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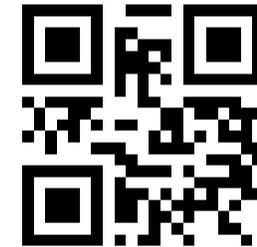
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This webinar is being presented in partnership with
Texas Epidemic Public Health Institute (TEPHI)



IMMUNIZATIONS: Vaccines Cause Adults

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Texas Epidemic Public Health Institute

UTHealth School of Public Health

August 23, 2023

Topics

- **How vaccines work**
- **Types of vaccines**
- **Individual and community protection**
- **How vaccines are licensed/safety**
- **Myths**
- **Current immunization schedules**
- **Public Law**
- **Current coverage rates**
- **School-based immunizations**
- **Exemptions**
- **How do we increase immunization rates?**

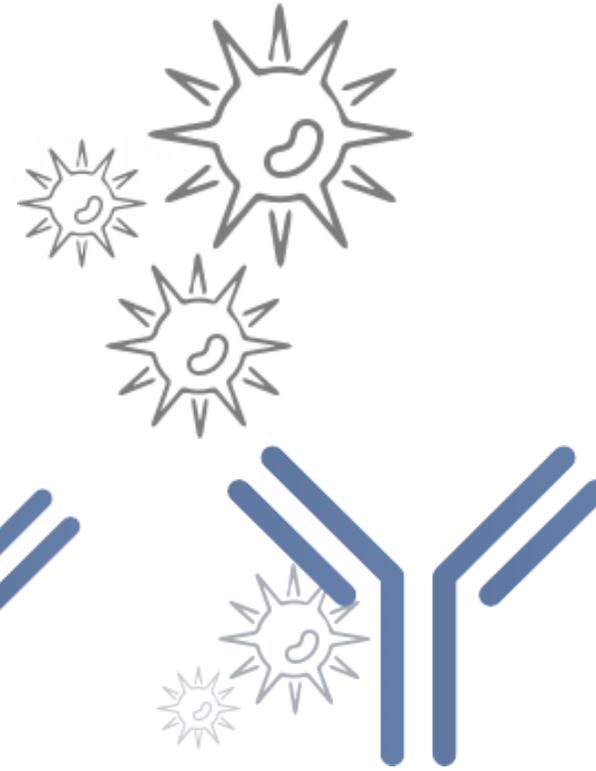
Vaccines are a top 10 public health achievements of the 20th century*

Disease	Before Vaccine	1998	Decrease
Smallpox	48,164	0	100%
Diphtheria	175,885	1	100%
Pertussis	147,271	6,279	95%
Tetanus	1,312	34	97.4%
Polio	16,316	0	100%
Measles	503,282	89	99.6%
Mumps	152,209	606	99.6%
CRS	823	5	99.4%
HiB	20,000	54	99.7%

*<http://www.cdc.gov/MMWR/preview/mmwrhtml/00056796.htm>

How vaccines work

Immune system is exposed to a weakened, killed, or part of a pathogen



The body's immune cells make antibodies to attack the pathogen

If the body is exposed to the pathogen again, the body will be prepared with antibodies

Types of vaccines

- **Inactivated: contain killed pathogen**
 - Ex. hepatitis A, rabies, inactivated poliovirus vaccine, flu
- **Subunit: contain antigenic component of pathogen; can be made through recombinant technology**
 - Ex. Hib, HPV, pneumococcal, flu
- **Toxoid: contain toxin made by pathogen**
 - Ex. Diphtheria, tetanus
- **Live attenuated: contain weakened pathogen**
 - Ex. MMR, rotavirus, varicella, oral polio, flu
- **mRNA: mRNA results in production *in vivo* of viral proteins**
 - Ex: SARS CoV-2, future HIV?

Benefits of immunization

- **Protect the individual**
 - Even from cancer – HBV and liver ca; HPV and cervical, throat, penile, anal ca
- **Build community immunity/stop spread of disease**
- **Protect people too sick to vaccinate**
- **Protect people with contraindications**
- **Protect people too young or too old to vaccinate**
- **Protect those not fully immunized & those who do not get full protection from vaccination**
- **Strengthen the body's natural immunity**

**One human
disease has been
eradicated
through
immunization**

- **Eradicated:**
 - **1979 – smallpox**
 - **targeted – polio**
- **Targets for elimination of transmission**
 - **Measles**
 - **Rubella**
- **Targets for elimination as a public health problem**
 - **Bacterial Meningitis (S. pneumoniae, N. meningitidis)**
 - **Cervical Cancer**
 - **Cholera**
 - **Hepatitis B**
 - **Rabies**
 - **Tetanus**

Vaccine components

- **Provide immunity**
 - **Antigens**
 - **Adjuvants**
- **Keep vaccines safe and long lasting**
 - **Preservatives**
 - **Stabilizers**
- **Used during the production of vaccines**
 - **Cell culture materials**
 - **Inactivating ingredients**
 - **Antibiotics**

Ensuring vaccines are safe and effective

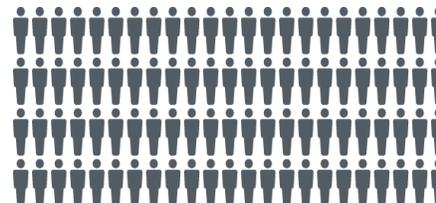
PHASE 1



20-100 Healthy Volunteers

- Is this vaccine safe?
- Does this vaccine seem to work?
- Are there serious side effects?
- How is dose related to side effects?

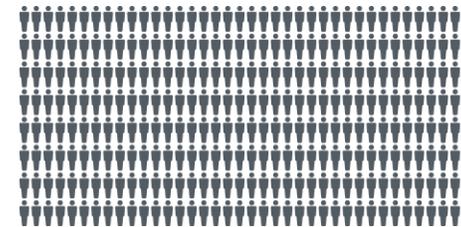
PHASE 2



Several Hundred Thousands of Volunteers

- What are the most common short-term side effects?
- How are the volunteers' immune systems responding to the vaccine?

PHASE 3



Hundreds of Thousands of Volunteers

- How do people who get the vaccine and people who do not compare?
- Is the vaccine safe?
- Is the vaccine effective?

Vaccine licensure: FDA

- **Before a vaccine can be approved, company submits Biological License Application to FDA. This includes:**
 - pre-clinical and clinical data
 - details about the manufacturing process
 - information about the manufacturing facility
- **FDA looks at clinical trial data to see if results show vaccine is safe and effective. BLA also contains prescribing information, based on vaccine usage, dosage, & administration—all based on scientific data. Based on these data, FDA decides on whether to approve the vaccine for use.**
- **In some cases, FDA Vaccines and Related Biological Products Advisory Committee (independent scientific and public health experts) provides input on scientific data looking at safety, effectiveness, and use of the vaccine.**

Vaccine licensure: FDA

- After FDA approves new vaccine, continues to monitor vaccine production activities, including regular inspections of the manufacturing facility to make sure FDA regulations are being followed. This continues as long as the manufacturer holds a license for the vaccine product.
- FDA monitors vaccine product's quality in real-time by requiring manufacturers to submit samples of each vaccine lot for testing. These tests usually report:
 - Safety
 - Purity
 - Potency
 - Consistency across lots

Vaccine licensure: ACIP

- After FDA approval, request goes to ACIP, a group of medical & public health experts who develop recommendations for use of a vaccine. ACIP considers:
 - How safe and effective the vaccine is when given at specific ages.
 - How serious the vaccine-preventable disease is.
 - How many would get the disease if there was no vaccine.
- After ACIP recommends a vaccine, CDC Director decides whether to approve the recommendation. Once Director approves the recommendation, it becomes the official CDC public health guidance for safe use of the vaccine in the US. The approved recommendation can also lead to a vaccine becoming part of the official U.S. adult and childhood immunization schedules.

Continuous safety monitoring



Collect &
review data



Monitor side
effects



Identify &
understand
risks



Communicate
& manage
risks
appropriately

VAERS

- **National spontaneous reporting system for adverse events after US-licensed vaccines**
- **Purpose:**
 - **Identify new and/or rare adverse event* following immunization**
 - **Monitor trends of known adverse events**
 - **Identify potential patient risk factors for particular types of adverse events**
 - **Generate hypotheses**
 - **Provide information for public health policies on vaccine safety**
 - **Monitor vaccine lot safety**

* Adverse events are defined as health effects that occur after immunization that may or may not be causally related to the vaccine

Limitations of VAERS

- **Underreporting**
- **Stimulated reporting due to media attention and other factors**
- **Possibly incomplete and inaccurate data on report form**
- **Lack of availability of denominator data**
 - No information on number of persons vaccinated
 - No information on background rates of adverse events in the population
- **VAERS generally cannot determine if adverse event report was coincidental or caused by a vaccine**

Public Health Law and Immunizations

- **Public Health is a states' right issue**
- **Supreme Court cases**
 - **1905 – Jacobsen v State of Massachusetts**
 - **2022 – Biden v. Missouri**
 - **2022 – National Federation of Individual Business v OSHA**

Vaccines protect the community

Community Immunity

- When a sufficient proportion of a population is immune (recovered or immunized) to an infectious disease to make spread from person to person unlikely.

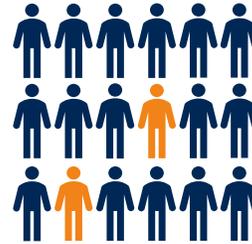
Coverage Threshold

- The minimum percentage of individuals immune to a disease needed to prevent an outbreak.

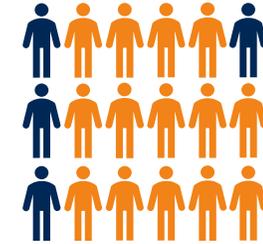
How community immunity works

-  Not immunized but still healthy
-  Immunized & healthy
-  Not immunized, sick & contagious

When no one is immunized



Disease spreads through population



When some of the population is immunized



Disease spreads through some of population



When most of the population is immunized



Spread of disease is controlled



Vaccines are not just for children

- Most vaccines require multiple doses during childhood (e.g., MMR, DPT, HBV, polio)
- Others require boosters throughout the lifespan to keep up protection (e.g., DPT)
- Viruses that mutate frequently need new formulations (e.g., influenza, SARS CoV-2)
- Other vaccines are only recommended for adults (e.g., shingles, pneumonia)

Common Myths

Myth: Vaccines cause autism



MYTH

- Myth incited by flawed, unethical, and fraudulent study



FACT

- Study retracted and lead author had his medical license revoked
- Many subsequent studies have found no link exists between vaccines and their ingredients and autism

Common Myths

Myth: It is better to space out childhood vaccines using an alternative schedule

MYTH



- Myth that routine immunization schedule exposes children to too many pathogens

FACT



- From birth, baby's immune system is well equipped to respond to vaccines
- All of us exposed to many more antigenic substances than in immunization schedule
- No evidence that spreading out the schedule improves health outcomes but delaying vaccines increases the time children will be susceptible to diseases

Common Myths

**Myth: Vaccines
cause the diseases
they are designed to
prevent**



MYTH

- Myth that vaccines can cause the disease they are designed to prevent
- Myth that immunization could make children sick



FACT

- Inactivated, subunit, mRNA vaccines cannot cause disease
- It is nearly unheard of for live attenuated vaccines to cause disease
- Mild symptoms are rare, but can indicate immune response (not infection)
- Vaccines undergo extensive testing before approval

Common Myths

Myth: Vaccinated individuals can still get sick



MYTH

- No point in getting immunized since vaccinated people can still get the illness



FACT

- While true that vaccines may not prevent illness (e.g., influenza, SARS-CoV-2), they can prevent serious illnesses, hospitalizations, and deaths

Common Myths

Myth: My child is at greater risk of harm from a vaccine than from disease itself



MYTH

- **Myth that vaccines are unsafe and more dangerous than the disease they are preventing**



FACT

- **The risks of natural infection are greater than the risks of immunization for every recommended vaccine**
- **Immunization is the best protection against deadly diseases**
- **Severe side effects from immunization are incredibly rare**
- **Immunization prevents individual illness and large-scale outbreaks**

Diseases and the Vaccines that Prevent Them

BIRTH-6 YEARS OLD

DISEASE	VACCINE	DISEASE SPREAD BY	DISEASE SYMPTOMS	DISEASE COMPLICATIONS
Hepatitis B	HepB vaccine protects against hepatitis B.	Contact with blood or body fluids	May be no symptoms, fever, headache, weakness, vomiting, jaundice (yellowing of skin and eyes), joint pain	Chronic liver infection, liver failure, liver cancer, death
Rotavirus	RV vaccine protects against rotavirus.	Through the mouth	Diarrhea, fever, vomiting	Severe diarrhea, dehydration, death
Diphtheria	DTaP* vaccine protects against diphtheria.	Air, direct contact	Sore throat, mild fever, weakness, swollen glands in neck	Swelling of the heart muscle, heart failure, coma, paralysis, death
Pertussis (whooping cough)	DTaP* vaccine protects against pertussis (whooping cough).	Air, direct contact	Severe cough, runny nose, apnea (a pause in breathing in infants)	Pneumonia (infection in the lungs), death
Tetanus	DTaP* vaccine protects against tetanus.	Exposure through cuts in skin	Stiffness in neck and abdominal muscles, difficulty swallowing, muscle spasms, fever	Broken bones, breathing difficulty, death
Haemophilus influenzae type b (Hib)	Hib vaccine protects against <i>Haemophilus influenzae</i> type b.	Air, direct contact	May be no symptoms unless bacteria enter the blood	Meningitis (infection of the covering around the brain and spinal cord), intellectual disability, epiglottitis (life-threatening infection that can block the windpipe and lead to serious breathing problems), pneumonia (infection in the lungs), death
Pneumococcal disease (PCV13, PCV15)	PCV vaccine protects against pneumococcal disease.	Air, direct contact	May be no symptoms, pneumonia (infection in the lungs)	Bacteremia (blood infection), meningitis (infection of the covering around the brain and spinal cord), death
Polio	IPV vaccine protects against polio.	Air, direct contact, through the mouth	May be no symptoms, sore throat, fever, nausea, headache	Paralysis, death
Coronavirus disease 2019 (COVID-19)	COVID-19 vaccine protects against severe complications from coronavirus disease 2019.	Air, direct contact	May be no symptoms, fever, muscle aches, sore throat, cough, runny nose, diarrhea, vomiting, new loss of taste or smell	Pneumonia (infection in the lungs), respiratory failure, blood clots, bleeding disorder, injury to liver, heart or kidney, multi-system inflammatory syndrome, post-COVID syndrome, death
Influenza (Flu)	Flu vaccine protects against influenza.	Air, direct contact	Fever, muscle pain, sore throat, cough, extreme fatigue	Pneumonia (infection in the lungs), bronchitis, sinus infections, ear infections, death
Measles	MMR** vaccine protects against measles.	Air, direct contact	Rash, fever, cough, runny nose, pink eye	Encephalitis (brain swelling), pneumonia (infection in the lungs), death
Mumps	MMR** vaccine protects against mumps.	Air, direct contact	Swollen salivary glands (under the jaw), fever, headache, tiredness, muscle pain	Meningitis (infection of the covering around the brain and spinal cord), encephalitis (brain swelling), inflammation of testicles or ovaries, deafness, death
Rubella	MMR** vaccine protects against rubella.	Air, direct contact	Sometimes rash, fever, swollen lymph nodes	Very serious in pregnant women—can lead to miscarriage, stillbirth, premature delivery, birth defects
Chickenpox	Varicella vaccine protects against chickenpox.	Air, direct contact	Rash, tiredness, headache, fever	Infected blisters, bleeding disorders, encephalitis (brain swelling), pneumonia (infection in the lungs), death
Hepatitis A	HepA vaccine protects against hepatitis A.	Direct contact, contaminated food or water	May be no symptoms, fever, stomach pain, loss of appetite, fatigue, vomiting, jaundice (yellowing of skin and eyes), dark urine	Liver failure, arthralgia (joint pain), kidney, pancreatic and blood disorders, death

DTaP* DTaP combines protection against diphtheria, tetanus, and pertussis.

MMR** MMR combines protection against measles, mumps, and rubella.

Last updated December 2022 • CS322257-A

<https://www.cdc.gov/vaccines/schedules/easy-to-read/child-easyread.html>

2023 Recommended Immunizations for Children from Birth Through 6 Years Old

VACCINE	Birth	1 MONTH	2 MONTHS	4 MONTHS	6 MONTHS	12 MONTHS	15 MONTHS	18 MONTHS	19-23 MONTHS	2-3 YEARS	4-6 YEARS
HepB Hepatitis B	HepB	HepB			HepB						
RV* Rotavirus			RV	RV	RV*						
DTaP Diphtheria, Pertussis, & Tetanus			DTaP	DTaP	DTaP		DTaP				DTaP
Hib* Haemophilus influenzae type b			Hib	Hib	Hib*	Hib					
PCV13, PCV15 Pneumococcal disease			PCV	PCV	PCV	PCV					
IPV Polio			IPV	IPV	IPV						IPV
COVID-19** Coronavirus disease 2019					COVID-19**						
Flu* Influenza					Flu (One or Two Doses Yearly)*						
MMR Measles, Mumps, & Rubella						MMR					MMR
Varicella Chickenpox						Varicella					Varicella
HepA* Hepatitis A						HepA*		HepA*			

FOOTNOTES

RV* **Hib***
Administering a third dose at age 6 months depends on the brand of Hib or rotavirus vaccine used for previous dose.

COVID-19** Number of doses recommended depends on your child's age and type of COVID-19 vaccine used.

Flu* Two doses given at least 4 weeks apart are recommended for children age 6 months through 8 years of age who are getting an influenza (flu) vaccine for the first time and for some other children in this age group.

HepA* Two doses of Hep A vaccine are needed for lasting protection. The 2 doses should be given between age 12 and 23 months. Both doses should be separated by at least 6 months. Children 2 years and older who have not received 2 doses of Hep A should complete the series.

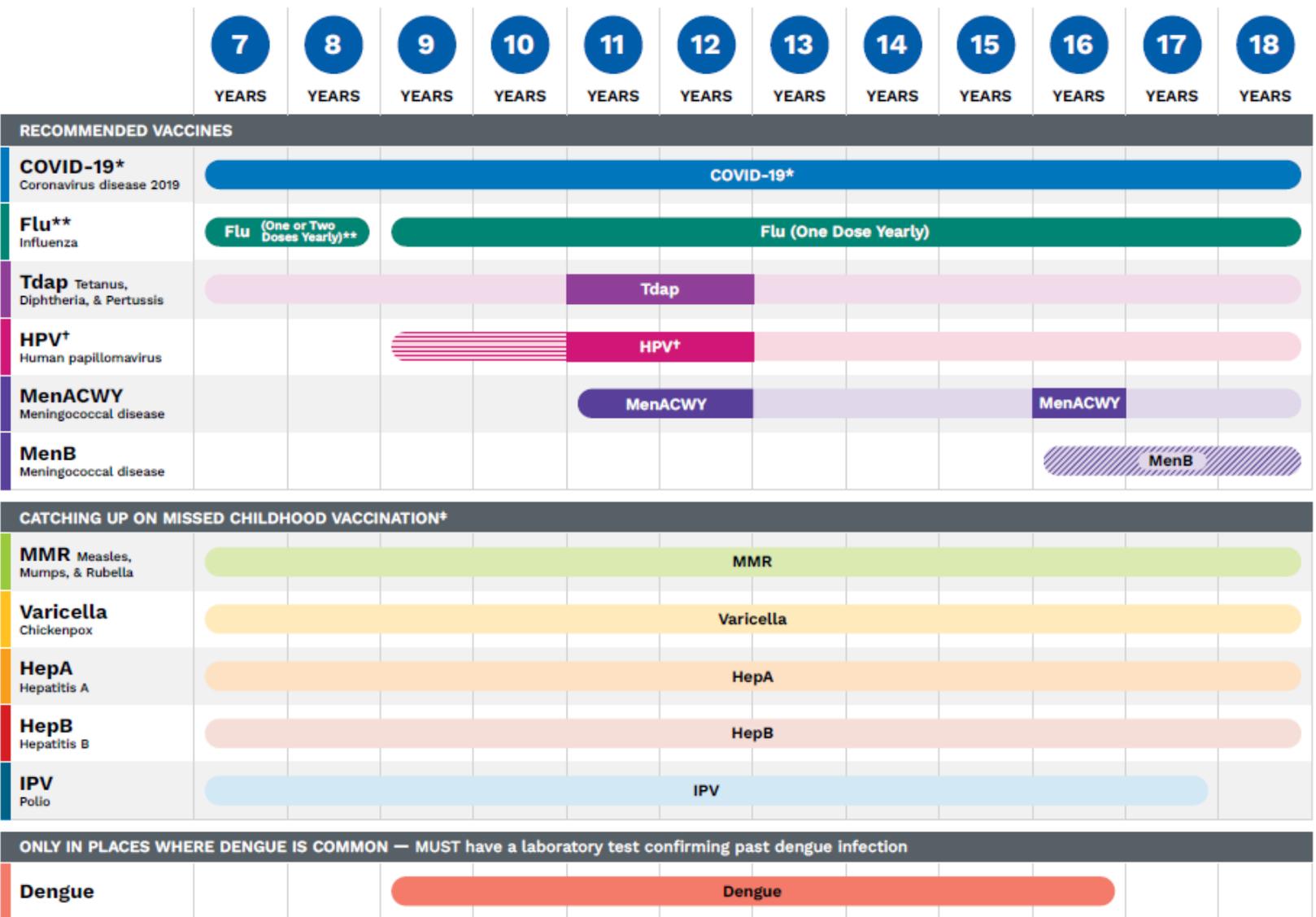
ADDITIONAL INFORMATION

1. If your child misses a shot recommended for their age, talk to your child's doctor as soon as possible to see when the missed shot can be given.

2. If your child has any medical conditions that put them at risk for infection (e.g., sickle cell, HIV infection, cochlear implants) or is traveling outside the United States, talk to your child's doctor about additional vaccines that they may need.

Talk with your child's doctor if you have questions about any shot recommended for your child.

2023 Recommended Immunizations for Children 7–18 Years Old



KEY



Indicates when the vaccine is recommended for all children unless your doctor tells you that your child cannot safely receive the vaccine.



Indicates the vaccine series can begin at this age.



Indicates the vaccine **should** be given if a child is catching up on missed vaccines. A vaccine series does not need to be restarted, regardless of the time that has elapsed between doses.



Indicates children not at increased risk **may** get the vaccine if they wish after speaking to a provider.

ADDITIONAL INFORMATION

1. If your child misses a shot recommended for their age, talk to your child's doctor as soon as possible to see when the missed shot can be given.
2. If your child has any medical conditions that put them at risk for infection or is traveling outside the United States, talk to your child's doctor about additional vaccines that they may need.

Talk with your child's doctor if you have questions about any shot recommended for your child.

FOOTNOTES

COVID-19* Number of doses recommended depends on your child's age and type of COVID-19 vaccine used.

Flu** Two doses given at least 4 weeks apart are recommended for children age 6 months through 8 years of age who are getting an influenza (flu) vaccine for the first time and for some other children in this age group.

HPV+ Ages 11 through 12 years old should get a 2-shot series separated by 6 to 12 months. The series can begin at 9 years old. A 3-shot series is recommended for those with weakened immune systems and those who start the series after their 15th birthday.

*Originally recommended age ranges for missed childhood vaccinations: 2-dose series of **MMR** at 12–15 months and 4–6 years; 2-dose series of **Varicella** at 12–15 months and 4–6 years; 2-dose series of **HepA** (minimum interval: 6 months) at age 12–23 months; 3-dose series of **HepB** at birth, 1–2 months, and 6–18 months; and 4-dose series of **Polio** at 2 months, 4 months, 6–18 months, and 4–6 years.

Table 2 Recommended Adult Immunization Schedule by Medical Condition or Other Indication, United States, 2023

Vaccine	Pregnancy	Immuno-compromised (excluding HIV infection)	HIV infection CD4 percentage and count		Asplenia, complement deficiencies	End-stage renal disease, or on hemodialysis	Heart or lung disease; alcoholism ^a	Chronic liver disease	Diabetes	Health care personnel ^b	Men who have sex with men
			<15% or <200 mm ³	≥15% and ≥200 mm ³							
COVID-19		See Notes									
IIV4 or RIV4 or LAIV4		1 dose annually									
		Contraindicated				Precaution			or 1 dose annually		
Tdap or Td	1 dose Tdap each pregnancy	1 dose Tdap, then Td or Tdap booster every 10 years									
MMR	Contraindicated*	Contraindicated		1 or 2 doses depending on indication							
VAR	Contraindicated*	Contraindicated			2 doses						[No Title]
RZV		2 doses at age ≥19 years			2 doses at age ≥50 years						
HPV	Not Recommended*	3 doses through age 26 years			2 or 3 doses through age 26 years depending on age at initial vaccination or condition						
Pneumococcal (PCV15, PCV20, PPSV23)		1 dose PCV15 followed by PPSV23 OR 1 dose PCV20 (see notes)									
HepA				2, 3, or 4 doses depending on vaccine							
HepB	3 doses (see notes)	2, 3, or 4 doses depending on vaccine or condition									
MenACWY		1 or 2 doses depending on indication, see notes for booster recommendations									
MenB	Precaution	2 or 3 doses depending on vaccine and indication, see notes for booster recommendations									
Hib		3 doses HSCT ^c recipients only			1 dose						

Recommended vaccination for adults who meet age requirement, lack documentation of vaccination, or lack evidence of past infection

 Recommended vaccination for adults with an additional risk factor or another indication

 Recommended vaccination based on shared clinical decision-making

 Precaution—vaccination might be indicated if benefit of protection outweighs risk of adverse reaction

 Contraindicated or not recommended—vaccine should not be administered.

 No recommendation/Not applicable

*Vaccinate after pregnancy.

a. Precaution for LAIV4 does not apply to alcoholism. b. See notes for influenza; hepatitis B; measles, mumps, and rubella; and varicella vaccinations. c. Hematopoietic stem cell transplant.

<https://tools.cdc.gov/medialibrary/index.aspx#/media/id/266012>

2023 - 2024 Texas Minimum State Vaccine Requirements for Students Grades K - 12

This chart summarizes the vaccine requirements incorporated in the Texas Administrative Code (TAC), Title 25 Health Services, §§97.61-97.72. This document is not intended as a substitute for the TAC, which has other provisions and details. The Department of State Health Services (DSHS) is granted authority to set immunization requirements by the Texas Education Code, Chapter 38.

IMMUNIZATION REQUIREMENTS

A student shall show acceptable evidence of vaccination prior to entry, attendance, or transfer to a public or private elementary or secondary school in Texas.

Vaccine Required (Attention to notes and footnotes)	Minimum Number of Doses Required by Grade Level												Notes
	Grades K - 6 th						Grade 7 th	Grades 8 th - 12 th					
	K	1	2	3	4	5	6	7	8	9	10	11	
Diphtheria/Tetanus/Pertussis (DTaP/DTP/DT/Td/Tdap)	5 doses or 4 doses						3 dose primary series and 1 booster dose of Tdap / Td <i>within the last 5 years</i>	3 dose primary series and 1 booster dose of Tdap / Td <i>within the last 10 years</i>					<p>For K – 6th grade: 5 doses of diphtheria-tetanus-pertussis vaccine; 1 dose must have been received on or after the 4th birthday. However, 4 doses meet the requirement if the 4th dose was received on or after the 4th birthday.¹ For students aged 7 years and older, 3 doses meet the requirement if 1 dose was received on or after the 4th birthday.¹</p> <p>For 7th grade: 1 dose of Tdap is required if at least 5 years have passed since the last dose of tetanus-containing vaccine.*</p> <p>For 8th – 12th grade: 1 dose of Tdap is required when 10 years have passed since the last dose of tetanus-containing vaccine.*</p> <p>*Td is acceptable in place of Tdap if a medical contraindication to pertussis exists.</p>
Polio	4 doses or 3 doses												<p>For K – 12th grade: 4 doses of polio; 1 dose must be received on or after the 4th birthday.¹ However, 3 doses meet the requirement if the 3rd dose was received on or after the 4th birthday.¹</p>
Measles, Mumps, and Rubella ² (MMR)	2 doses												<p>For K – 12th grade: 2 doses are required, with the 1st dose received on or after the 1st birthday.¹ Students vaccinated prior to 2009 with 2 doses of measles and 1 dose each of rubella and mumps satisfy this requirement.</p>
Hepatitis B ²	3 doses												<p>For students aged 11 – 15 years, 2 doses meet the requirement if adult hepatitis B vaccine (Recombivax®) was received. Dosage (10 mcg /1.0 mL) and type of vaccine (Recombivax®) must be clearly documented. If Recombivax® was not the vaccine received, a 3-dose series is required.</p>
Varicella ^{2,3}	2 doses												<p>For K – 12th grade: 2 doses are required, with the 1st dose received on or after the 1st birthday.¹</p>
Meningococcal (MCV4)							1 dose						<p>For 7th – 12th grade, 1 dose of quadrivalent meningococcal conjugate vaccine is required on or after the student’s 11th birthday.</p> <p>NOTE: If a student received the vaccine at 10 years of age, this will satisfy the requirement.</p>
Hepatitis A ²	2 doses												<p>For K – 12th grade: 2 doses are required, with the 1st dose received on or after the 1st birthday.¹</p>

NOTE: Shaded area indicates that the vaccine is not required for the respective grade.

↓ Notes on the back page, please turn over.↓

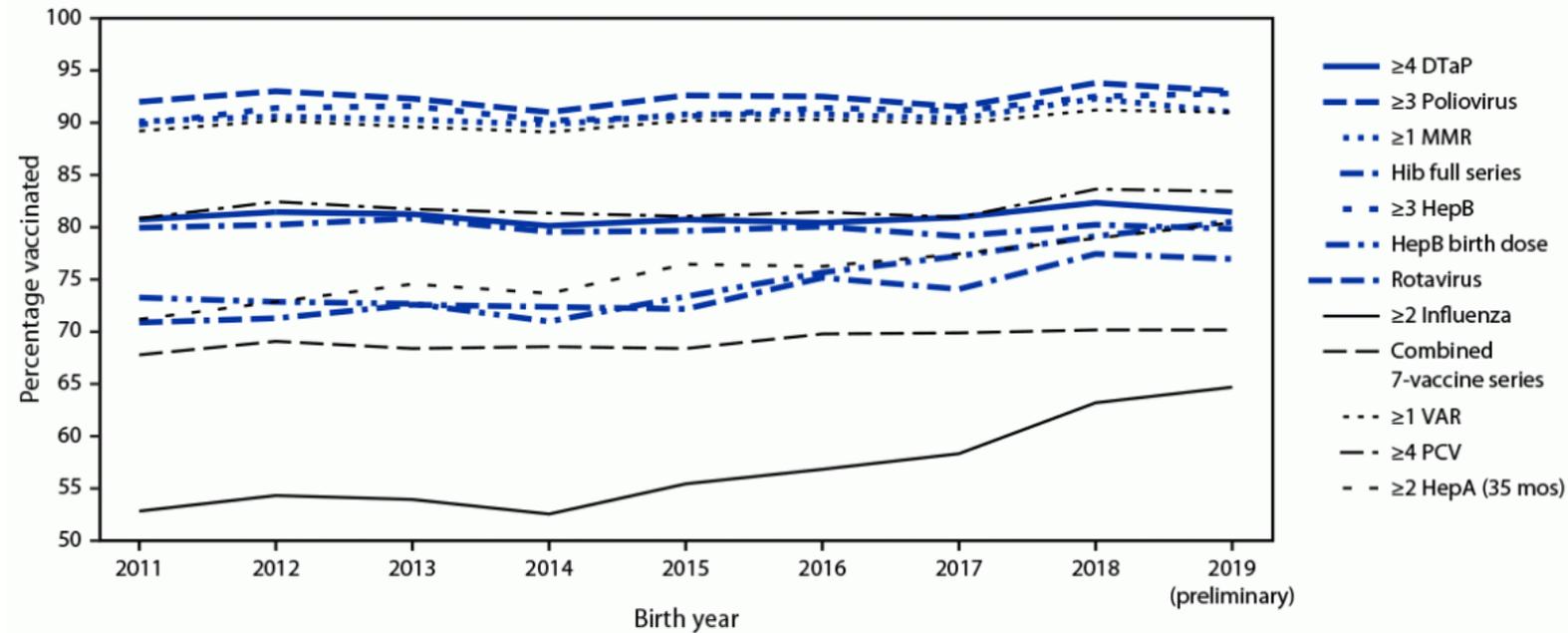
<https://www.dshs.texas.gov/immunization-unit/texas-school-child-care-facility-immunization/texas-minimum-state-vaccine-1>

Current global coverage rates

- **Number of children missing out on any vaccination – so-called zero-dose children – improved from 18.1 million in 2021 to 14.3 million in 2022, nearly back to pre-pandemic 2019 level of 12.9 million.**
- **Coverage of 3rd dose of DPT recovered from 81% in 2021 to 84% in 2022.**
- **Proportion of children receiving 1st dose of measles vaccine increased from 81% in 2021 to 83% in 2022, well below 2019 level of 86%.**
- **Global coverage for the first dose of HPV in girls raised from 16% in 2021 to 21% in 2022.**
- **Coverage of yellow fever vaccine in countries at risk of it is 48%, well below recommended 80% coverage.**

Estimated vaccination coverage with selected individual vaccines and a combined vaccine series by age 24 months, by birth year 2011–2019*** — NIS–Child, United States, 2012–2021

Current US coverage rates



Texas Kindergarten Annual Report of Immunization Status School Year 2022-2023

**Current Texas
coverage rates**

Vaccine Category	Percent Completely Vaccinated	Reported Reasons for Lack of Completion, by Vaccine			
		Conscientious Exemptions	Medical Exemptions	Provisional Enrollment	Delinquent
		%	%	%	%
DTaP (<i>Diphtheria, tetanus, and acellular pertussis</i>)	93.83%	3.03%	0.10%	0.60%	2.45%
Hepatitis A	94.47%	2.84%	0.09%	1.03%	1.57%
Hepatitis B	95.79%	2.71%	0.07%	0.22%	1.20%
MMR (<i>Measles, mumps, and rubella</i>)	94.20%	3.04%	0.13%	0.23%	2.41%
Polio	94.07%	3.01%	0.09%	0.40%	2.43%
Varicella* (<i>Chickenpox</i>)	93.72%	3.04%	0.14%	0.53%	2.57%

* An additional 0.17% of kindergarten students met school entry requirements through reported history of varicella (chickenpox) disease.

Reported worldwide measles cases
↑79% in 1st 2 mo of 2022, vs same
period in 2021. WHO warns
conditions ripe for serious outbreaks
of vaccine-preventable illnesses

<https://www.who.int/news/item/27-04-2022-unicef-and-who-warn-of--perfect-storm--of-conditions-for-measles-outbreaks--affecting-children>

**The
Guardian**

Measles cases on the rise in
England, say public health
experts

May 4, 2023

Effects of low vaccine coverage

Le Monde

Polio resurfaces despite eradication efforts
July 30, 2022

thebmj

UK childhood vaccination rates fell
last year in almost all programmes,
figures show
September 20, 2022

The New York Times

Sharp Drop in Childhood
Vaccinations Threatens
Millions of Lives
July 14, 2022

The Washington Post

Slide in measles vaccination rate
among kindergartners raises alarm
January 12, 2023

n p r

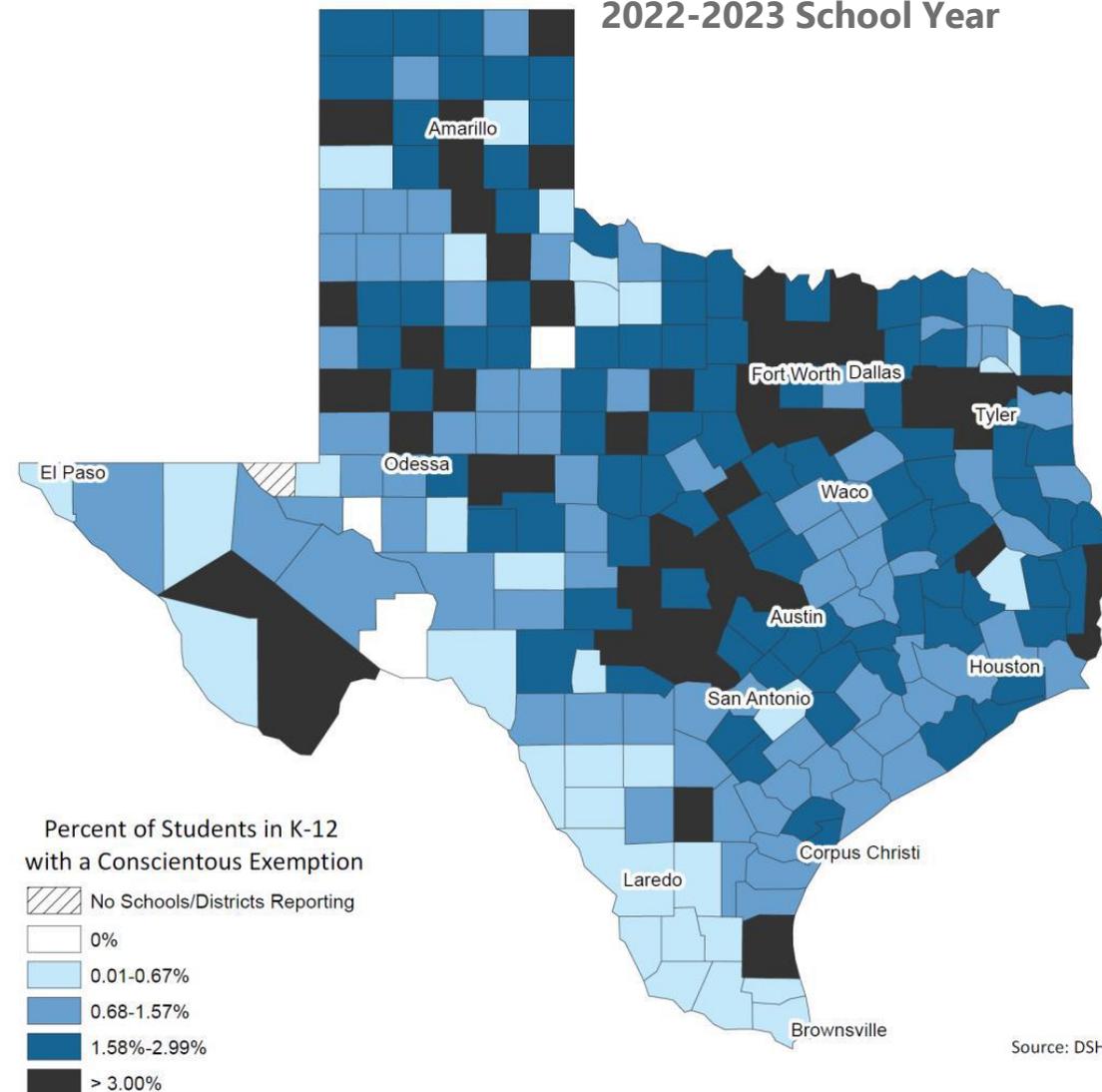
New York counties gear up to fight a
polio outbreak among the unvaccinated
August 24, 2022

Exemptions for school immunizations (Texas)

- **Texas law allows:**
 - **physicians to write medical exemption statements which clearly state a medical reason exists that the person cannot receive specific vaccines, and**
 - **parents/guardians to choose an exemption from immunization requirements for reasons of conscience, including a religious belief**
- **Law does not allow parents/guardians to elect an exemption simply because of inconvenience**
- **Schools should maintain up-to-date list of students with exemptions, so they may be excluded in times of emergency or epidemic declared by the commissioner of public health**

Current personal exemption rates (Texas)

Reported Conscientious Exemptions by County 2022-2023 School Year



Source: DSHS Immunization Section, December 2022

Systemic reasons for low coverage rates

- **Lack of insurance**
- **Myths/misinformation**
- **Low priority/lack of knowledge**
- **Lack of trust in governmental agencies**
- **Celebrities trusted more than science**
- **Easy exemptions**

Tips for increasing acceptance

- **Listen**
- **Presume acceptance**
- **Validate concerns**
- **Respond to concerns with positive messages about vaccines, information debunking myths**
- **Communicate risks of delaying immunization**
- **Share experiences about immunization**
- **Have follow-up conversations**
- **Provide additional resources about vaccines**



National Immunization Awareness Month



More resources at <https://www.cdc.gov/vaccines/events/niam/index.html>

Questions

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Thank you!



View our Center's webinars

