should be administered at least 12 weeks after the second dose, and at least 6-12 months after the first dose. The 4-day grace period may be used. If the third dose was administered before December 16, 2016, and was administered 12 weeks after the 2nd dose, and 16 weeks after the first dose, it is a valid dose. The 4-day grace period may be used. If the third dose was administered on or after December 16, 2016, and was administered 12 weeks after the 2nd dose and 5 months after the first dose, it is a valid dose. The 4-day grace period may be used.

Appendix A

[n] The minimum age for HPV-3 is based on the baseline minimum age for the first dose (i.e., 9 years) and the minimum interval of 5 months between the first and third dose. If the third dose was administered before December 16, 2016, and was administered 12 weeks after the 2nd dose, and 16 weeks after the first dose, it is a valid dose. The 4-day grace period may be used. If the third dose was administered on or after December 16, 2016, and was administered 12 weeks after the 2nd dose and 5 months after the first dose, it is a valid dose. The 4-day grace period may be used.

[o] One dose of influenza vaccine per season is recommended for most persons. To determine which children younger than 9 years should receive 2 doses in a single season, please see influenza vaccine-specific recommendations https://www.cdc.gov/vaccines/hcp/acip-recs/vacc-specific/flu.html.

[p] The minimum age for inactivated influenza vaccine varies by vaccine manufacturer. See package insert for vaccine-specific minimum ages.

[q] A fourth dose is not needed if the third dose was administered at ≥4 years and at least 6 months after the previous dose.

[r] Revaccination with meningococcal vaccine is recommended for previously vaccinated persons who remain at high risk for meningococcal disease. Cohn AC, MacNeil JR, Clark TA, et al. Prevention and control of meningococcal disease: recommendations of the Advisory Committee on Immunization Practices (ACIP). *MMWR Recomm Rep*. 2013;62(RR-2):1-28.

[s] MenACWY-D (Menactra) can be given as young as 9 months for high-risk persons. MenACWY-CRM (Menveo) can be given as young as 2 months for high-risk persons. Hib-MenCY can be given as young as 6 weeks for high-risk persons. Hib-MenCY is given as a 4-dose series at 2 months, 4 months, 6 months and 12-18 months. MenACWY-TT (MenQuadfi) can be given as young as 2 years for high-risk persons.

[t] For routine non-high risk adolescent vaccination, the minimum age for the booster dose is 16 years.

[u] This dose is not necessary if Bexsero is correctly administered, or if Trumenba is correctly administered to healthy adolescents.

[v] Combination MMRV vaccine can be used for children aged 12 months-12 years.

[w] A second dose of PPSV23 5 years after the first dose is recommended for persons aged ≤65 years at highest risk for serious pneumococcal infection and those who are likely to have a rapid decline in pneumococcal antibody concentration. See https://www.cdc.gov/mmwr/volumes/69/rr/rr6909a1.htm.

[x] The first dose of rotavirus must be administered at age 6 weeks through 14 weeks and 6 days. The vaccine series should not be started for infants aged ≥15 weeks, 0 days. Rotavirus should not be administered to children older than 8 months, 0 days of age regardless of the number of doses received between 6 weeks and 8 months, 0 days of age. If 2 doses of Rotarix (GlaxoSmithKline) are administered as age appropriate, a third dose is not necessary.

[y] Only 1 dose of Tdap is recommended. Subsequent doses should be given as Td or Tdap. For management of a tetanus-prone wound in persons who have received a primary series of tetanus-toxoid–containing vaccine, the minimum interval after a previous dose of any tetanus-containing vaccine is 5 years.

[z] A special grace period of 2 months, based on expert opinion, can be applied to the minimum interval of 3 months, when evaluating records retrospectively, which results in an acceptable minimum interval of 4 weeks. An additional 4 days should not be added on to this grace period.

[aa] A special grace period of 2 months, based on expert opinion, can be applied to the minimum age of 15 months when evaluating records retrospectively, which results in an acceptable minimum age of 13 months. An additional 4 days should not be added on to this grace period.

[bb] If a 1st dose of recombinant zoster vaccine is administered to someone 18-49 years of age, the dose does not need to be repeated. A 4 day grace period can be added to the absolute minimum age of 18 years when evaluating records retrospectively.

Adapted from Table 3-1, ACIP General Best Practice Guidelines for Immunization. **January 2021**

Grace Period: Vaccine doses administered ≤4 days before the minimum interval or age are considered valid; however, local or state mandates might supersede this 4-day guideline.

Recommended intervals between administration of antibody-containing products and measles- or varicella-containing vaccine, by product and indication for vaccination

Product/Indication	Dose (mg IgG/kg) and route[a]	Recommended interval before measles- or live varicella-containing vaccine[b] administration
Blood transfusion—RBCs, washed	10 mL/kg, negligible IgG/kg IV	None
Blood transfusion—RBCs, adenine-saline added	10 mL/kg (10 mg IgG/kg) IV	3 months
Blood transfusion—Packed RBCs (hematocrit 65%)[c]	10 mL/kg (60 mg IgG/kg) IV	6 months
Blood transfusion—Whole blood (hematocrit 35%-50%)[c]	10 mL/kg (80-100 mg IgG/kg) IV	6 months
Blood transfusion—Plasma/platelet products	10 mL/kg (160 mg IgG/kg) IV	7 months
Botulinum Immune Globulin Intravenous (Human)	1.0 mL/kg (50 mg IgG/kg) IV	6 months
Cytomegalovirus IGIV	150 mg/kg maximum	6 months
Hepatitis A IG—Contact prophylaxis	0.1 mL/kg (16.5 mg IgG/kg) IM	6 months[d]
Hepatitis A IG—International travel, <1 month stay	0.1 mL/kg (16.5 mg IgG/kg) IM	6 months[d]
Hepatitis A IG—International travel, ≥1 month stay	0.2 mL/kg (33 mg IgG/kg) IM	6 months[d]
Hepatitis B IG	0.06 mL/kg (10 mg IgG/kg) IM	3 months
IGIV—Replacement therapy for immune deficiencies[e]	300-400 mg/kg IV	8 months
IGIV—Immune thrombocytopenic purpura treatment	400 mg/kg IV	8 months
IGIV—Postexposure varicella prophylaxis	400 mg/kg IV	8 months
IGIV—Postexposure measles prophylaxis for immunocompromised contacts	400 mg/kg IV	8 months
IGIV—Immune thrombocytopenic purpura treatment	1000 mg/kg IV	10 months
IGIV—Kawasaki disease	2 g/kg IV	11 months
Measles prophylaxis IG—Standard (i.e., nonimmunocompromised) contact	0.50 mL/kg (80 mg IgG/kg) IM	6 months
Monoclonal antibody to respiratory syncytial virus F protein (e.g., Synagis [MedImmune])[f]	15 mg/kg IM	None
Rabies IG	20 IU/kg (22 mg IgG/kg) IM	4 months
Tetanus IG	250 units (10 mg IgG/kg) IM	3 months
Varicella IG	125 units/10 kg (60-200 mg IgG/kg) IM, maximum 625 units	5 months

Abbreviations: HIV = human immunodeficiency virus; IG = immune globulin; IgG = immune globulin G; IGIV = intravenous immune globulin; mg IgG/kg = milligrams of immune globulin G per kilogram of body weight; IM = intramuscular; IV = intravenous; RBCs = red blood cells.

[a] This table is not intended for determining the correct indications and dosages for using antibody-containing products. Unvaccinated persons might not be protected fully against measles during the entire recommended interval, and additional doses of IG or measles vaccine might be indicated after measles exposure. Concentrations of measles antibody in an IG preparation can vary by manufacturer's lot. Rates of antibody clearance after receipt of an IG preparation also might vary. Recommended intervals are extrapolated from an estimated half-life of 30 days for passively acquired antibody and an observed interference with the immune response to measles vaccine for 5 months after a dose of 80 mg IgG/kg. Sources: Mason W, Takahashi M, Schneider T. Persisting passively acquired measles antibody following gamma globulin therapy for Kawasaki disease and response to live virus vaccination [Abstract 311]. Presented at the 32 meeting of the Interscience Conference on Antimicrobial Agents and Chemotherapy, Los Angeles, California, October, 1992, AND Siber GR, Werner BG, Halsey NA, et al. Interference of immune globulin with measles and rubella immunization. J Pediatr. 1993;122(2):204-211. DOI: 10.1016/S0022-3476(06)80114-9, AND Mason WH, Schneider TL, Takahashi M. Duration of passively acquired measles antibody and response to live virus vaccination allowing gamma globulin therapy for Kawasaki syndrome. Prog Pediatr Cardiol. 1992;1(1):82. DOI: 10.1016/S1058-9813(06)80067-6. The extrapolation is performed by counting months from 80 mg down to (1-3 mg) (e.g. 80 >>> 40 >> >20 >> >10 >>> 5>>>2.5….equal to FIVE intervals) and adding a grace month, so 80 mg values take a "6 month" interval).

[b] Does not include zoster vaccine recombinant because this vaccine is non-live.

[c] Assumes a serum IgG concentration of 16 mg/mL.

[d] The reason the interval is 6 months (and not 4 months) is that the quantity of 16.5 IgG/kg does not reflect the upper ceiling of the quantity of measles IgG in the product.

[e] Measles vaccination is recommended for children with mild or moderate immunosuppression from HIV infection, and varicella vaccination may be considered for children with mild or moderate immunosuppression from HIV infection, but both are contraindicated for persons with severe immunosuppression from HIV or any other immunosuppressive disorder.

[f] Contains antibody only to respiratory syncytial virus.

Adapted from Table 3-5, ACIP General Best Practice Guidelines for Immunization. January 2021

Revised February 2021

Appendix A

Vaccination of persons with primary and secondary immunodeficiencies

Vaccination of persons with primary immunodeficiencies

Primary immunodeficiency	Specific Immunodeficiency	Contraindicated vaccines[a]	Risk-specific recommended vaccines[a]	Effectiveness and comments
B-lymphocyte (humoral)	Severe antibody deficiencies (e.g., X-linked agammaglobulinemia and common variable immunodeficiency)	OPV[b] Smallpox[c] LAIV BCG Ty21a (live typhoid) Yellow fever MMR MMRV	Pneumococcal Hib (children 12-59 months of age)[d]	The effectiveness of any vaccine is uncertain if it depends only on the humoral response (e.g., PPSV23). IGIV interferes with the immune response to measles vaccine and possibly varicella vaccine
	Less severe antibody deficiencies (e.g., selective IgA deficiency and IgG subclass deficiency)	OPV[b] BCG Yellow fever[e] Other live vaccines appear to be safe	Pneumococcal Hib (children 12-59 months of age)[d]	All vaccines likely effective; immune response might be attenuated
T-lymphocyte (cell-mediated and humoral)	Complete defects (e.g., SCID disease, complete DiGeorge syndrome)	All live vaccines[f],[g],[h]	Pneumococcal Hib (children 12-59 months of age)[d]	Vaccines likely to be effective
	Partial defects (e.g., most patients with DiGeorge syndrome, Wiskott-Aldrich syndrome, ataxia-telangiectasia)	All live vaccines[f],[g],[h]	Pneumococcal Meningococcal Hib (children 12-59 months of age)[d]	Effectiveness of any vaccine depends on degree of immune suppression
	Interferon-gamma/ Interleukin 12 axis deficiencies	All live bacterial vaccines (All live vaccines contraindicated in Interferon-gamma or interferon-alpha deficiencies)	None	—
Complement	Persistent complement, properdin, or factor B deficiency	None	Pneumococcal Meningococcal Hib (children 12-59 months of age)[d]	All routine vaccines likely effective
	Taking eculizumab (Soliris) and/or ravulizumab (Ultomiris)	None	Meningococcal	—
Phagocytic function	Chronic granulomatous disease	Live bacterial vaccines[f]	None	Live viral vaccines likely safe and effective
	Phagocytic deficiencies that are undefined or accompanied by defects in T-cell and NK cell dysfunction (such as a Chediak-Higashi syndrome, Leukocyte Adhesion Deficiency [LAD], and myeloperoxidase deficiency)	MMR MMRV Varicella OPV[b] Smallpox BCG LAIV Ty21a Yellow Fever and bacterial vaccines[f],[g]	Pneumococcal	All inactivated vaccines safe and likely effective

Vaccination of persons with secondary immunodeficiencies

Secondary immunodeficiency	Contraindicated vaccines[a]	Risk-specific recommended vaccines[a]	Effectiveness and comments
HIV/AIDS	OPV[b] Smallpox BCG LAIV MMRV Withhold MMR and varicella in severely immunocompromised persons Yellow fever vaccine might have a contraindication or a precaution depending on clinical parameters of immune function[i]	Pneumococcal Hib[d], [j] HepB MenACWY	MMR and Varicella vaccine in those with mild immunosuppression, rotavirus, and all inactivated vaccines, including inactivated influenza as per routine vaccination schedule, might be effective[k]
Generalized malignant neoplasm, transplantation, immunosuppressive or radiation therapy	Live viral and bacterial, depending on immune status[f],[g],[l]	Pneumococcal Hib[m]	Effectiveness of any vaccine depends on degree of immune suppression
Asplenia	LAIV	Pneumococcal Meningococcal Hib[d],[n]	All routine vaccines likely effective
Chronic renal disease	None	Pneumococcal HepB[o]	All routine vaccines likely effective

Abbreviations: AIDS = acquired immunodeficiency syndrome; BCG = bacille Calmette-Guérin; HepB = hepatitis B; Hib = *Haemophilus influenzae* type b; HIV = human immunodeficiency virus; IG = immunoglobulin; IGIV = immune globulin intravenous; IgA = immune globulin A; IgG = immune globulin G; LAIV = live, attenuated influenza vaccine; MMR = measles, mumps, and rubella; MMRV = measles, mumps, rubella, and varicella; OPV = oral poliovirus vaccine (live); PPSV23= pneumococcal polysaccharide vaccine; SCID = severe combined immunodeficiency; Ty21a = live oral typhoid vaccine.

[a] Other vaccines that are universally or routinely recommended should be given if not contraindicated. An exception is patients with B-cell deficiencies receiving immunoglobulins, who should not receive either live or inactivated vaccines, due to safety (live vaccines) and efficacy (live and inactivated vaccines) concerns.

[b] OPV is no longer available in the United States.

[c] This table refers to contraindications for nonemergency vaccination (i.e., the ACIP recommendations); emergency response recommendations are addressed in the clinical guidance for smallpox vaccine use in an emergency.

[d] Children 12-59 months: if unimmunized or received zero or only 1 dose, and that dose was administered before 12 months of age, should receive 2 Hib doses, 8 weeks apart; if received 2 or more doses before age 12 months, and none after 12 months, should receive 1 Hib dose 8 weeks after the last dose; if completed a primary series and received a booster dose at age 12 months or older, no additional Hib doses are recommended.

[e] There are no data to support IgA deficiency as a contraindication for yellow fever vaccine.

[f] Live bacterial vaccines: BCG and oral Ty21a Salmonella Typhi vaccine.

[g] Live viral vaccines: MMR, MMRV, OPV, LAIV, yellow fever, rotavirus, varicella, and vaccinia (smallpox). Nonemergency smallpox vaccination is not recommended for children younger than 18 years or the general public.

[h] Regarding T-lymphocyte immunodeficiency as a contraindication for rotavirus vaccine, data exist only for SCID.

[i] Symptomatic HIV infection or CD4+ T-lymphocyte count of <200/mm^3 or <15% of total lymphocytes for children aged <6 years is a contraindication to yellow fever vaccine administration. Asymptomatic HIV infection with CD4+ T-lymphocyte count of 200-499/mm^3 for persons aged ≥6 years or 15%-24% of total lymphocytes for children aged <6 years is a precaution for yellow fever vaccine administration. Details of yellow fever vaccine recommendations are available from CDC.

[j] Patients 5-18 years of age who have not received a Hib primary series and a booster dose or at least one Hib dose after 14 months of age.

[k] HIV-infected children should be considered for varicella vaccine if CD4+ T-lymphocyte count is ≥15% and should receive MMR vaccine if they are aged ≥12 months and do not have 1) evidence of current severe immunosuppression (i.e., individuals aged ≤5 years must have CD4+T lymphocyte [CD4] percentages ≥15% for ≥6 months; and individuals aged >5 years must have CD4+percentages ≥15% and CD4+≥200 lymphocytes/mm^3 for ≥6 months) and 2) other current evidence of measles, rubella, and mumps immunity. In cases when only CD4+cell counts or only CD4+percentages are available for those older than age 5 years, the assessment of severe immunosuppression can be based on the CD4+values (count or percentage) that are available. In cases when CD4+percentages are not available for those aged ≤5 years, the assessment of severe immunosuppression can be based on age-specific CD4+counts at the time CD4+counts were measured; i.e., absence of severe immunosuppression is defined as ≥6 months above age-specific CD4+count criteria: CD4+count >750 lymphocytes/mm^3 while aged ≤12 months and CD4+count ≥500 lymphocytes/mm^3 while aged 1 through 5 years. See McLean HQ, Fiebelkorn AP, Temte JL, Wallace GS. Prevention of measles, rubella, congenital rubella syndrome, and mumps, 2013: summary recommendations of the Advisory Committee on Immunization Practices (ACIP). MMWR Recomm Rep. 2013;62(RR-4):1-34.

[l] Withholding inactivated vaccines also is recommended with some forms of immunosuppressive therapy, like anti-CD20 antibodies, induction or consolidation chemotherapy, or patients with major antibody deficiencies receiving immunoglobulins. Inactivated influenza vaccine is an exception, but consideration should be given to repeating doses of any inactivated vaccine administered during these therapies.

[m] Persons younger than 60 months undergoing chemotherapy or radiation therapy who have not received a Hib primary series and a booster dose or at least one Hib dose after 14 months of age; HCT patients of any ages, regardless of Hib vaccine history.

[n] Persons older than 59 months who are asplenic and persons 15 months or older who are undergoing elective splenectomy who have not received a Hib primary series and a booster dose or at least one Hib dose after 14 months of age.

[o] Indicated based on the risk from dialysis-based bloodborne transmission.

Adapted from Table 8-1, ACIP General Best Practice Guidelines for Immunization. January 2021

Appendix A

Contraindications and Precautions[a] to Commonly Used Vaccines

Vaccine	Contraindications	Precautions
DT, Td	Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component	GBS <6 weeks after previous dose of tetanus-toxoid–containing vaccine History of Arthus-type hypersensitivity reactions after a previous dose of diphtheria-toxoid-containing or tetanus-toxoid–containing vaccine; defer vaccination until at least 10 years have elapsed since the last tetanus-toxoid-containing vaccine Moderate or severe acute illness with or without fever
DTaP	Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component Encephalopathy (e.g., coma, decreased level of consciousness, prolonged seizures), not attributable to another identifiable cause, within 7 days of administration of previous dose of DTP or DTaP	Progressive neurologic disorder, including infantile spasms, uncontrolled epilepsy, progressive encephalopathy; defer DTaP until neurologic status clarified and stabilized GBS <6 weeks after previous dose of tetanus-toxoid–containing vaccine History of Arthus-type hypersensitivity reactions after a previous dose of diphtheria-toxoid–containing or tetanus-toxoid–containing vaccine; defer vaccination until at least 10 years have elapsed since the last tetanus-toxoid–containing vaccine Moderate or severe acute illnes with or without fever
Hepatitis A	Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component	Moderate or severe acute illness with or without fever
Hepatitis B	Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component Hypersensitivity to yeast	Moderate or severe acute illness with or without fever
Hib	Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component Age <6 weeks	Moderate or severe acute illness with or without fever
HPV[b]	Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component, including yeast	Moderate or severe acute illness with or without fever
IIV	Severe allergic reaction (e.g., anaphylaxis) after previous dose of influenza vaccine or to vaccine component.	GBS <6 weeks after a previous dose of influenza vaccine Moderate or severe acute illness with or without fever Egg allergy other than hives (e.g., angioedema, respiratory distress, lightheadedness, recurrent emesis; or required epinephrine or another emergency medical intervention). If a vaccine other than RIV or ccIIV is used, the selected vaccine should be administered in an inpatient or outpatient medical setting (including but not necessarily limited to hospitals, clinics, health departments, and physician offices). Vaccine administration should be supervised by a health care provider who is able to recognize and manage severe allergic reactions.

Vaccine	Contraindications	Precautions
IPV	Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component	Pregnancy Moderate or severe acute illness with or without fever
LAIV[c]	Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component Concomitant use of aspirin or aspirin-containing medication in children and adolescents LAIV4 should not be administered to persons who have taken oseltamivir or zanamivir within the previous 48 hours, peramivir within the previous 5 days, or baloxavir within the previous 17 days.[e] Pregnancy Children aged 2 through 4 years who have received a diagnosis of asthma or whose parents or caregivers report that a health care provider has told them during the preceding 12 months that their child had wheezing or asthma or whose medical record indicates a wheezing episode has occurred during the preceding 12 months. Persons with active cerebrospinal fluid/oropharyngeal communications/leaks. Close contacts and caregivers of severely immunosuppressed persons who require a protected environment. Persons with cochlear implants (due to the potential for CSF leak, which might exist for some period of time after implantation. Providers might consider consultation with a specialist concerning risk of persistent CSF leak if an age-appropriate inactivated or recombinant vaccine cannot be used). Altered Immunocompetence Anatomic or functional asplenia (e.g. sickle cell disease)	GBS <6 weeks after a previous dose of influenza vaccine Asthma in persons aged 5 years old or older Medical conditions which might predispose to higher risk of complications attributable to influenza[d] Moderate or severe acute illness with or without fever
MenACWY	Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component, including yeast	Moderate or severe acute illness with or without fever Preterm birth (MenACWY-CRM)[f]
MenB	Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component	Moderate or severe acute illness with or without fever Pregnancy Latex sensitivity (MenB-4C)

Vaccine	Contraindications	Precautions
MMR[g],[h]	Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component Pregnancy Known severe immunodeficiency (e.g., from hematologic and solid tumors, receipt of chemotherapy, congenital immunodeficiency, long-term immunosuppressive therapy[i] or patients with HIV infection who are severely immunocompromised) Family history of altered immunocompetence[j]	Recent (≤11 months) receipt of antibody-containing blood product (specific interval depends on product) History of thrombocytopenia or thrombocytopenic purpura Need for tuberculin skin testing or interferon-gamma release assay (IGRA) testing[k] Moderate or severe acute illness with or without fever
MPSV4	Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component	Moderate or severe acute illness with or without fever
PCV13	Severe allergic reaction (e.g., anaphylaxis) after a previous dose of PCV13 or any diphtheria-toxoid–containing vaccine or to a component of a vaccine (PCV13 or any diphtheria-toxoid–containing vaccine), including yeast	Moderate or severe acute illness with or without fever
PPSV23	Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component	Moderate or severe acute illness with or without fever
RIV	Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component	GBS <6 weeks after a previous dose of influenza vaccine Moderate or severe acute illness with or without fever
Rotavirus	Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component SCID History of intussusception	Altered immunocompetence other than SCID Chronic gastrointestinal disease[l] Spina bifida or bladder exstrophy[l] Moderate or severe acute illness with or without fever
Tdap	Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component Encephalopathy (e.g., coma, decreased level of consciousness, prolonged seizures), not attributable to another identifiable cause, within 7 days of administration of previous dose of DTP, DTaP, or Tdap	GBS <6 weeks after a previous dose of tetanus-toxoid–containing vaccine Progressive or unstable neurological disorder, uncontrolled seizures, or progressive encephalopathy until a treatment regimen has been established and the condition has stabilized History of Arthus-type hypersensitivity reactions after a previous dose of diphtheria-toxoid—containing or tetanus-toxoid–containing vaccine; defer vaccination until at least 10 years have elapsed since the last tetanus-toxoid–containing vaccine Moderate or severe acute illness with or without fever

Vaccine	Contraindications	Precautions
Varicella[g],[h]	Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component Known severe immunodeficiency (e.g., from hematologic and solid tumors, receipt of chemotherapy, congenital immunodeficiency, long-term immunosuppressive therapy[i] or patients with HIV infection who are severely immunocompromised)[g] Pregnancy Family history of altered immunocompetence[j]	Recent (≤11 months) receipt of antibody-containing blood product (specific interval depends on product) Moderate or severe acute illness with or without fever Use of aspirin or aspirin-containing products[m] Receipt of specific antiviral drugs (acyclovir, famciclovir, or valacyclovir) 24 hours before vaccination (avoid use of these antiviral drugs for 14 days after vaccination)
Zoster	Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component	Moderate or severe acute illness with or without fever

Abbreviations: DT = diphtheria and tetanus toxoids; DTaP = diphtheria and tetanus toxoids and acellular pertussis; DTP = diphtheria toxoid, tetanus toxoid, and pertussis; GBS = Guillain-Barré syndrome; Hib = *Haemophilus influenzae* type b; HIV = human immunodeficiency virus; HPV = human papillomavirus; IIV = inactivated influenza vaccine; IPV = inactivated poliovirus; LAIV = live, attenuated influenza vaccine; MenACWY = quadrivalent meningococcal conjugate vaccine; MMR = measles, mumps, and rubella; MPSV4 = quadrivalent meningococcal polysaccharide vaccine; PCV13 = pneumococcal conjugate vaccine; PPSV23= pneumococcal polysaccharide vaccine; SCID = severe combined immunodeficiency; RIV=recombinant influenza vaccine; Td = tetanus and diphtheria toxoids; Tdap = tetanus toxoid, reduced diphtheria toxoid, and acellular pertussis.

[a] Events or conditions listed as precautions should be reviewed carefully. Benefits of and risks for administering a specific vaccine to a person under these circumstances should be considered. If the risk from the vaccine is believed to outweigh the benefit, the vaccine should not be administered. If the benefit of vaccination is believed to outweigh the risk, the vaccine should be administered. Whether and when to administer DTaP to children with proven or suspected underlying neurologic disorders should be decided on a case-by-case basis.

[b] HPV vaccine is not recommended during pregnancy.

[c] In addition, ACIP recommends LAIV not be used for pregnant women, immunosuppressed persons, and children aged 2-4 years who have asthma or who have had a wheezing episode noted in the medical record within the past 12 months, or for whom parents report that a health-care provider stated that they had wheezing or asthma within the last 12 months. LAIV should not be administered to persons who received influenza antiviral medications oseltamivir or zanamivir within the previous 48 hours, peramivir within the previous 5 days, or baloxavir within the previous 17 days. Persons who care for severely immunosuppressed persons who require a protective environment should not receive LAIV, or should avoid contact with such persons for 7 days after receipt.

[d] See reference: See reference: Grohskopf L, Alyanak E, Broder KR, et al., Prevention and Control of Seasonal Influenza with Vaccines: Recommendations of the Advisory Committee on Immunization Practices — United States, 2020–21 Influenza Season. MMWR Recomm Rep. 2020;69(No. RR-8):1-26.

[e] These values are based on the clearance of the particular antiviral. LAIV4 should not be administered to persons who have taken oseltamivir or zanamivir within the previous 48 hours, peramivir within the previous 5 days, or baloxavir within the previous 17 days. This "contraindication" is due to concern with reduced effectiveness of the vaccine. To obtain specific information, please refer to Grohskopf LA, Alyanak, E, Broder KR, et. al. Prevention and Control of Seasonal Influenza with Vaccines: Recommendations of the Advisory Committee on Immunization Practices — United States, 2020–21 Influenza Season. MMWR Recomm Rep 2020;69(No. RR-8:1-26. Also at https://www.cdc.gov/mmwr/volumes/69/rr/pdfs/rr6908a1-H.pdf.

[f] This precaution applies to infants younger than 9 months old.

[g] HIV-infected children may receive varicella vaccine if CD4+ T-lymphocyte count is ≥15% and should receive MMR vaccine if they are aged ≥12 months and do not have evidence of current severe immunosuppression (i.e., individuals aged ≤5 years must have CD4+T lymphocyte [CD4] percentages ≥15% for ≥6 months; and individuals aged >5 years must have CD4+percentages ≥15% and CD4+≥200 lymphocytes/mm^3 for ≥6 months) or other current evidence of measles, rubella, and mumps immunity. In cases when only CD4+cell counts or only CD4+percentages are available for those older than age 5 years, the assessment of severe immunosuppression can be based on the CD4+values (count or percentage) that are available. In cases when CD4+percentages are not available for those aged ≤5 years, the assessment of severe immunosuppression can be based on age-specific CD4+counts at the time CD4+counts were measured; i.e., absence of severe immunosuppression is defined as ≥6 months above age-specific CD4+count criteria: CD4+count >750 lymphocytes/mm^3 while aged ≤12 months and CD4+count ≥500 lymphocytes/mm^3 while aged 1 through 5 years. Sources: 1) McLean HQ, Fiebelkorn AP, Temte JL, Wallace GS. Prevention of measles, rubella, congenital rubella syndrome, and mumps, 2013: summary recommendations of the Advisory Committee on Immunization Practices (ACIP). MMWR Recomm Rep. 2013;62(RR-4):1-34. 2) CDC. Prevention of pneumococcal disease: recommendations of the Advisory Committee on Immunization Practices (ACIP). MMWR Recomm Rep. 1997;46(RR-8):1-24.

[h] MMR and varicella-containing vaccines can be administered on the same day. If not administered on the same day, these vaccines should be separated by at least 28 days.

[i] A substantially immunosuppressive steroid dose is considered to be ≥2 weeks of daily receipt of 20 mg or 2 mg/kg body weight of prednisone or equivalent.

[j] Family history of congenital or hereditary immunodeficiency in first-degree relatives (e.g., parents and siblings), unless the immune competence of the potential vaccine recipient has been substantiated clinically or verified by a laboratory.

[k] If active tuberculosis is suspected, MMR should be delayed. Measles vaccination might suppress tuberculin reactivity temporarily. Measles-containing vaccine can be administered on the same day as tuberculin skin or IGRA testing. If testing cannot be performed until after the day of MMR vaccination, the test should be postponed for ≥4 weeks after the vaccination. If an urgent need exists to skin test or IGRA, do so with the understanding that reactivity might be reduced by the vaccine.

[l] For RV1 only, based on latex in product/packaging. Note that anaphylactic allergy to latex is covered in the contraindication, and would also be isolated to RV 1 in the case of latex. For more details see Cortese MM, Parashar UD. Prevention of rotavirus gastroenteritis among infants and children: recommendations of the Advisory Committee on Immunization Practices (ACIP). MMWR Recomm Rep. 2009;58(RR-2):1-25.

[m] No adverse events associated with the use of aspirin or aspirin-containing products after varicella vaccination have been reported; however, the vaccine manufacturer recommends that vaccine recipients avoid using aspirin or aspirin-containing products for 6 weeks after receiving varicella vaccines because of the association between aspirin use and Reye syndrome after varicella. Vaccination with subsequent close monitoring should be considered for children who have rheumatoid arthritis or other conditions requiring therapeutic aspirin. The risk for serious complications associated with aspirin is likely to be greater in children in whom natural varicella develops than it is in children who receive the vaccine containing attenuated VZV. No association has been documented between Reye syndrome and analgesics or antipyretics that do not contain aspirin.

Adapted from Table 4-1, ACIP General Best Practice Guidelines for Immunization. January 2021

Appendix A

Additional Resources for Schedules and Recommendations

Immunization Schedules

- Recommended Immunization Schedules for Persons Aged 0 Through 18 Years: https://www.cdc.gov/vaccines/schedules/hcp/imz/child-adolescent.html
- Catch-up Schedule for Persons Aged 0 Through 18 Years: https://www.cdc.gov/vaccines/schedules/hcp/imz/catchup.html
- Recommended Immunization Schedules for Persons Aged 19 Years or Older: https://www.cdc.gov/vaccines/schedules/hcp/imz/adult.html
- Schedules Changes & Guidance: https://www.cdc.gov/vaccines/schedules/hcp/schedule-changes.html
- Summary of Recommendations for Child/Teen Immunization (Immunization Action Coalition): http://www.immunize.org/catg.d/p2010.pdf
- Summary of Recommendations for Adult Immunization (Immunization Action Coalition): http://www.immunize.org/catg.d/p2011.pdf
- More Schedule-Related Resources (e.g. schedule presentation graphics, prior immunization schedules): https://www.cdc.gov/vaccines/schedules/hcp/schedule-related-resources.html

Recommendations

- Vaccine-specific ACIP Recommendations and Guidelines: https://www.cdc.gov/vaccines/hcp/acip-recs/index.html
- Vaccines by Disease: https://www.cdc.gov/vaccines/vpd/vaccines-diseases.html
- Adults with Health Conditions: https://www.cdc.gov/vaccines/adults/rec-vac/health-conditions/index.html
- Guide to Contraindications and Precautions to Commonly Used Vaccines (Immunization Action Coalition): http://www.immunize.org/catg.d/p3072a.pdf
- Guide to Contraindications and Precautions to Commonly Used Vaccines in Adults (Immunization Action Coalition): http://www.immunize.org/catg.d/p3072.pdf
- Recommended Vaccines for Healthcare Workers: https://www.cdc.gov/vaccines/adults/rec-vac/hcw.html
- Travel Vaccines: https://wwwnc.cdc.gov/travel/page/travel-vaccines
- Vaccines for Immigrants and Refugees: https://www.cdc.gov/vaccines/adults/rec-vac/immigrants-refugees.html