



PEDIATRIC AND ADOLESCENT IMMUNIZATIONS

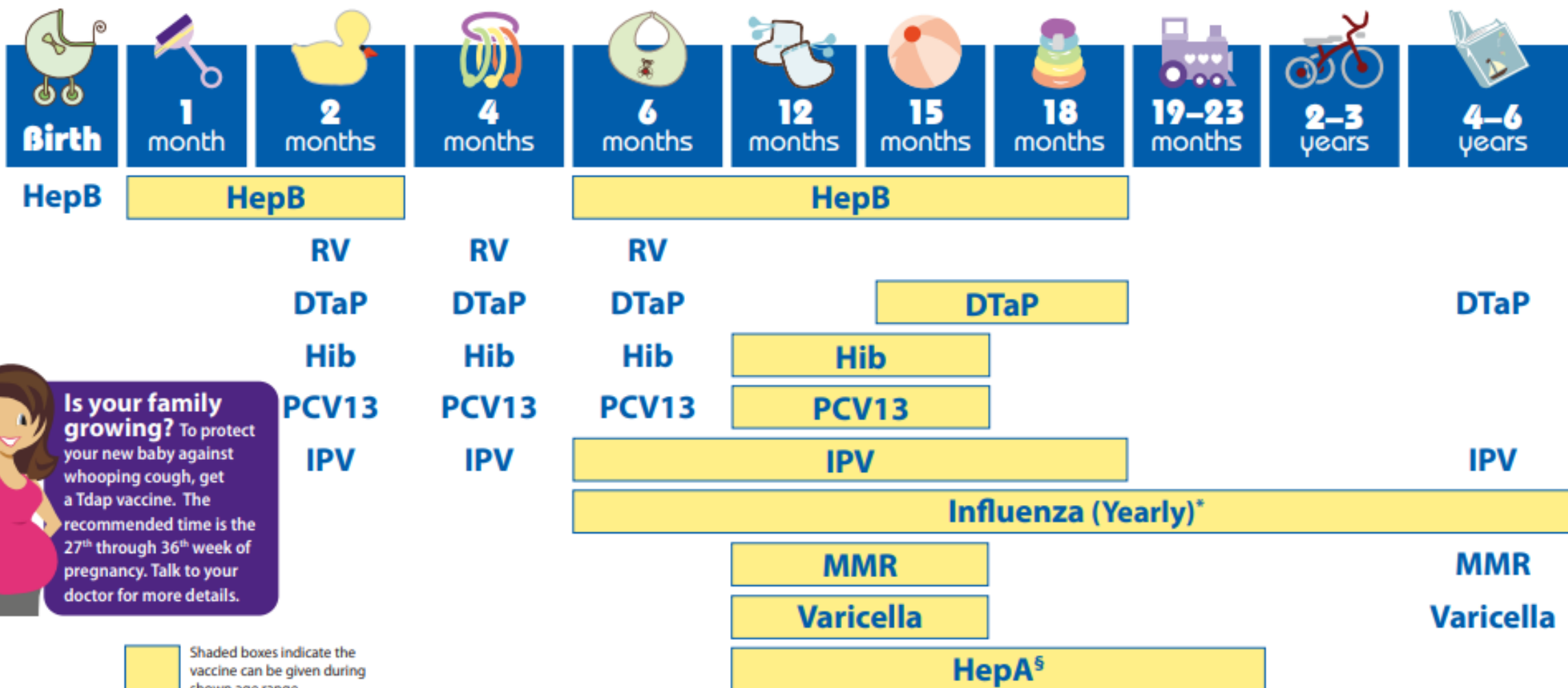
May 26, 2022

NORTH
Dakota
Be Legendary.™



RECOMMENDED IMMUNIZATIONS

2022 Recommended Immunizations for Children from Birth Through 6 Years Old



INFORMATION FOR PARENTS

2022 Recommended Immunizations for Children 7–18 Years Old

	Flu Influenza	Tdap Tetanus, diphtheria, pertussis	HPV Human papillomavirus	Meningococcal		Pneumococcal	Dengue	Hepatitis B	Hepatitis A	Polio	MMR Measles, mumps, rubella	Chickenpox Varicella
				MenACWY	MenB							
7-8 Years												
9-10 Years							ONLY in places where dengue spreads					
11-12 Years												
13-15 Years												
16-18 Years												
More information:	Everyone 6 months and older should get a flu vaccine every year if they do not have contraindications	All 11- through 12- year olds should get one shot of Tdap.	All 11- through 12- year olds should get a 2-shot series of HPV vaccine. A 3-shot series is needed for those with weakened immune systems and those who start the series at 15 years or older.	All 11- through 12- year olds should get one shot of meningococcal conjugate (MenACWY). A booster shot is recommended at age 16.	Ages 10 years and older at increased risk should receive a serogroup B meningococcal (MenB) vaccine. Ages 16–18 years old who are not at increased risk may be vaccinated with a MenB vaccine.		Ages 9-16 years who live in dengue endemic areas AND have laboratory confirmation of previous dengue infection					

WHY VACCINES ARE IMPORTANT FOR SCHOOL AND EARLY CHILDCARE

Disease	Exclusion Period
Chickenpox	Until blisters have dried and no new blisters have started for 24 hours-usually takes about 5-6 days .
Measles	Until 4 days after rash appears. Unvaccinated students 21 days from last measles case in school.
Influenza	Until child is fever free for 24 hours without the use of fever reducing meds.
Meningococcal Meningitis	Until at least 24 hours after antibiotic therapy was started .
Mumps	Until five days after parotitis onset.
Pertussis	Until five days after appropriate antibiotic therapy was started or 21 days after symptom onset.
Rubella	Until seven days after rash onset.



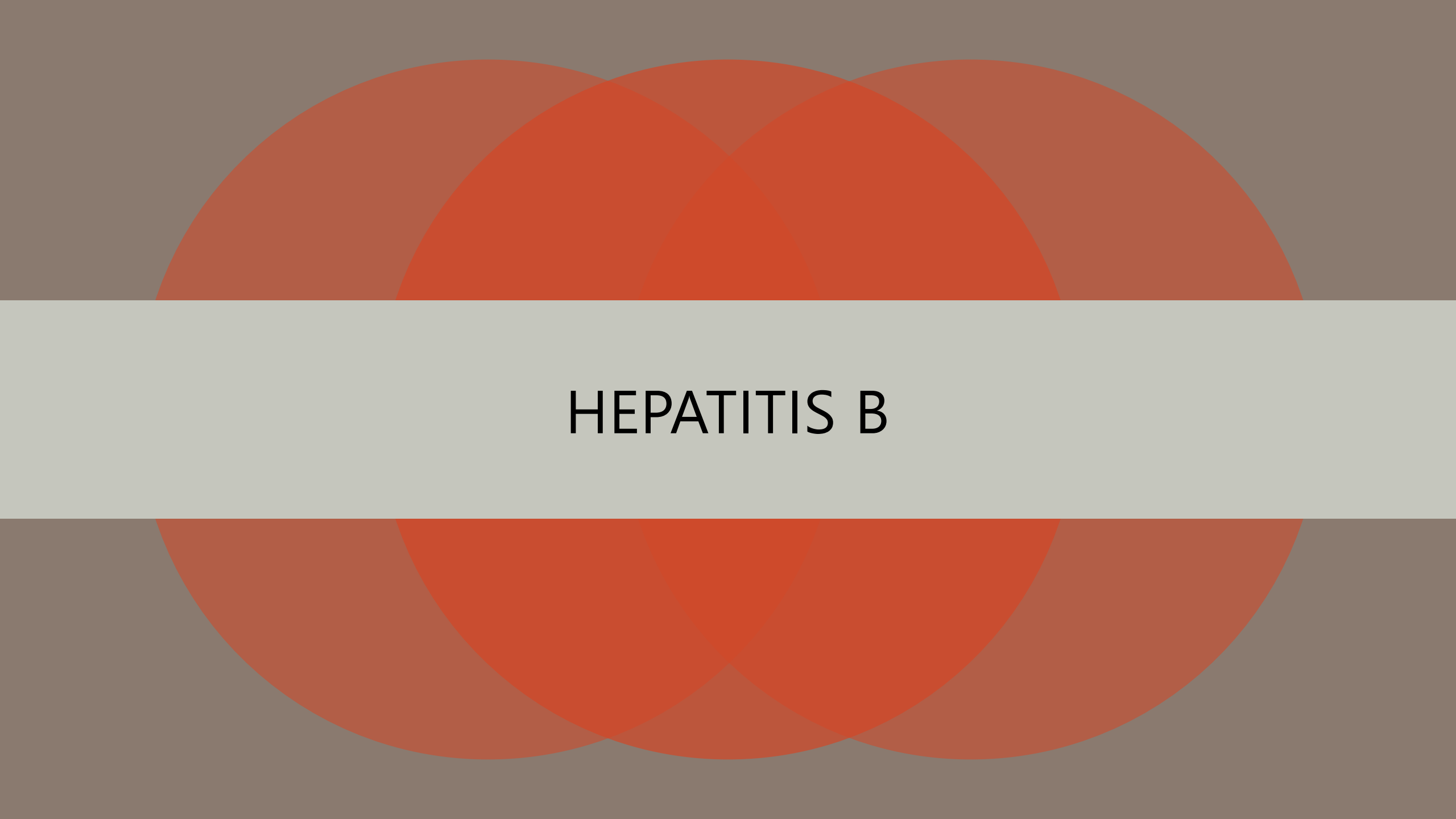
IMPORTANCE OF HERD IMMUNITY AKA “COMMUNITY IMMUNITY”

- Vaccines are not 100% effective, so the more people who are vaccinated, the better chance that the disease will not spread.
- 95% coverage rates ensure that if a vaccine preventable disease is introduced into a population, it will not spread.
- Community Immunity protects non-responders and those who cannot receive vaccine due to a contraindication.

MANY RELY ON HERD IMMUNITY

- Contraindications
 - Anaphylactic Allergy
 - Immunosuppressed
 - Age



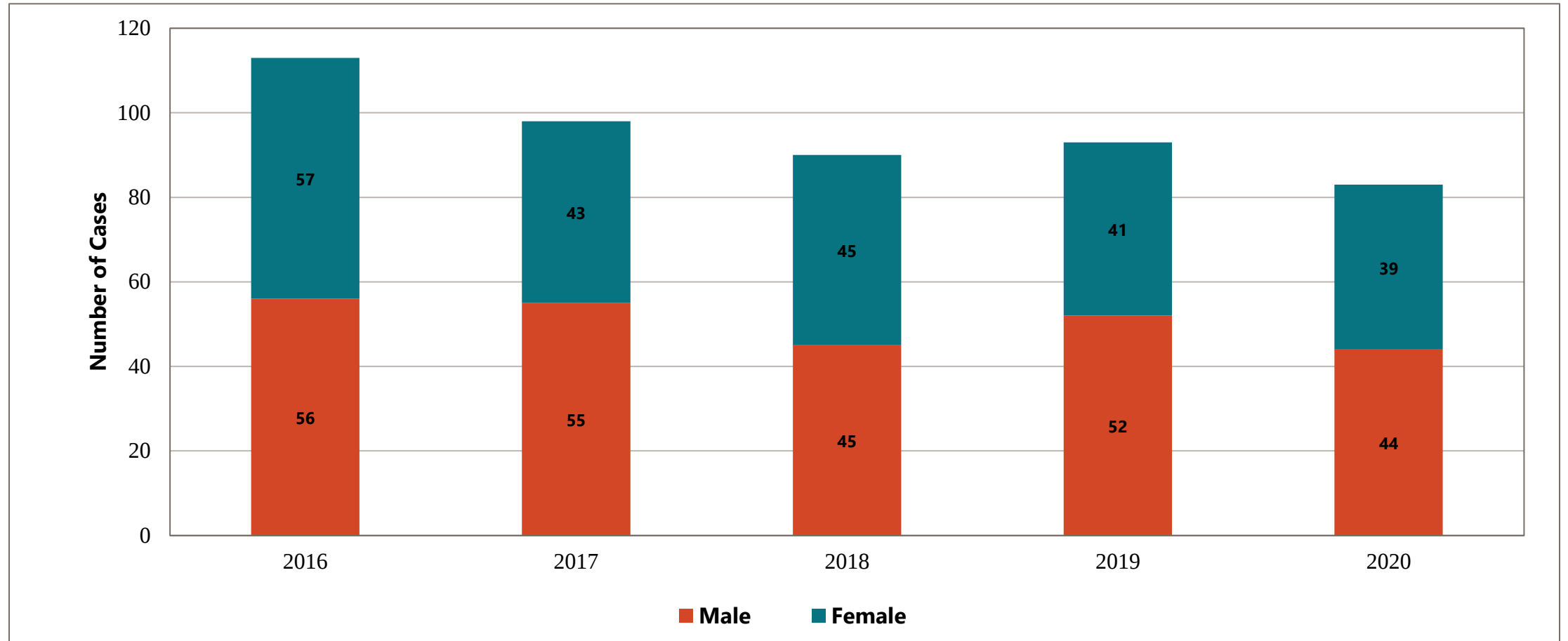


HEPATITIS B

HEPATITIS B

- Hepatitis B is a liver infection caused by the hepatitis B virus (HBV). For some people, it's a short illness that clears up with no problems. For others, it can cause long-lasting disease and long-term liver problems.
- Most commonly, HBV spreads through:
 - sexual activity with an HBV-infected person
 - shared contaminated needles or syringes for injecting drugs
 - HBV-infected mothers to their newborn babies

REPORTED CHRONIC HBV CASES BY YEAR, NORTH DAKOTA, 2016-2020



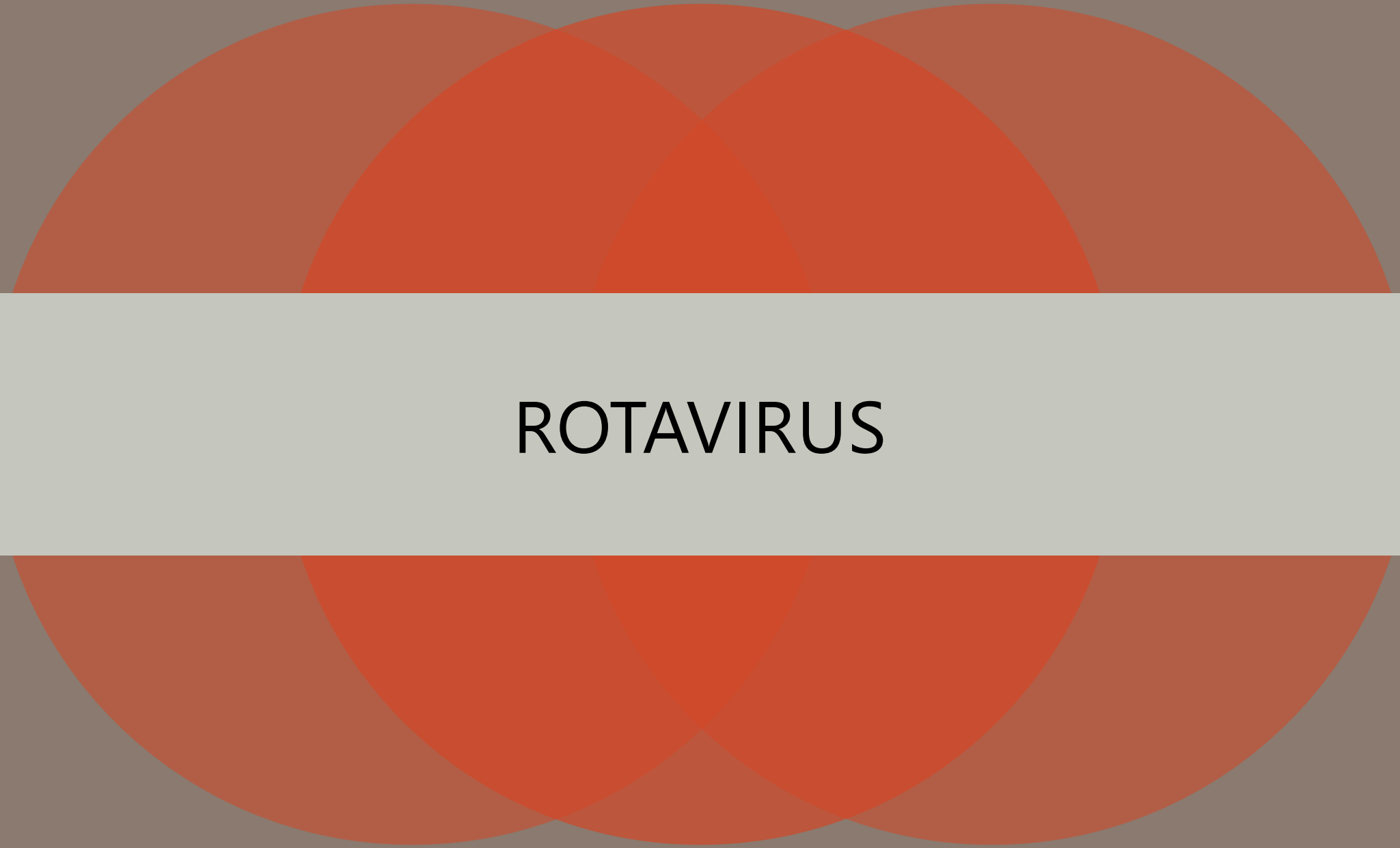


HEPATITIS B

- All Children should receive a total of 3 doses of Hepatitis B vaccine.
- Vaccination is recommended for all infants within 24 hours of birth

CDC recommend a dose at the following ages:

- 0 months
- 1 to 2 months
- 6 months

The image features a stylized representation of a rotavirus, which is a double-stranded RNA virus. It is depicted as a central, bright orange circle surrounded by six larger, semi-transparent orange circles, creating a wheel-like structure. A horizontal white band passes through the center of the graphic.

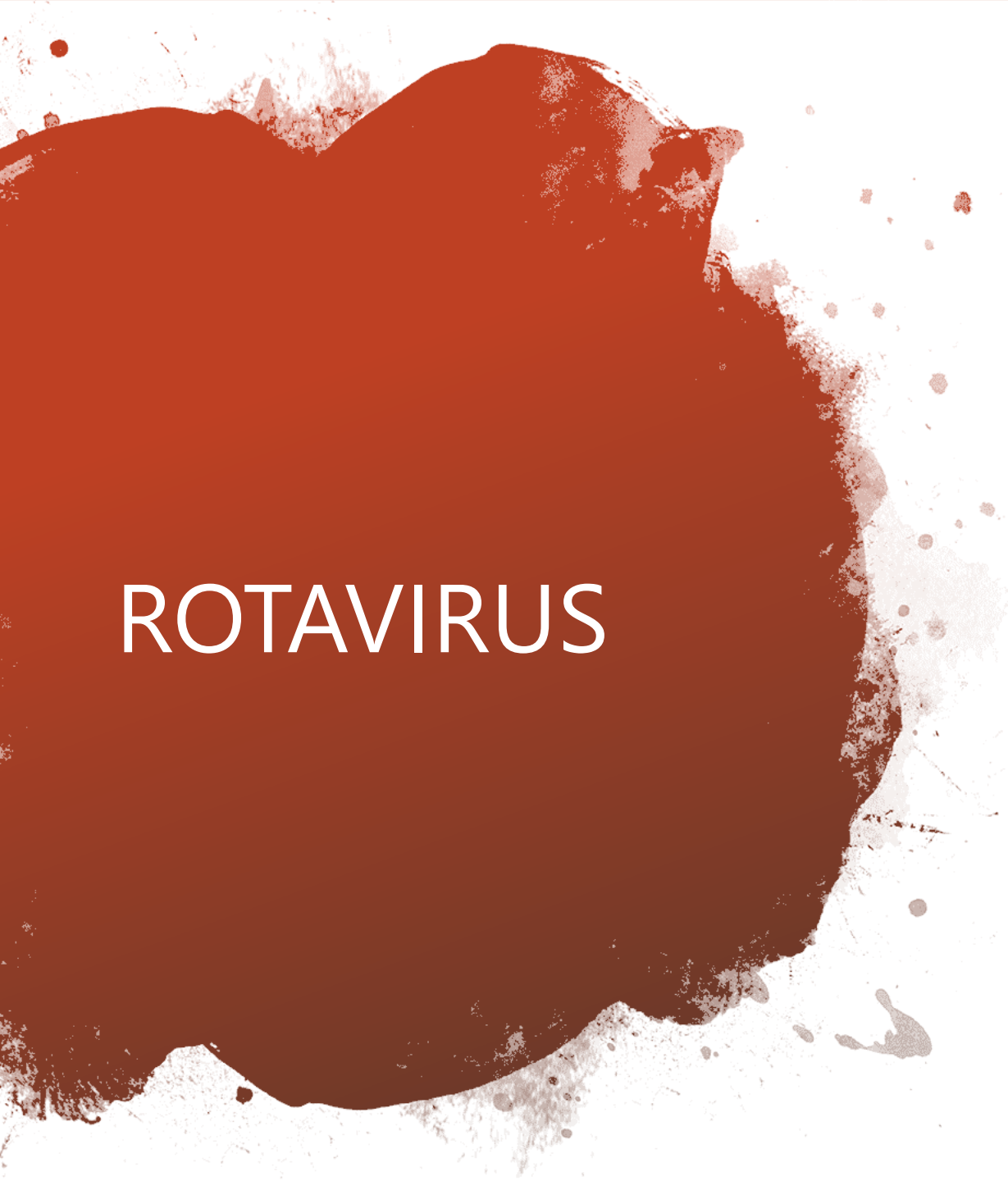
ROTAVIRUS

ROTAVIRUS

- Rotavirus is a very contagious virus that causes diarrhea. Before the development of a vaccine, most children had been infected with the virus at least once by age 5.
- Prior to vaccine introduction, almost all U.S. children were infected with rotavirus before their 5th birthday. Each year, among U.S. children younger than 5 years of age, rotavirus led to
 - more than 400,000 doctor visits,
 - more than 200,000 emergency room visits,
 - 55,000 to 70,000 hospitalizations, and
 - 20 to 60 deaths.

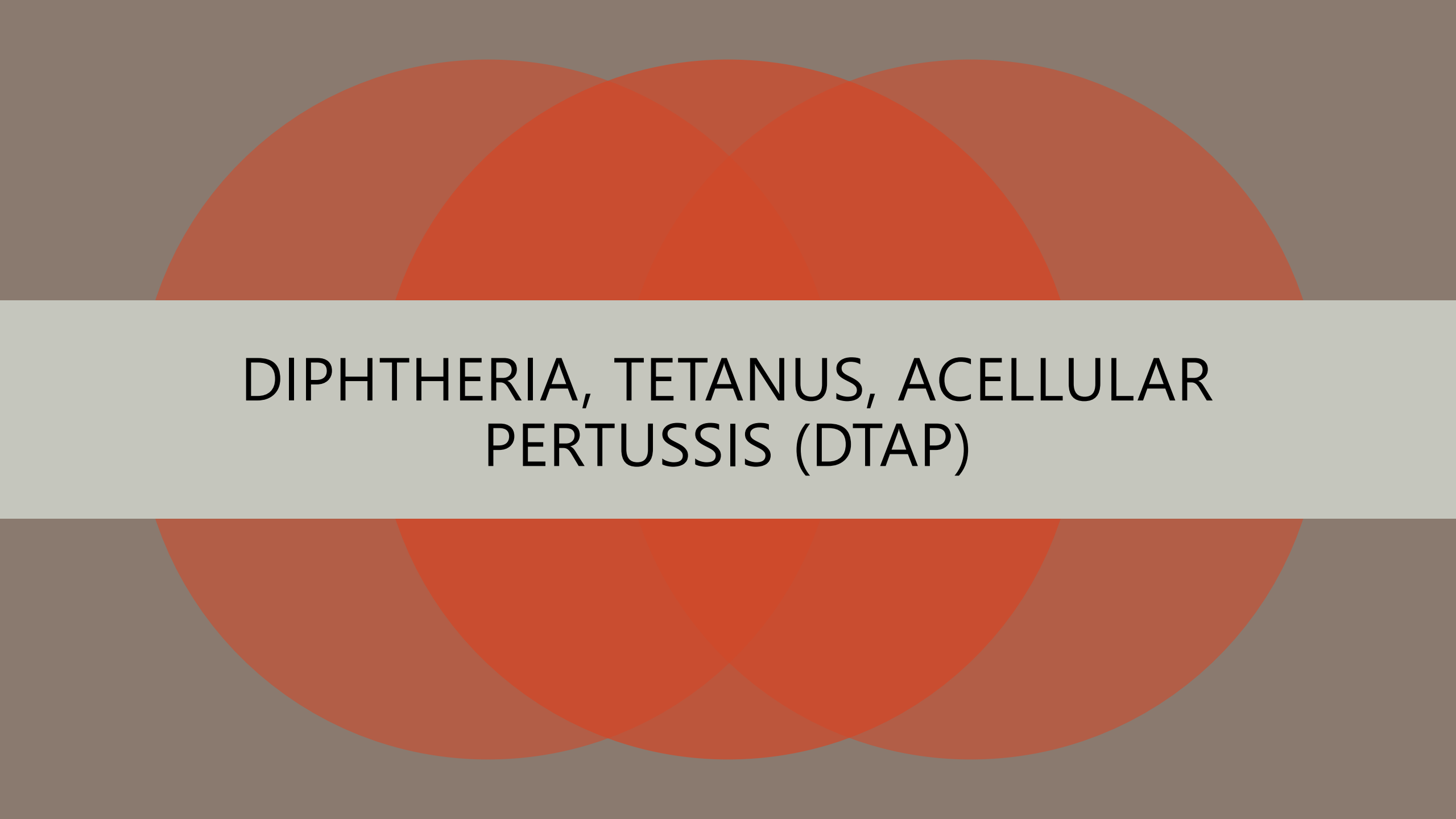
Three Rotavirus Outbreaks in the Postvaccine Era — California, 2017

Weekly / April 27, 2018 / 67(16);470–472



ROTAVIRUS

- Infants should get rotavirus vaccine to protect against rotavirus disease.
- There are two rotavirus vaccines licensed for use in infants in the United States:
 - RotaTeq® (RV5), which is given in three doses at 2 months, 4 months, and 6 months of age
 - Rotarix® (RV1), which is given in two doses at 2 months and 4 months of age
- The first dose of rotavirus vaccine should be given before a child is 15 weeks of age.
- Children should receive all doses of rotavirus vaccine before they turn 8 months of age.
- Both vaccines are given by putting drops in the infant's mouth.



DIPHTHERIA, TETANUS, ACELLULAR PERTUSSIS (DTAP)

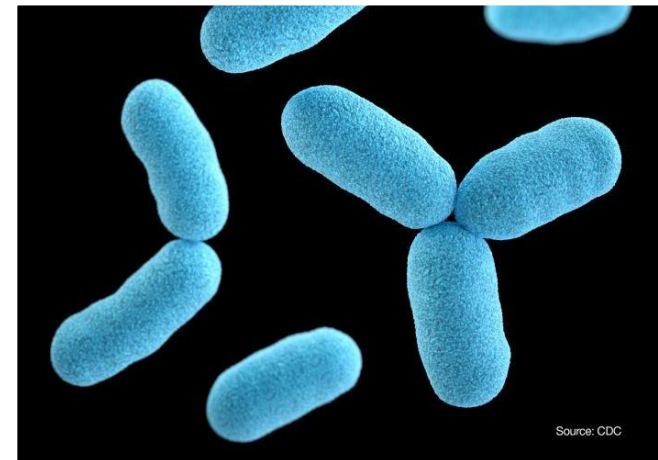
DIPHTHERIA

- Bacterial infection spread easily through sneezing and coughing
- Causes thick covering in back of nose or throat; difficult to breathe or swallow
- Diphtheria can also lead to heart failure, paralysis, and death
- The number of diphtheria cases reported globally has been increasing gradually. In 2019, there were 22,986 reported cases worldwide.



DIPHTHERIA

- 100,000-200,000 cases and 13,000-15,000 deaths reported annually in 1920s before vaccine
- Cases gradually declined after vaccines introduced in 1940s; cases rapidly declined after universal vaccination program introduction in late 1940s
- From 1996 through 2018, **14 cases of diphtheria were reported in the United States**, an average of less than 1 per year.

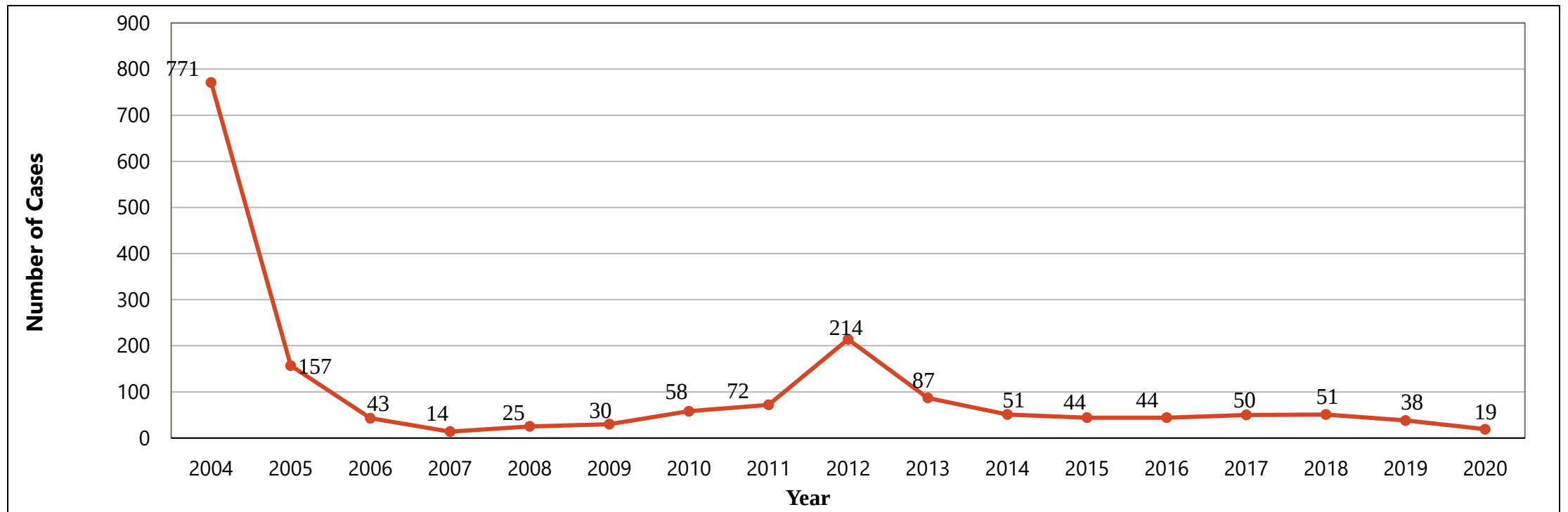


PERTUSSIS (WHOOPIING COUGH)

- Pertussis is a highly contagious disease that can be deadly for babies
- Causes uncontrollable, violent coughing, which often makes it hard to breathe
- “Whooping” name comes from the sharp breathing-in sound right after a coughing fit
- In babies, it can cause life-threatening pauses in breathing with no cough
- Mothers should be vaccinated during each pregnancy to pass protection to babies before birth
- Outbreaks in recent years
 - Since 2010, 15,000 - 50,000 cases reported yearly in U.S.; cases have been reported in every state



PERTUSSIS CASES IN NORTH DAKOTA, 2004-2020

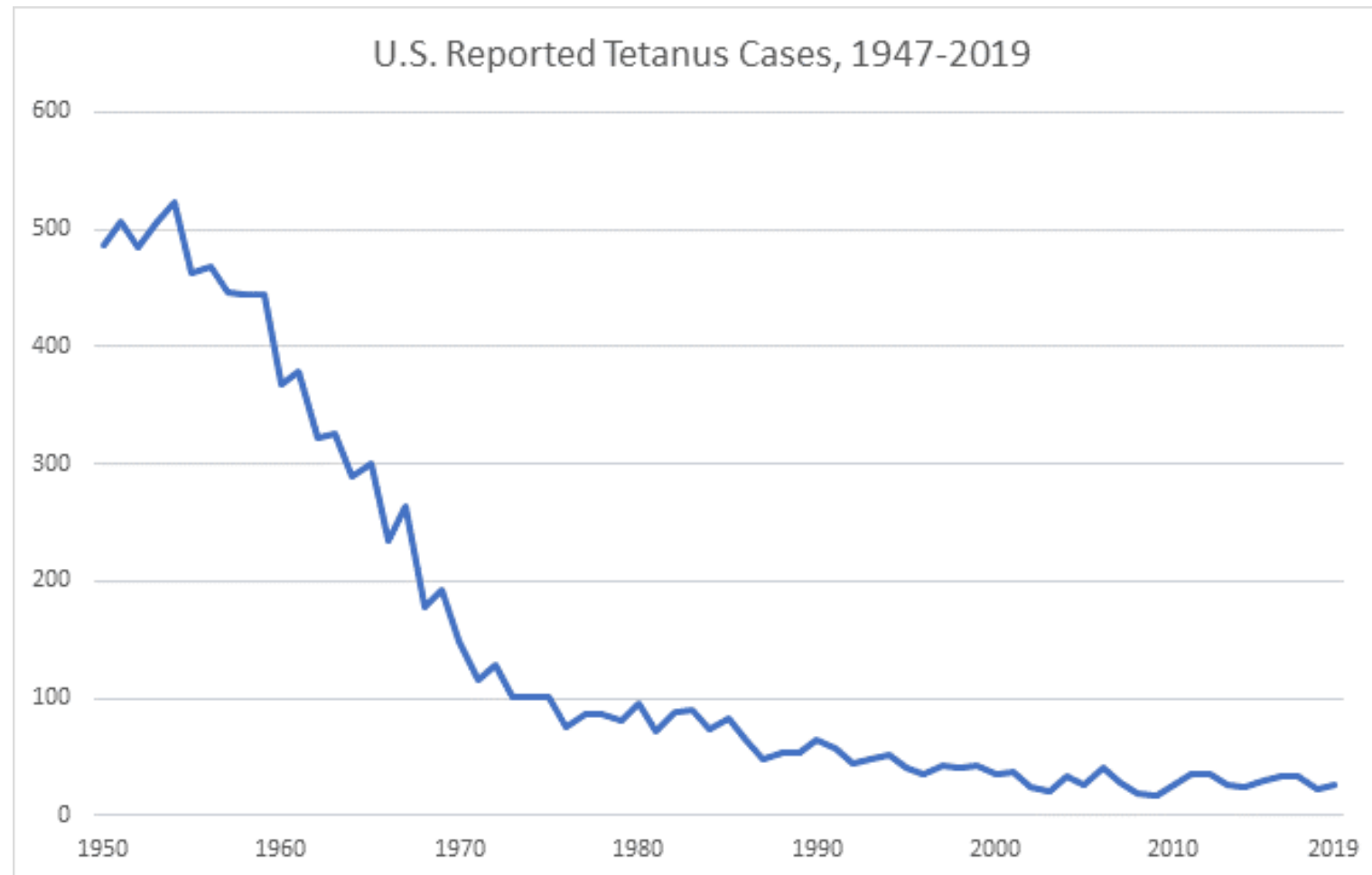


TETANUS

- Serious, potentially fatal infection caused by a toxin made by bacteria *Clostridium tetani*
- Causes painful muscle stiffness and lockjaw
- Present in soil and can contaminate wounds
- Tetanus is not contagious; cannot be spread person to person



TETANUS



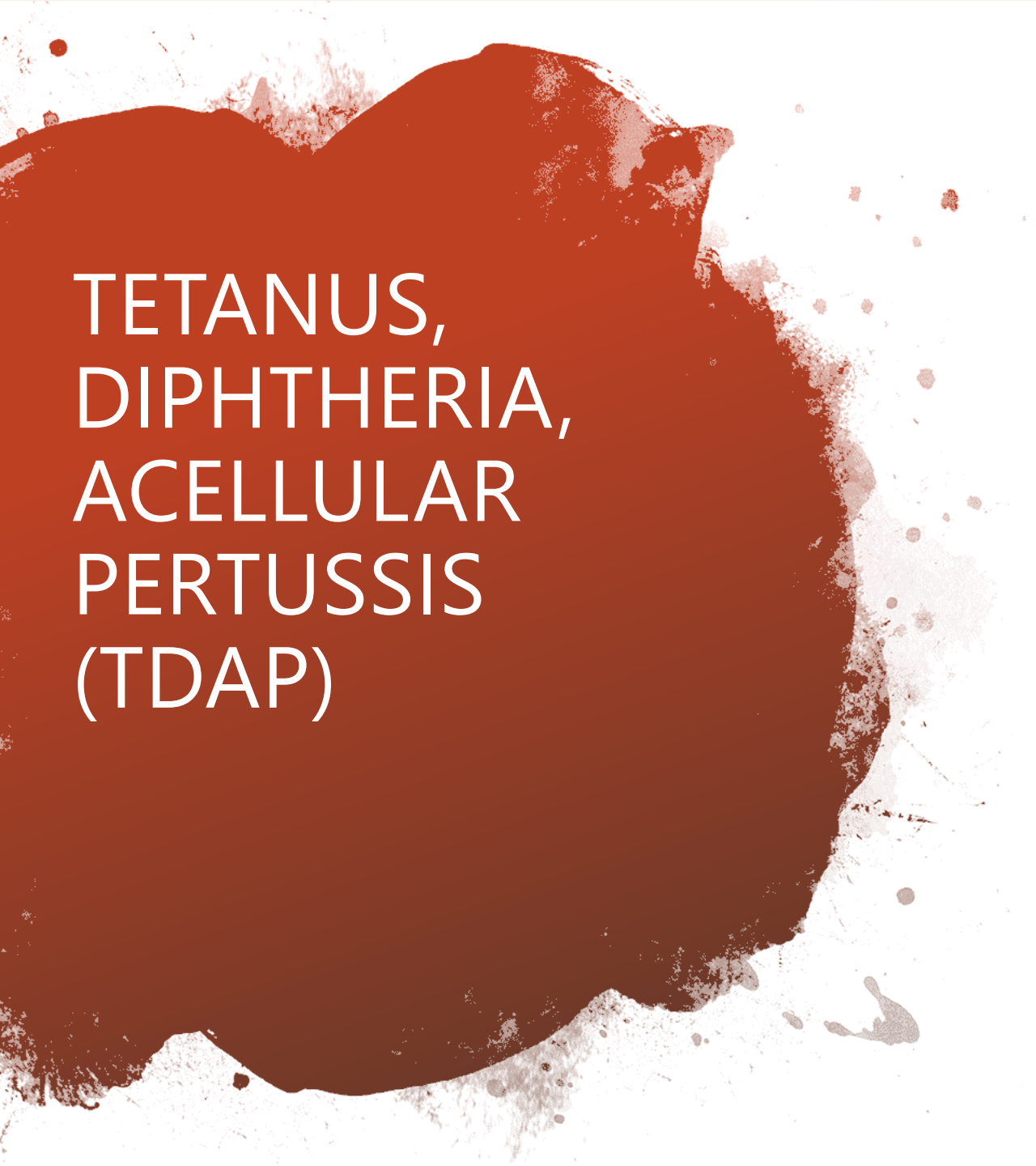


DIPHTHERIA, TETANUS, ACELLULAR PERTUSSIS (DTaP)

- Babies need 3 shots of DTaP to build up high levels of protection against diphtheria, tetanus, and whooping cough. Then, young children need 2 booster shots to maintain that protection through early childhood.

CDC recommend a dose at the following ages:

- 2 months
- 4 months
- 6 months
- 15 - 18 months
- 4 - 6 years



TETANUS, DIPHTHERIA, ACELLULAR PERTUSSIS (TDAP)

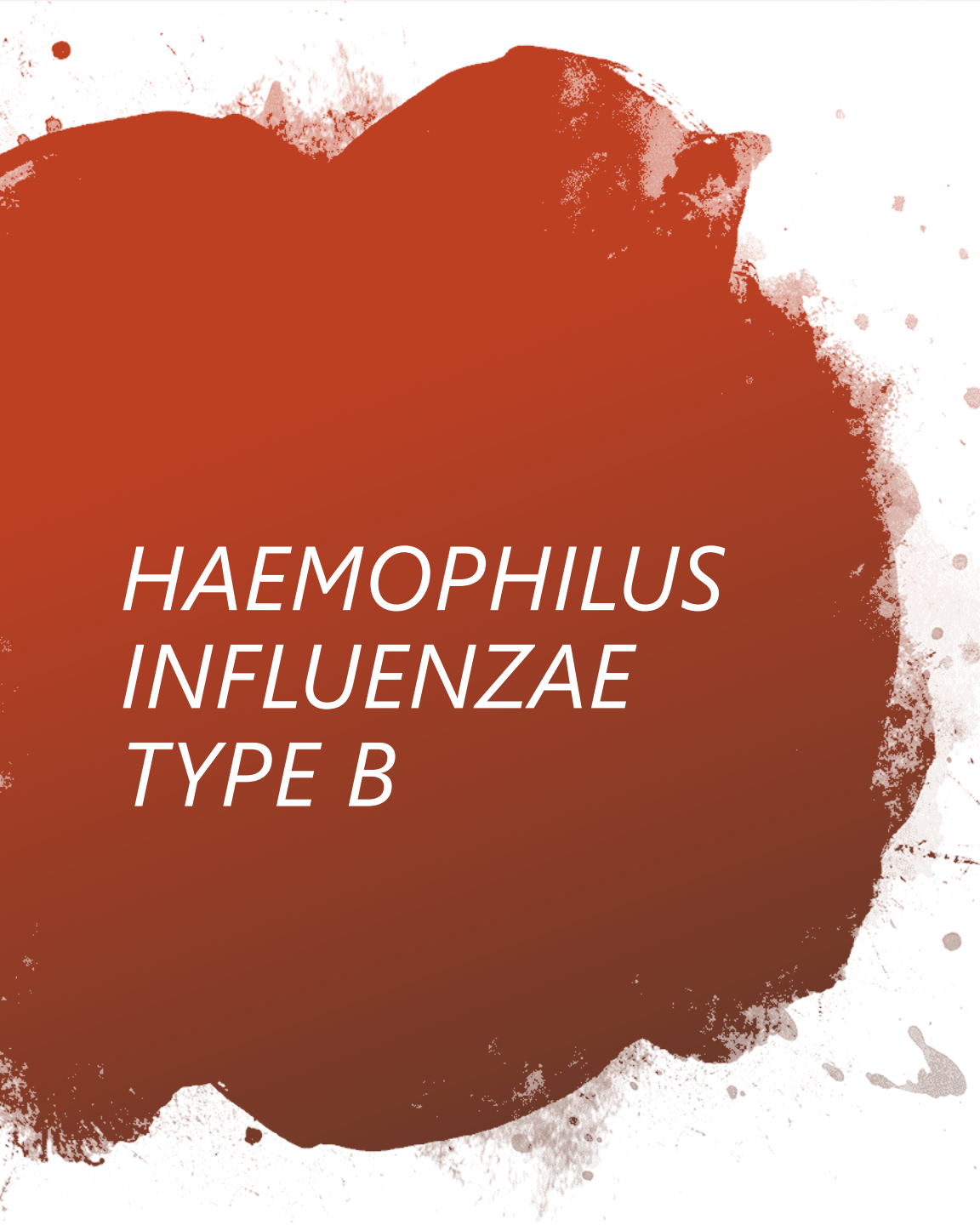
- Preteens should get one shot of Tdap between the ages of 11 and 12 years to boost their immunity.

HAEMOPHILUS INFLUENZAE TYPE B

HAEMOPHILUS INFLUENZAE TYPE B

- *Haemophilus influenzae type b* can cause many different kinds of infections. These infections usually affect children under 5 years of age but can also affect adults with certain medical conditions. Hib bacteria can cause mild illness, such as ear infections or bronchitis, or they can cause severe illness, such as infections of the blood. Severe Hib infection, also called “invasive Hib disease,” requires treatment in a hospital and can sometimes result in death.
- Types of Hib infections can cause:
 - Meningitis
 - Pneumonia
 - Severe swelling in the throat, making it hard to breathe
 - Infections of the blood, joints, bones, and covering of the heart
 - Death



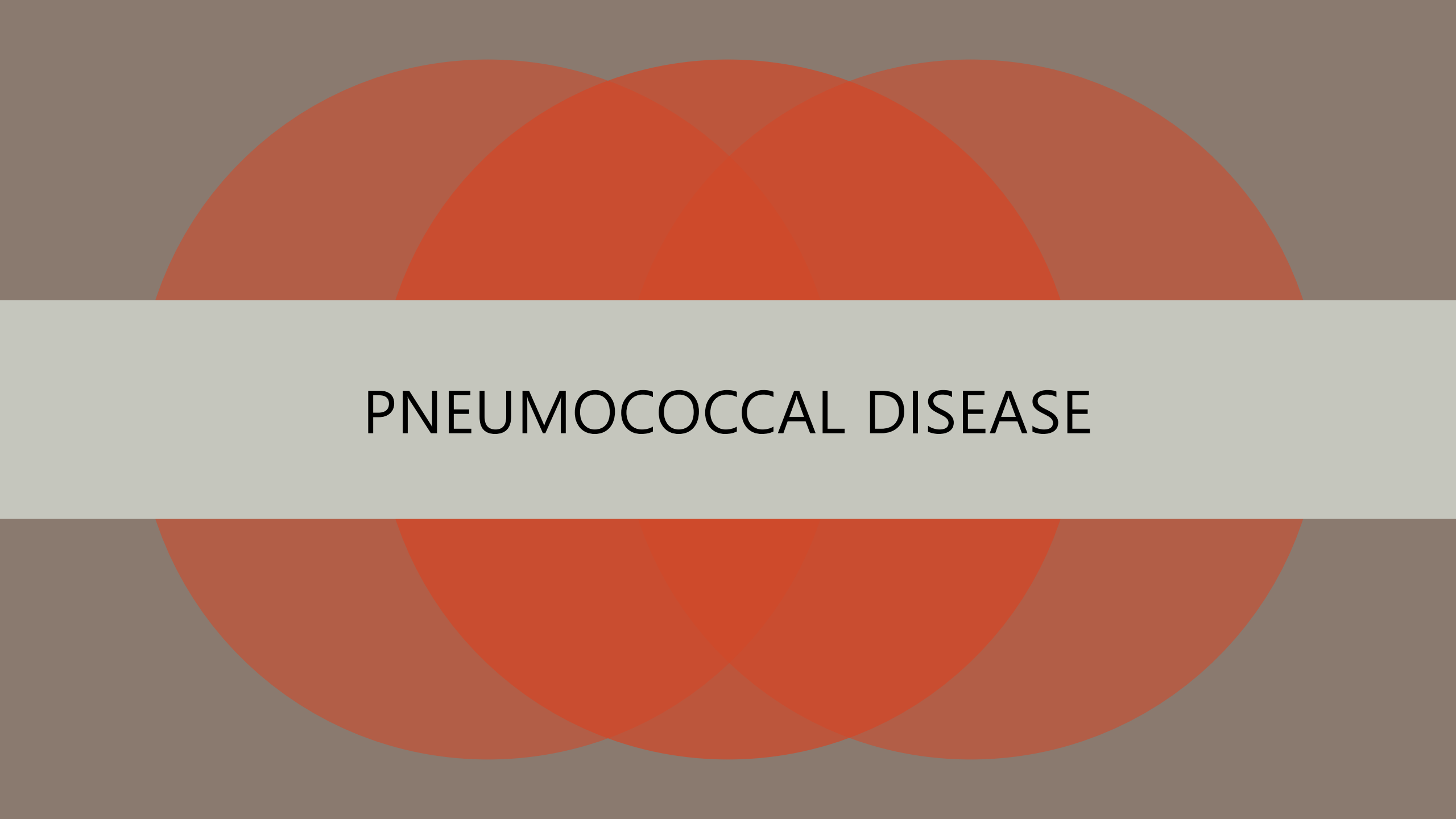


HAEMOPHILUS INFLUENZAE TYPE B

- CDC recommends Hib vaccination for all children younger than 5 years old. Children need multiple (3 or 4) shots of a Hib vaccine.

CDC recommends shots at the following ages:

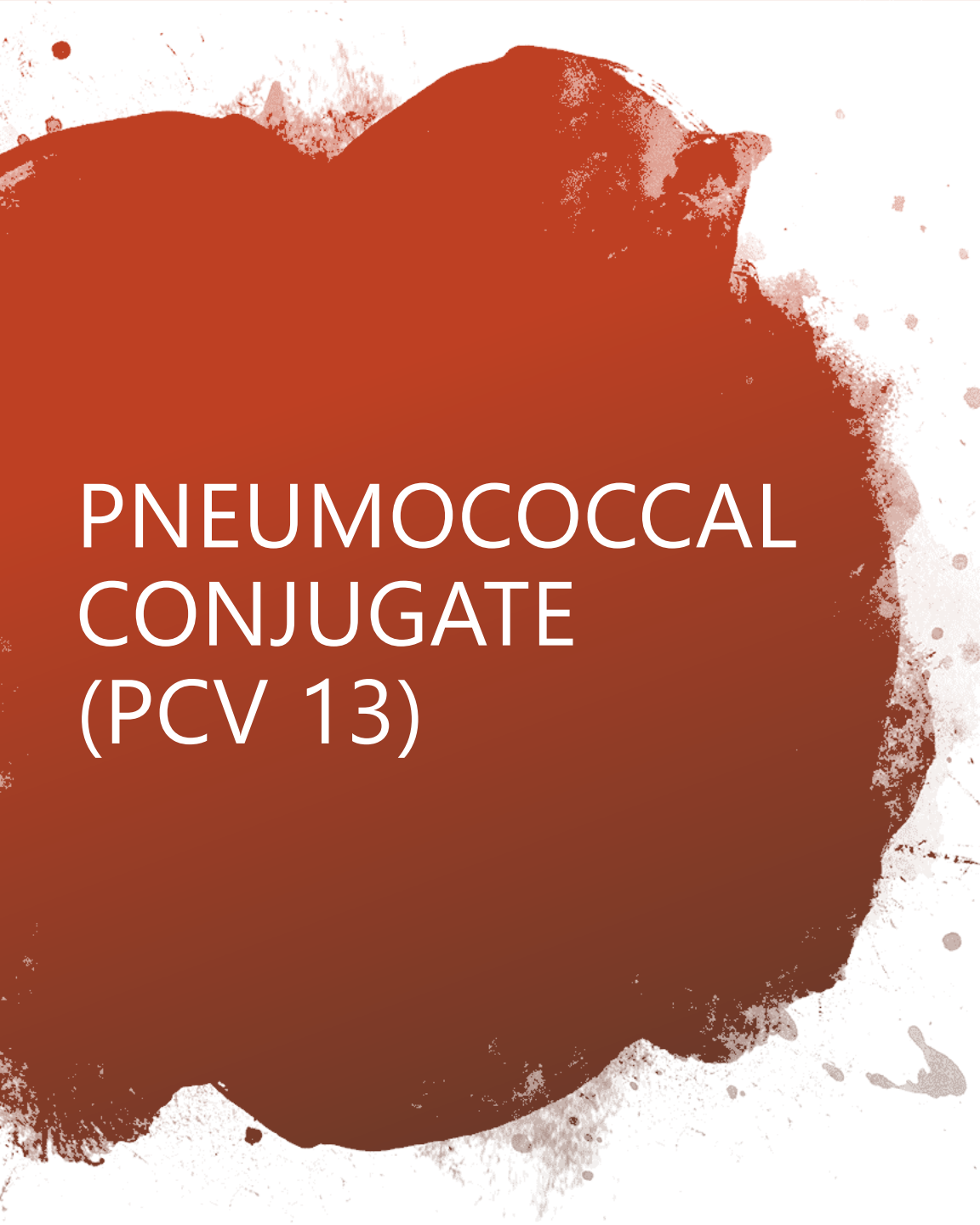
- 2 months
- 4 months
- 6 months (if needed; depends on brand)
- 12 through 15 months



PNEUMOCOCCAL DISEASE

PNEUMOCOCCAL

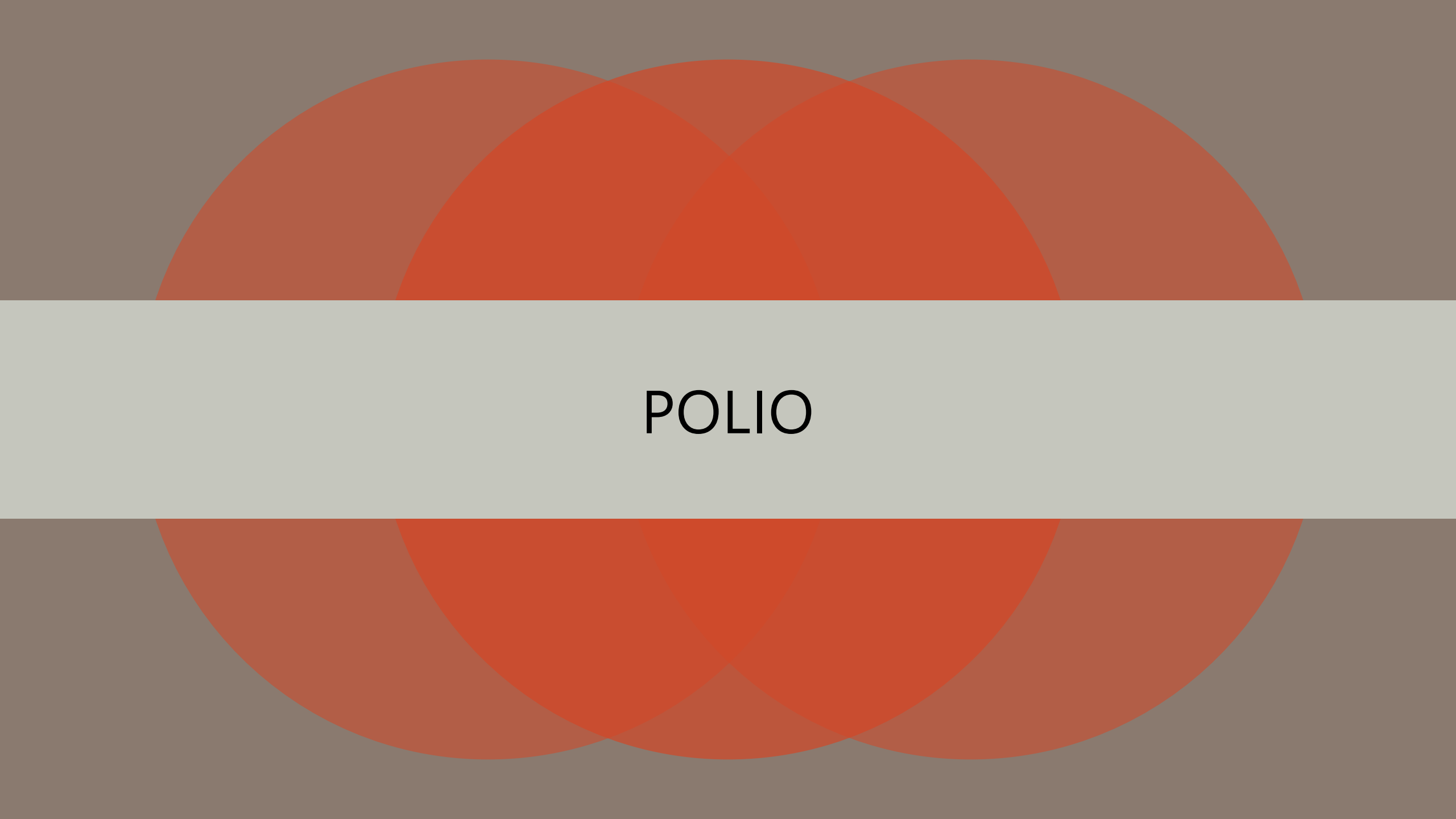
- Pneumococcal disease can include many different types of infections. Symptoms depend on the part of the body that is infected. Most pneumococcal infections are mild. However, some can be deadly or result in long-term problems.
 - Pneumonia (Lung Infection)
 - Bacteremia (Blood Infection)
 - Meningitis (Infection of the lining of the brain and spinal cord)
 - Sinusitis (sinus infection)
 - Otitis media (middle ear infection)
- Pneumococcal disease can be very serious.
 - **Pneumococcal pneumonia** causes an estimated **150,000 hospitalizations** each year in the United States.
 - **Pneumococcal meningitis and bacteremia** killed approximately **3,250 people** in the United States in 2019.



PNEUMOCOCCAL CONJUGATE (PCV 13)

CDC recommends shots at the following ages:

- 2 months
 - 4 months
 - 6 months
 - 12 through 15 months
-
- The vaccine helps protect against 13 types of pneumococcal bacteria that can cause serious infections in children and adults.



POLIO

POLIO

- Infectious disease caused by poliovirus that can affect the brain and spinal cord causing paralysis
- Can be crippling and deadly
- Virus spreads person-to-person
- Vaccination eliminated polio in the U.S.
- Polio remains a threat in other countries



Mozambique declares polio outbreak after identifying first wild case in 30 years

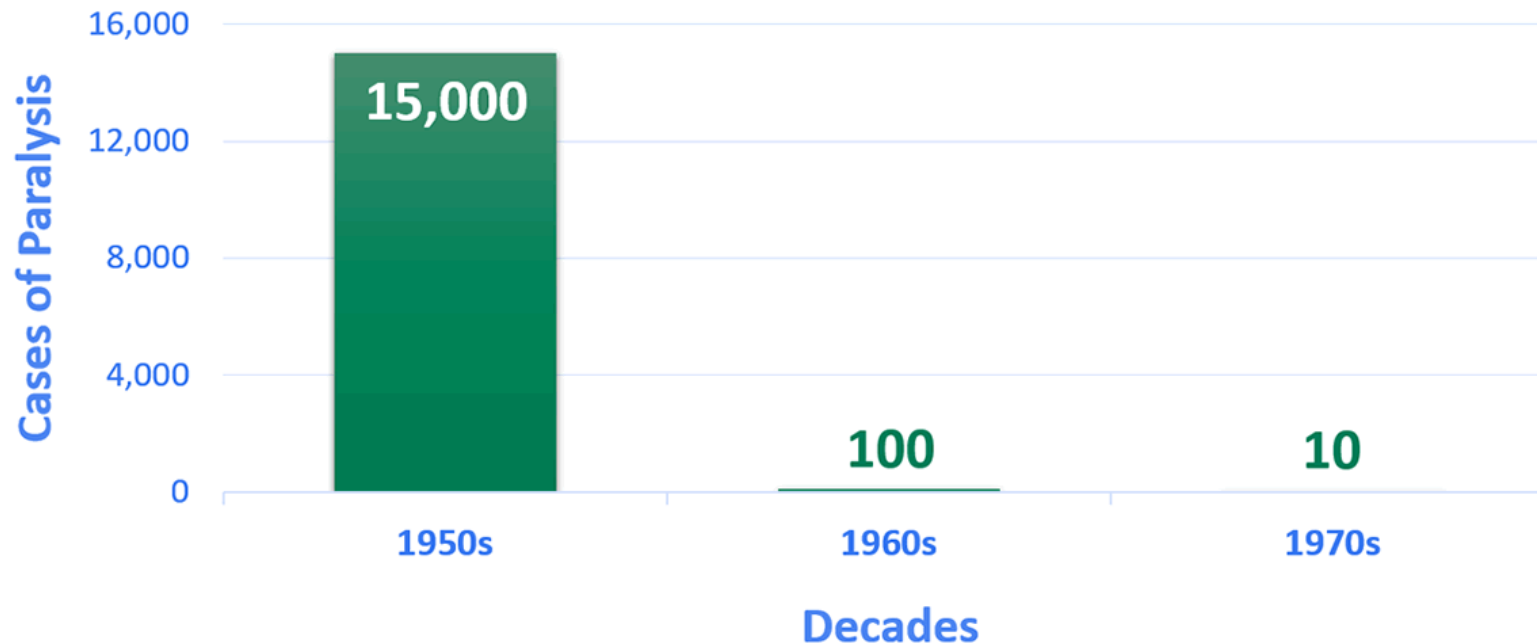
It's the first case of wild polio in Mozambique since 1992, although cases linked to a mutated virus from the oral vaccine were detected in 2019...

6 days ago

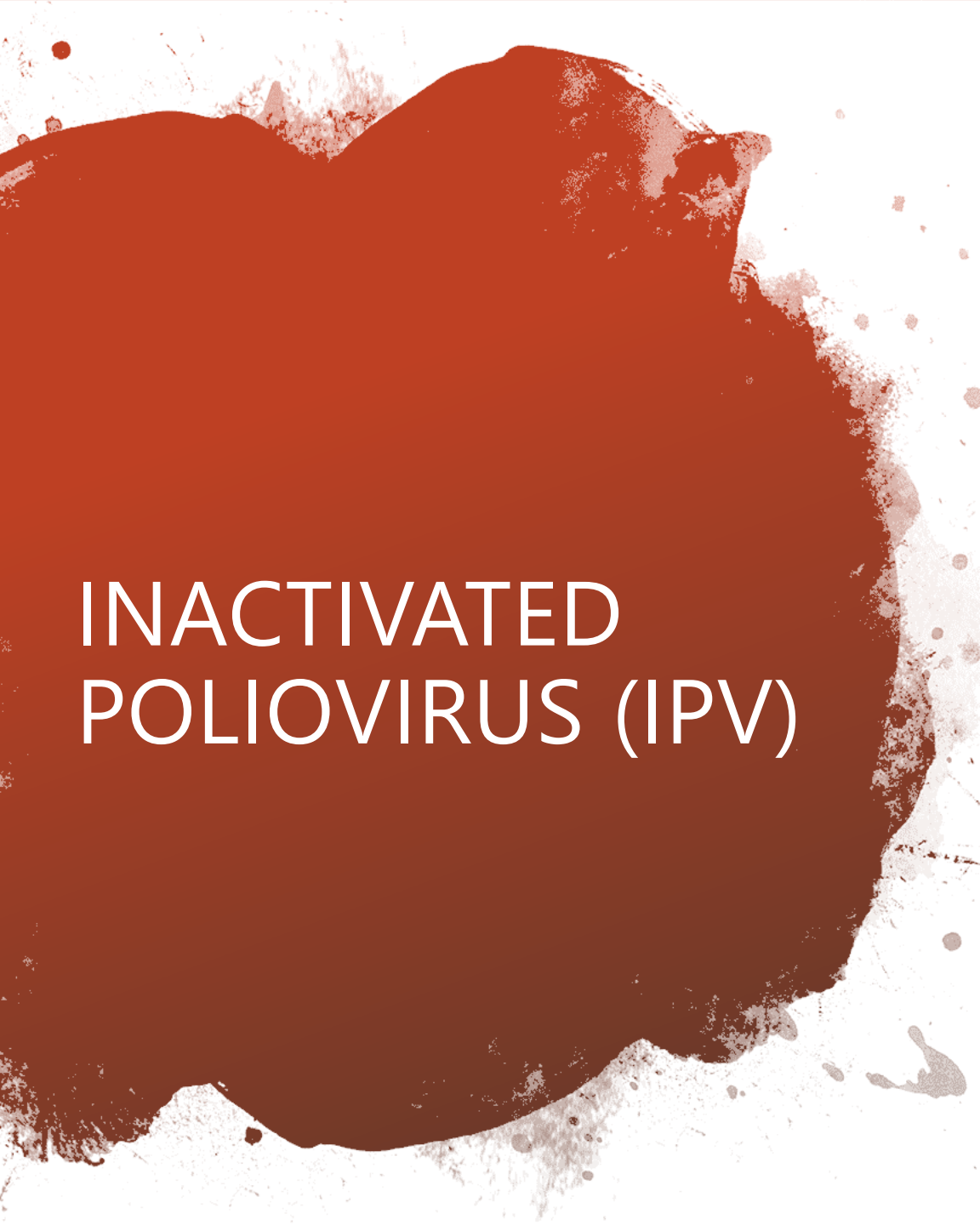


POLIO

Cases of Polio Paralysis in the United States Before (1950s) and After Polio Vaccine Introduction

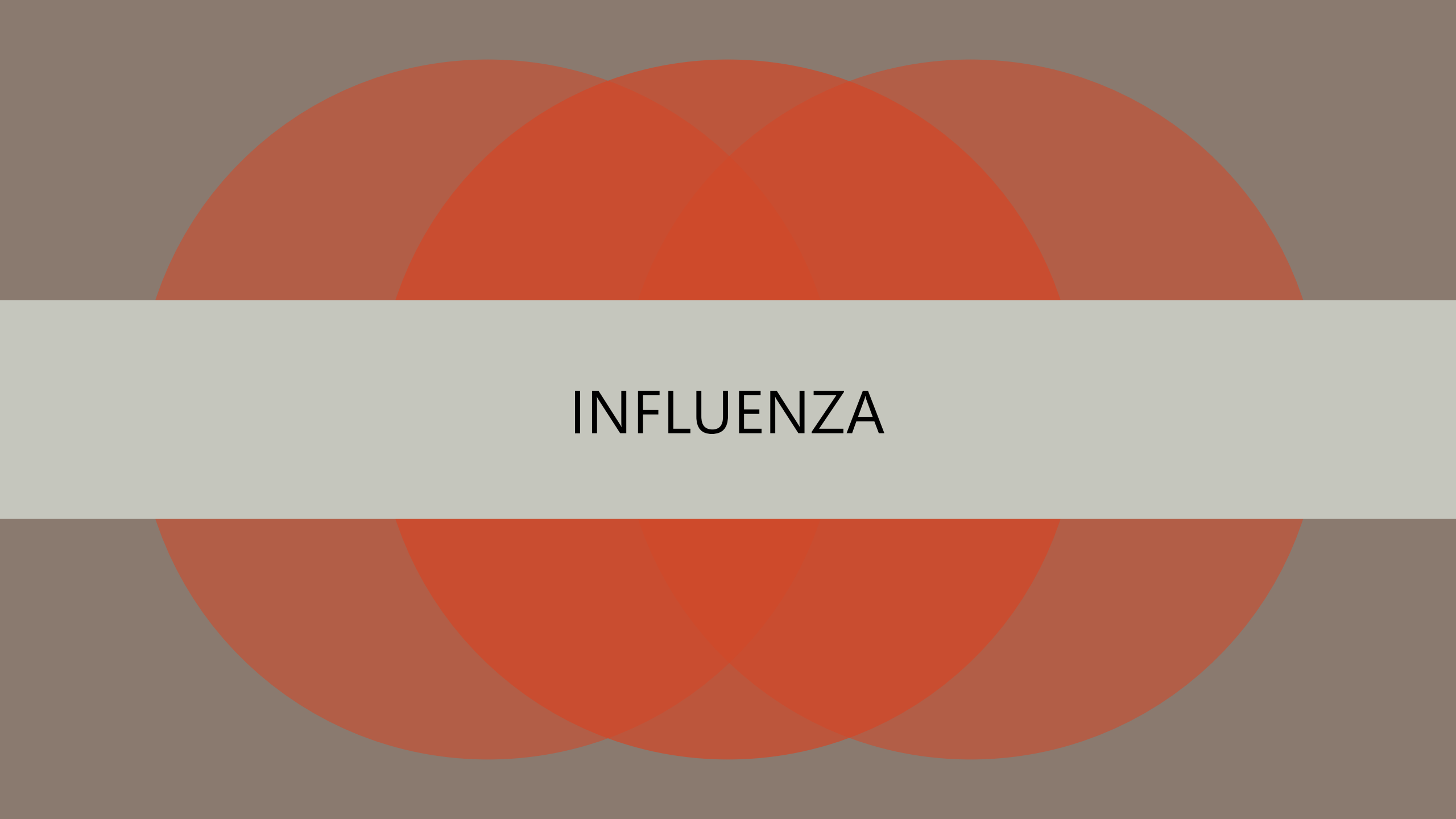


Since 1979, no cases of polio have originated in the U.S.



INACTIVATED POLIOVIRUS (IPV)

- All children should receive 4 doses of Polio Vaccine.
- CDC recommends shots at the following ages:
 - 2 months
 - 4 months
 - 6 through 18 months
 - 4 through 6 years

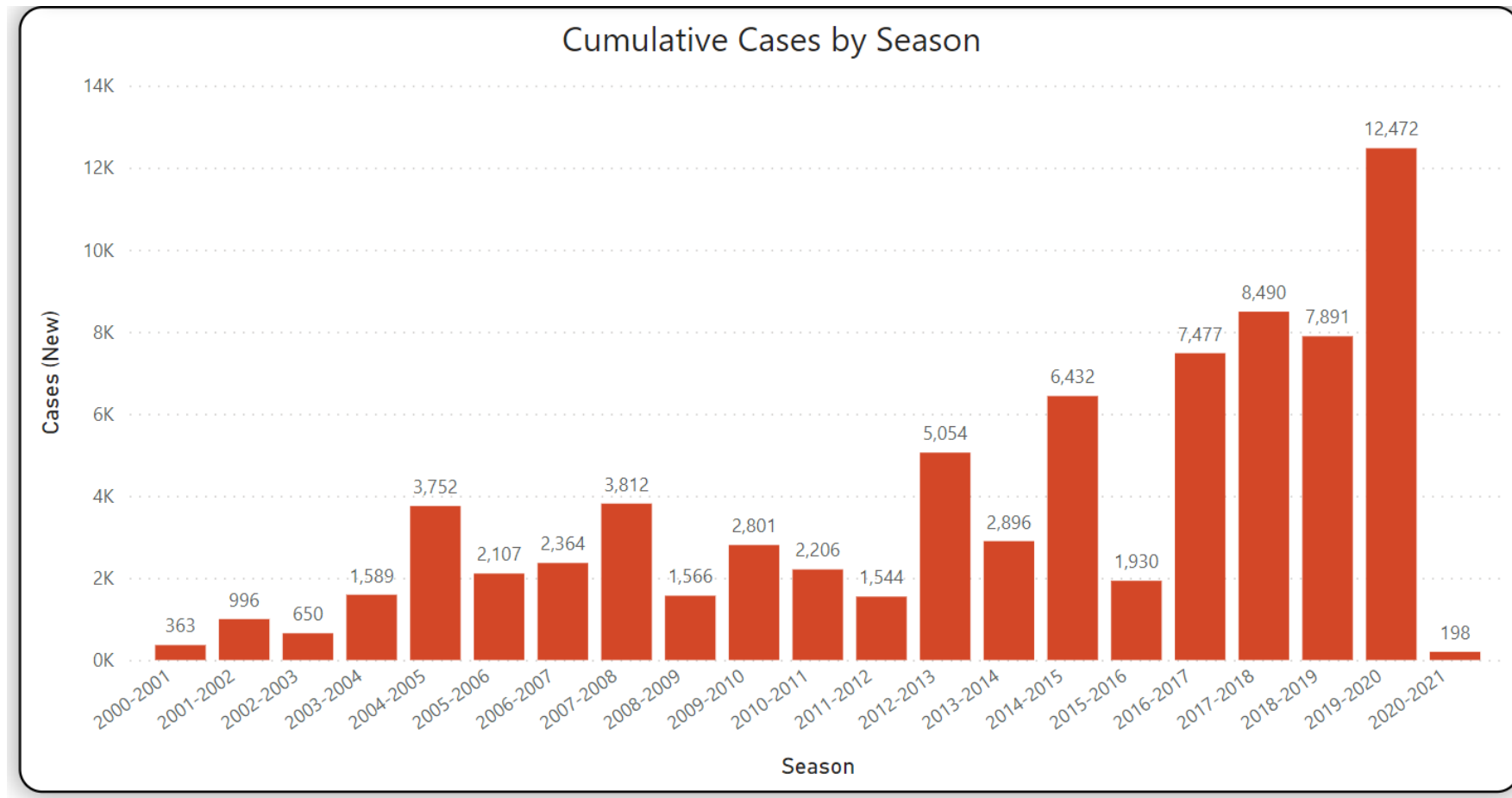


INFLUENZA

INFLUENZA

- Respiratory illness that infects the nose, throat, and lungs
- Affects people differently based on immune system, age, and health
- Dangerous for children at any age; children <6 months more likely to need hospital care
- Symptoms in children can include coughing, fever, aches, fatigue, vomiting, and diarrhea
- Every year in the U.S., otherwise healthy children are hospitalized or die from flu complications

INFLUENZA





INFLUENZA

- **Everyone ≥ 6 months needs a flu vaccine yearly**
- Pregnant women should get a flu vaccine during pregnancy and all caregivers and close contacts of infants should be vaccinated



MEASLES, MUMPS, RUBELLA (MMR)

MEASLES

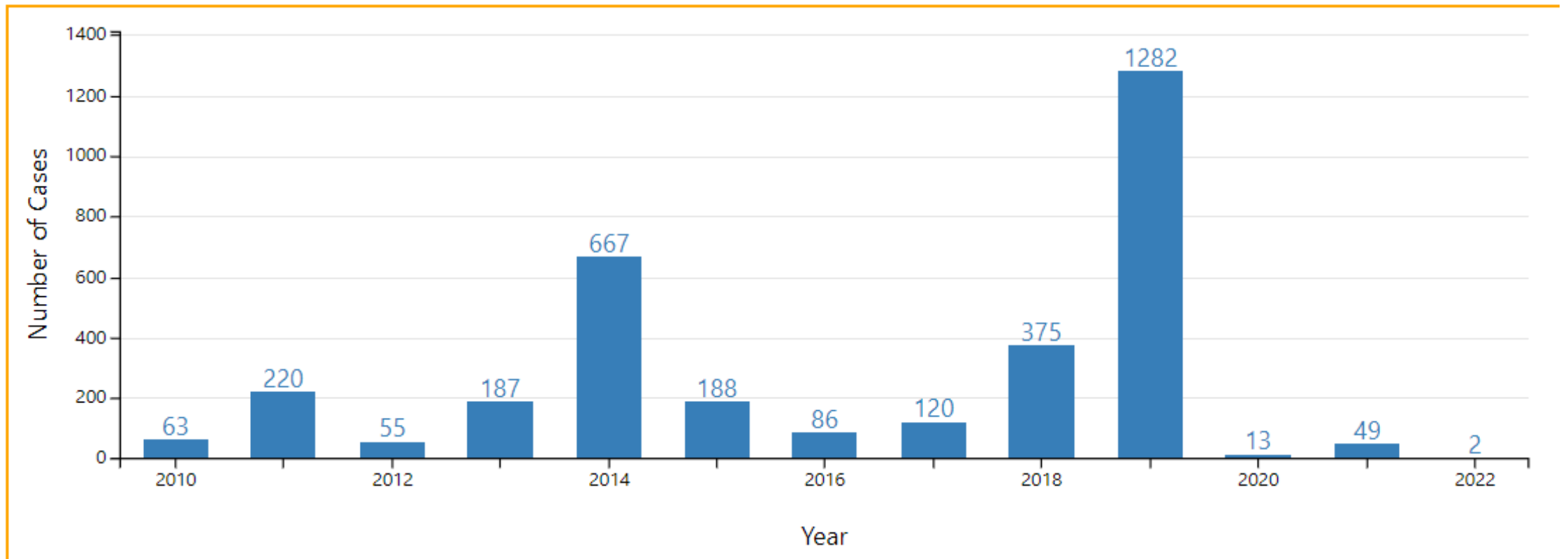
- Highly contagious, very serious illness, especially for young children
 - A child can contract measles by being in a room with an infected person, up to 2 hours after the infected person has left
- Common in some parts of the world; unvaccinated travelers can get measles and bring it to U.S.
- Outbreaks have occurred in U.S. in unvaccinated



MEASLES

Number of measles cases reported by year

2010-2022* (as of April 29, 2022)

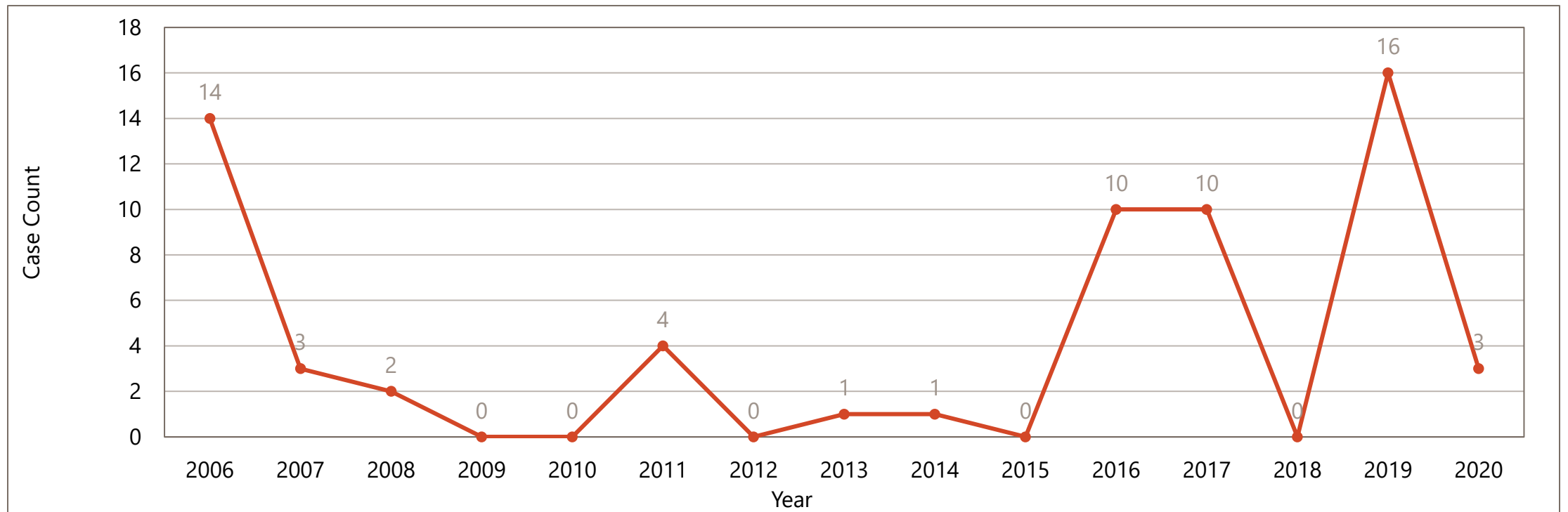


MUMPS

- Contagious disease with no treatment
- Best known for causing puffy cheeks and a swollen jaw due to swelling of the salivary glands
- Can also cause:
 - Orchitis (inflammation of testicles)
 - Deafness
 - Encephalitis (inflammation of brain)
 - Meningitis (inflammation of protective membrane covering brain/spinal cord)
- Still a threat today—every year, people get mumps in the U.S.
 - Outbreaks involve close, extended contact with infected people (ex. classrooms or sports teams)

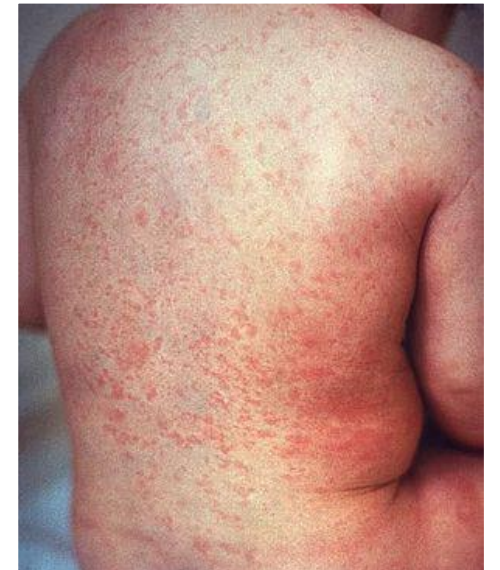


MUMPS CASES IN NORTH DAKOTA, 2006-2020



RUBELLA

- “German measles”
- Spread by coughing and sneezing
- Especially dangerous for pregnant women and developing babies
 - Can cause miscarriage or death right after birth
 - Infection can be passed to developing baby causing serious birth defects



RUBELLA

- Before the rubella vaccination program started in 1969, rubella was a common and widespread infection in the United States.
- During the last major rubella epidemic in the United States from 1964 to 1965, an estimated 12.5 million people got rubella, 11,000 pregnant women lost their babies, 2,100 newborns died, and 20,000 babies were born with congenital rubella syndrome (CRS).
- Today, less than 10 people in the United States are reported as having rubella each year. Since 2012, all rubella cases had evidence that they were infected when they were living or traveling outside the United States.



MEASLES, MUMPS, RUBELLA (MMR)

- Two doses of MMR vaccine are routinely recommended for all children
- CDC recommends shots at the following ages:
 - 12 to 15 months
 - 4 through 6 years of age



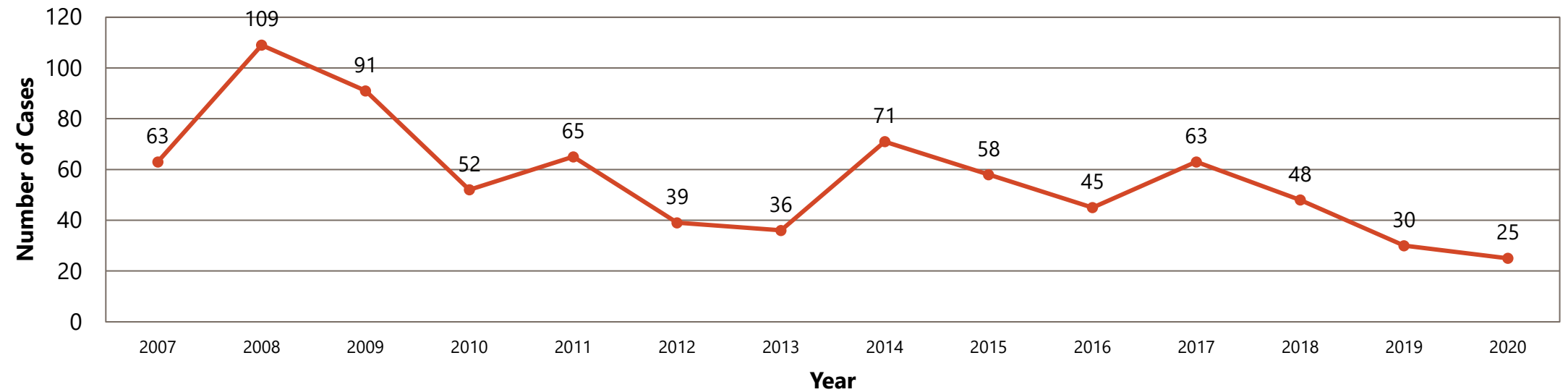
VARICELLA (CHICKENPOX)

CHICKENPOX

- Infectious disease that causes fever and itchy, blistery rash
- Infected people may have as many as 500 blisters all over the body
- Can be serious and life-threatening, especially in babies, adults, and people with weakened immune systems
- Even healthy children can get very ill
- Chickenpox used to be very common in the United States. In the early 1990s, an average of 4 million people got chickenpox, 10,500 to 13,000 were hospitalized, and 100 to 150 died each year.



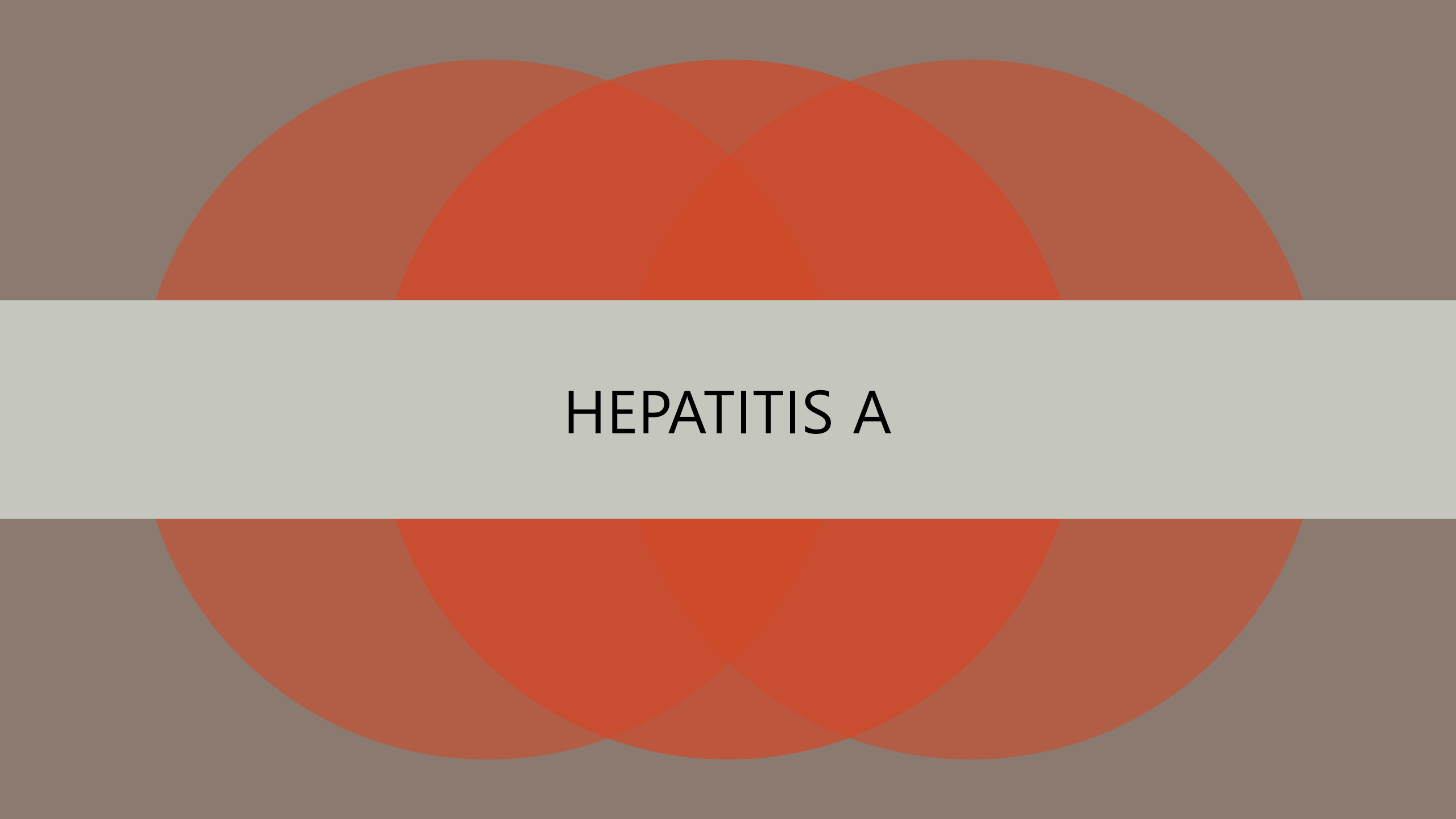
VARICELLA (CHICKENPOX) CASES IN NORTH DAKOTA 2007-2020





VARICELLA (CHICKENPOX)

- **Children** should get two doses of varicella vaccine.
- CDC recommends shots at the following ages:
 - 12 through 15 months
 - 4 through 6 years



HEPATITIS A

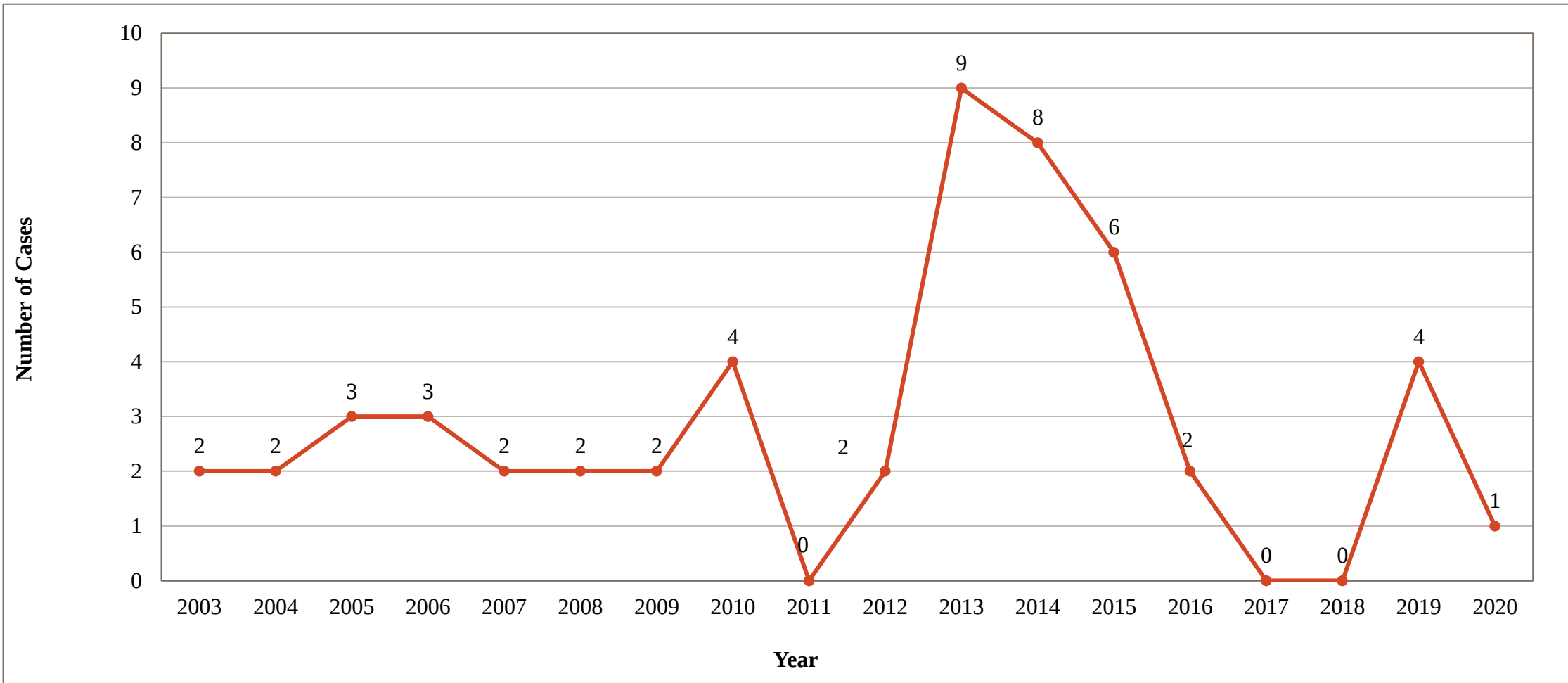
HEPATITIS A

- Hepatitis A is a highly contagious, short-term liver infection caused by the hepatitis A virus.
- People who get hepatitis A may feel sick for a few weeks to several months but usually recover completely and do not have lasting liver damage.
- In rare cases, hepatitis A can cause liver failure and even death; this is more common in older people and in people with other serious health issues, such as chronic liver disease.
- What are the symptoms of hepatitis A?
- Not everyone with hepatitis A has symptoms. Adults are more likely to have symptoms than children. If symptoms develop, they usually appear 2 to 7 weeks after infection. Symptoms usually last less than 2 months, although some people can be ill for as long as 6 months.

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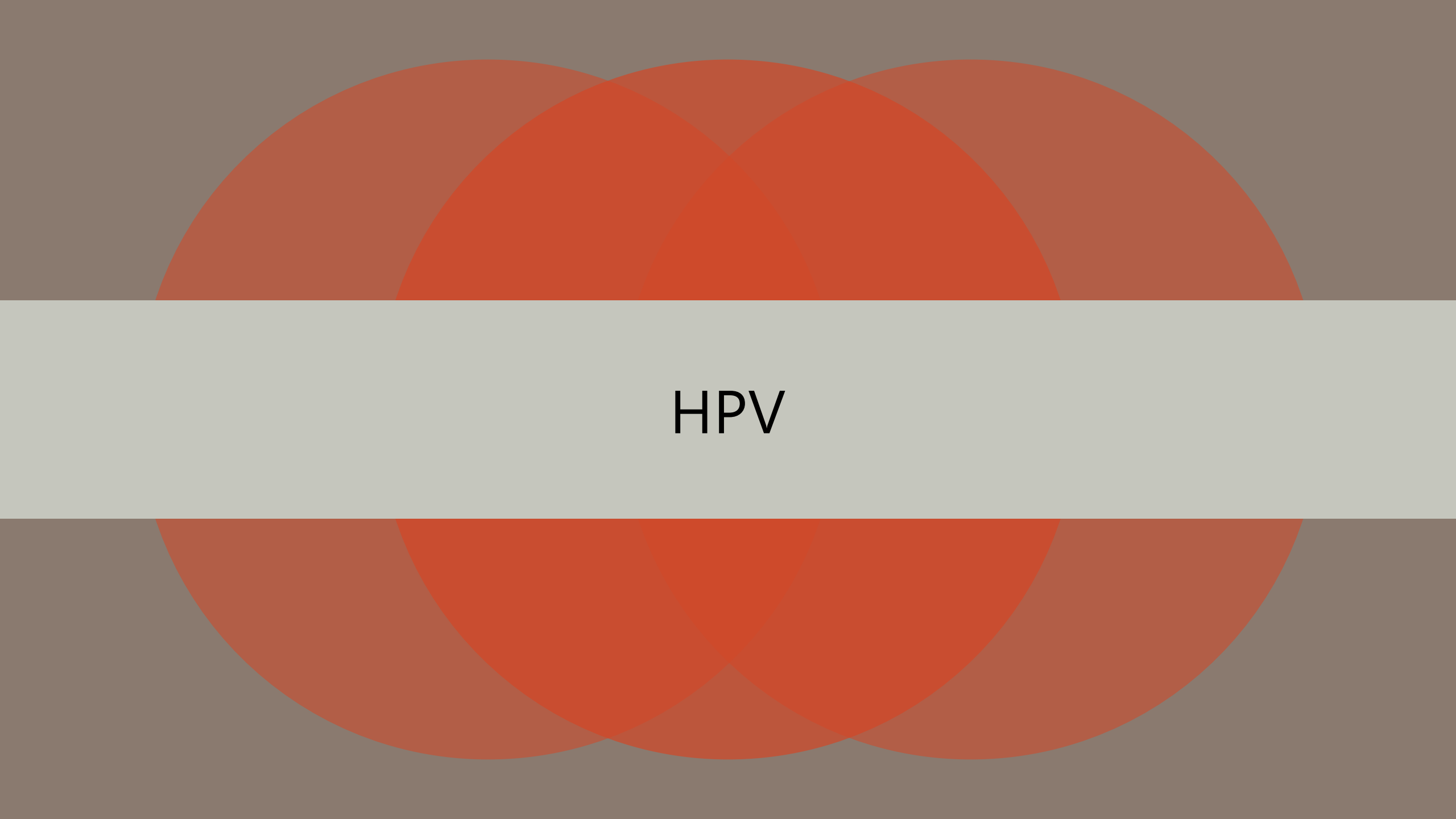
HEPATITIS A CASES IN NORTH DAKOTA, 2003-2020





HEPATITIS A

- Children should get two doses of hepatitis A vaccine.
- CDC recommends shots at the following ages:
 - 12 through 23 months
 - 6 months later

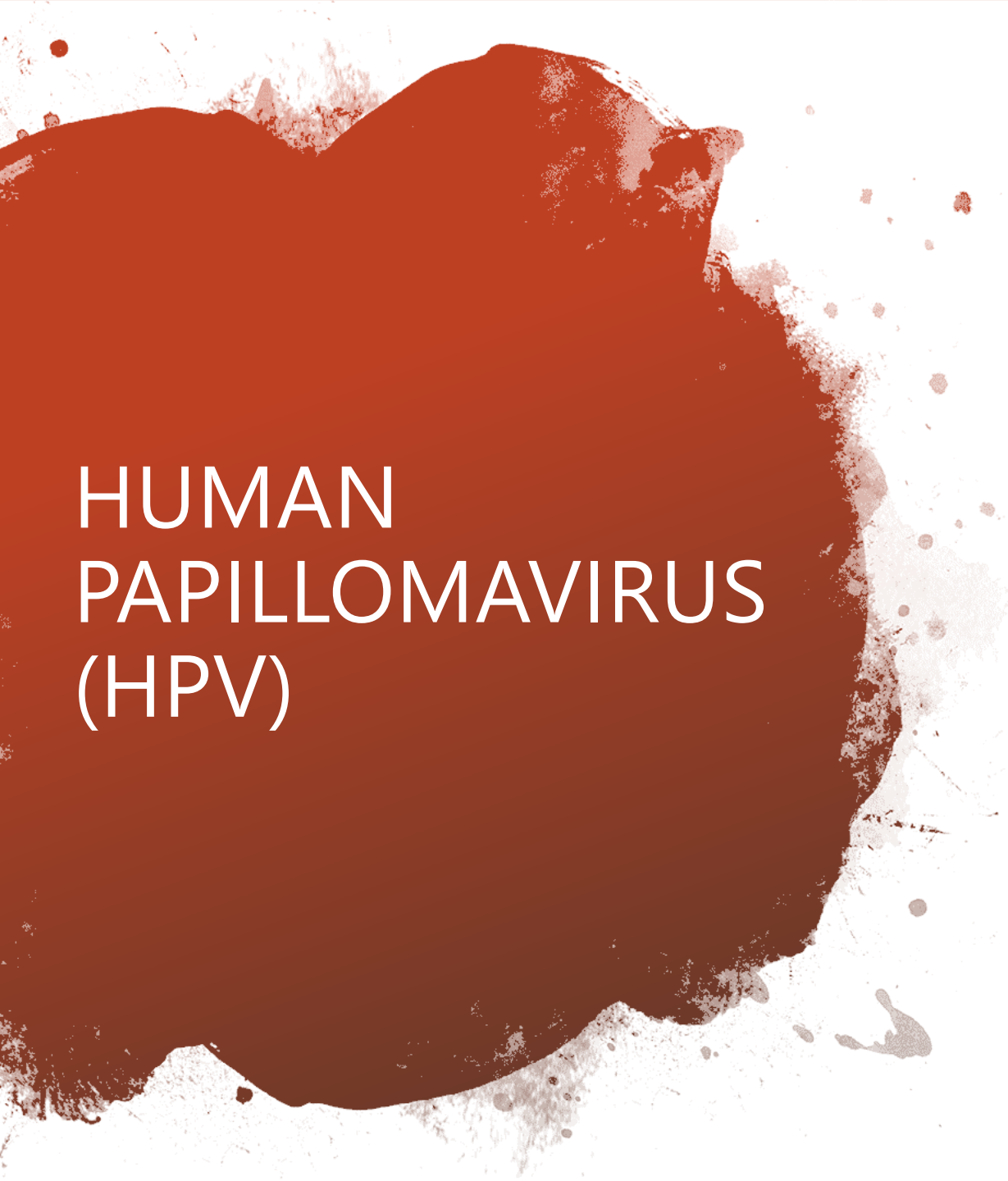


HPV

HPV

- HPV infections can cause disfiguring lesions and certain types of cancer
- Spread through intimate skin-to-skin or sexual contact
- HPV infections very common; nearly all men and women will get at least 1 type of HPV at some time in their lives
- Vaccine prevents $\geq 90\%$ of cancers caused by HPV





HUMAN PAPILLOMAVIRUS (HPV)

CDC recommends that 11- to 12-year-olds receive two doses of HPV vaccine 6 to 12 months apart.

- The first dose is routinely recommended at ages 11–12 years old. The vaccination can be started at age 9 years.
- Only two doses are needed if the first dose was given before 15th birthday.
- Teens and young adults who start the series later, at ages 15 through 26 years, need three doses of HPV vaccine.



MENINGOCOCCAL DISEASE

MENINGOCOCCAL DISEASE

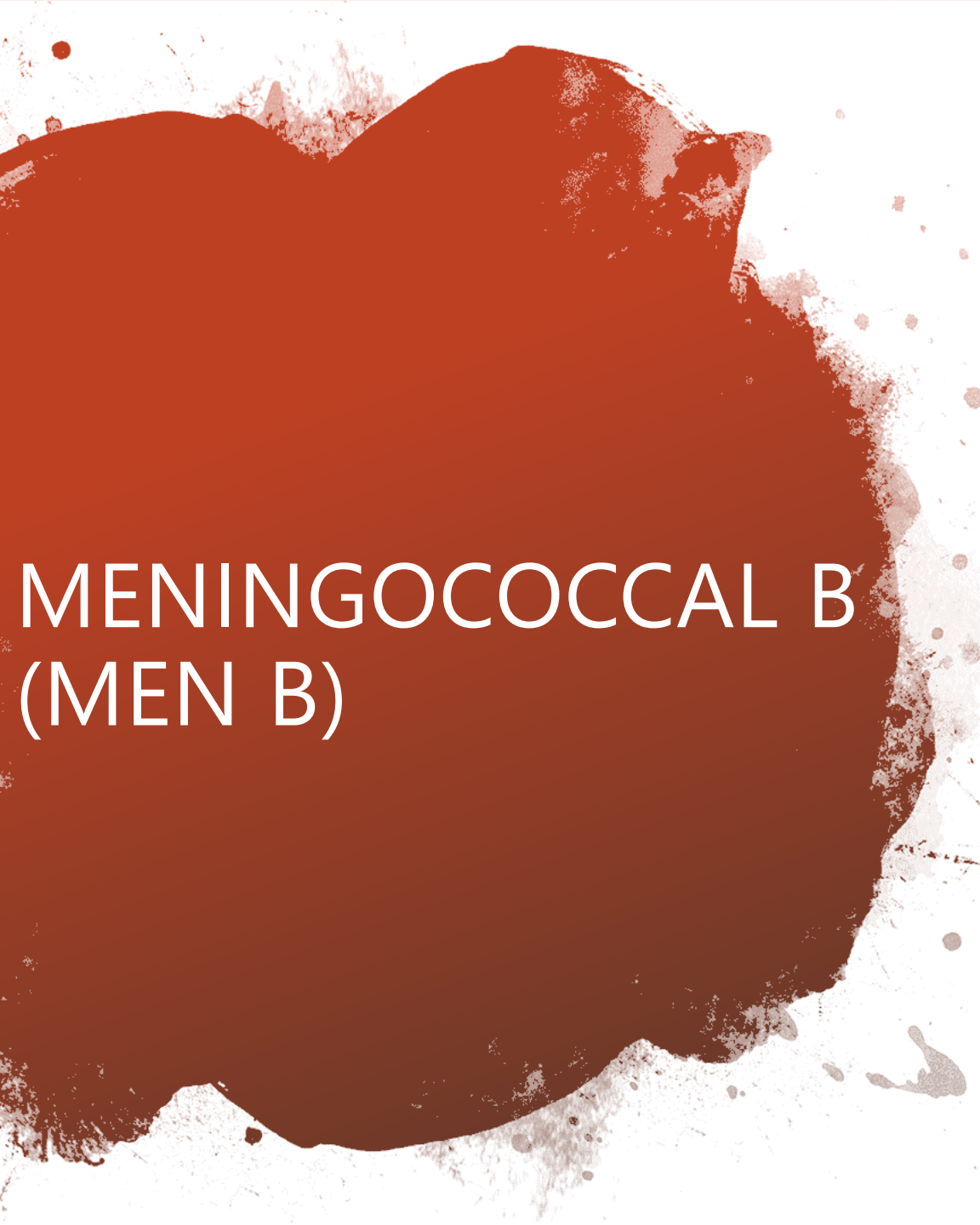
- Causes meningitis (infection of the lining of brain and spinal cord) and infections of the blood
- Even when treated, meningococcal disease kills 10 – 15:100 people
 - Of those who survive, 10 - 20:100 suffer disabilities such as hearing loss, brain damage, kidney damage, loss of limbs, nervous system problems
- High-risk groups:
 - Infants <1 year
 - Adolescents and young adults 16 - 23 years
 - Immunosuppressed





MENINGOCOCCAL CONJUGATE (MENACWY)

- All preteens and teens should get 2 doses of the meningococcal conjugate (MenACWY) vaccine.
- CDC recommends shots at the following ages:
 - 11-12 years
 - 16 years



MENINGOCOCCAL B (MEN B)

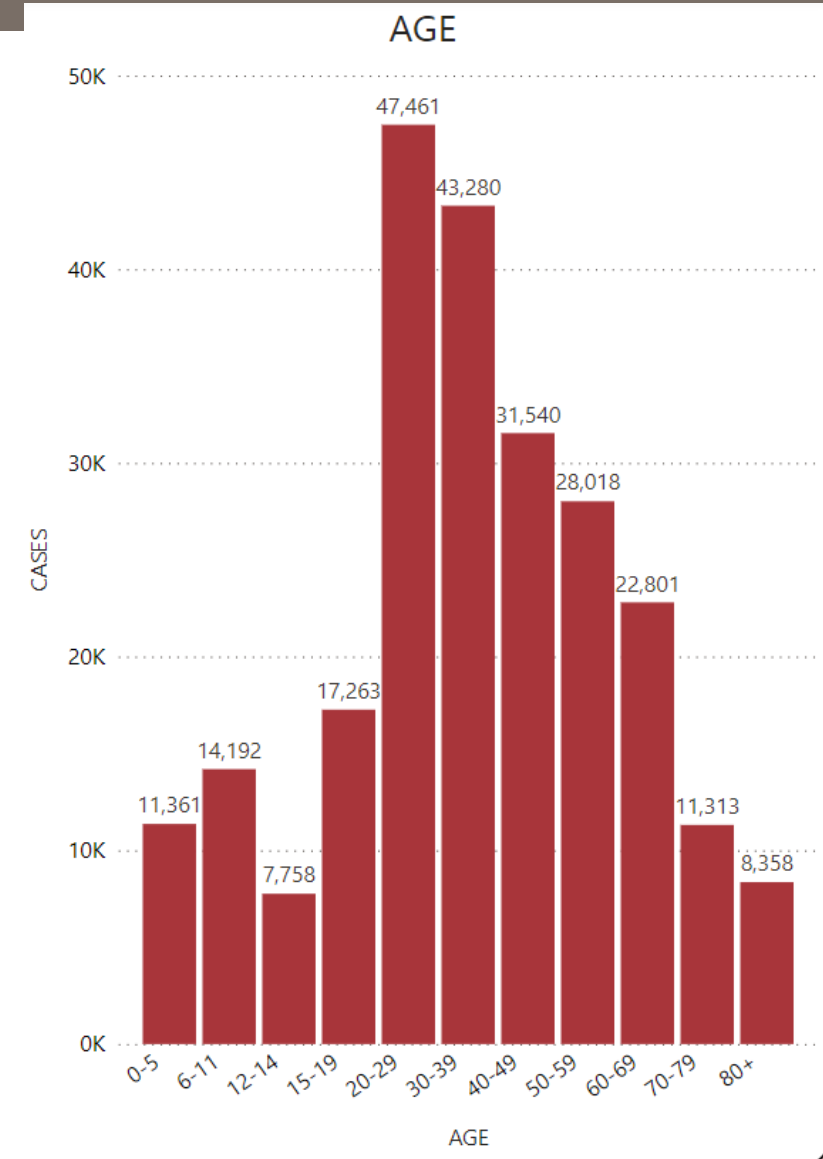
- Teens and young adults (16 through 23 years old) may also get a serogroup B meningococcal (MenB) vaccine.
- The preferred age to get MenB vaccine is 16 through 18 years old.
- Talk with your teen's doctor or nurse about meningococcal vaccination to help protect your child's health.

The image features a minimalist design with a gray background. Three large, overlapping circles in a vibrant orange color are positioned horizontally across the upper and lower portions of the frame. A solid white horizontal band cuts across the center of the image, passing through the middle of the three circles. The text "COVID-19" is centered within this white band.

COVID-19

COVID-19 DISEASE

- Novel coronavirus SARS-CoV-2
- Symptoms range from none to respiratory failure
- 999,000+ deaths in the U.S.
 - At least 1,000 deaths in children <18 years old
- MIS-C: rare but serious inflammatory syndrome in children who have been previously exposed to the virus



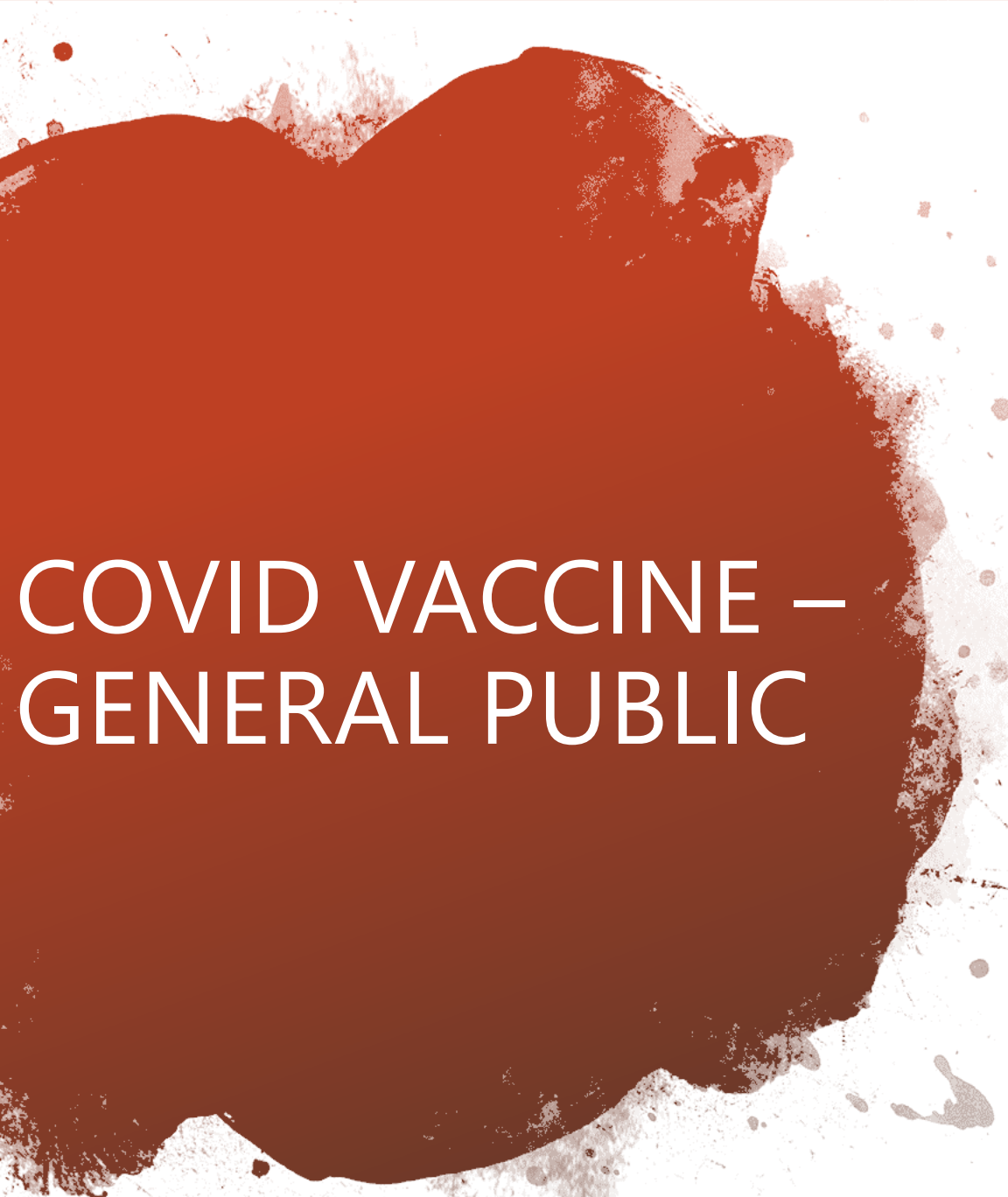
COVID-19 VACCINES AMONG CHILDREN AGES 5-11 YEARS

During the Omicron predominant period in the United States...

- COVID-19 incidence rates: 1.3X higher among unvaccinated children ages 5 – 11 years
- COVID-19 hospitalization rates: 2x higher among unvaccinated children ages 5-11 years
 - **87% of hospitalized children were unvaccinated**
 - 1/3 of hospitalized children had no underlying health conditions

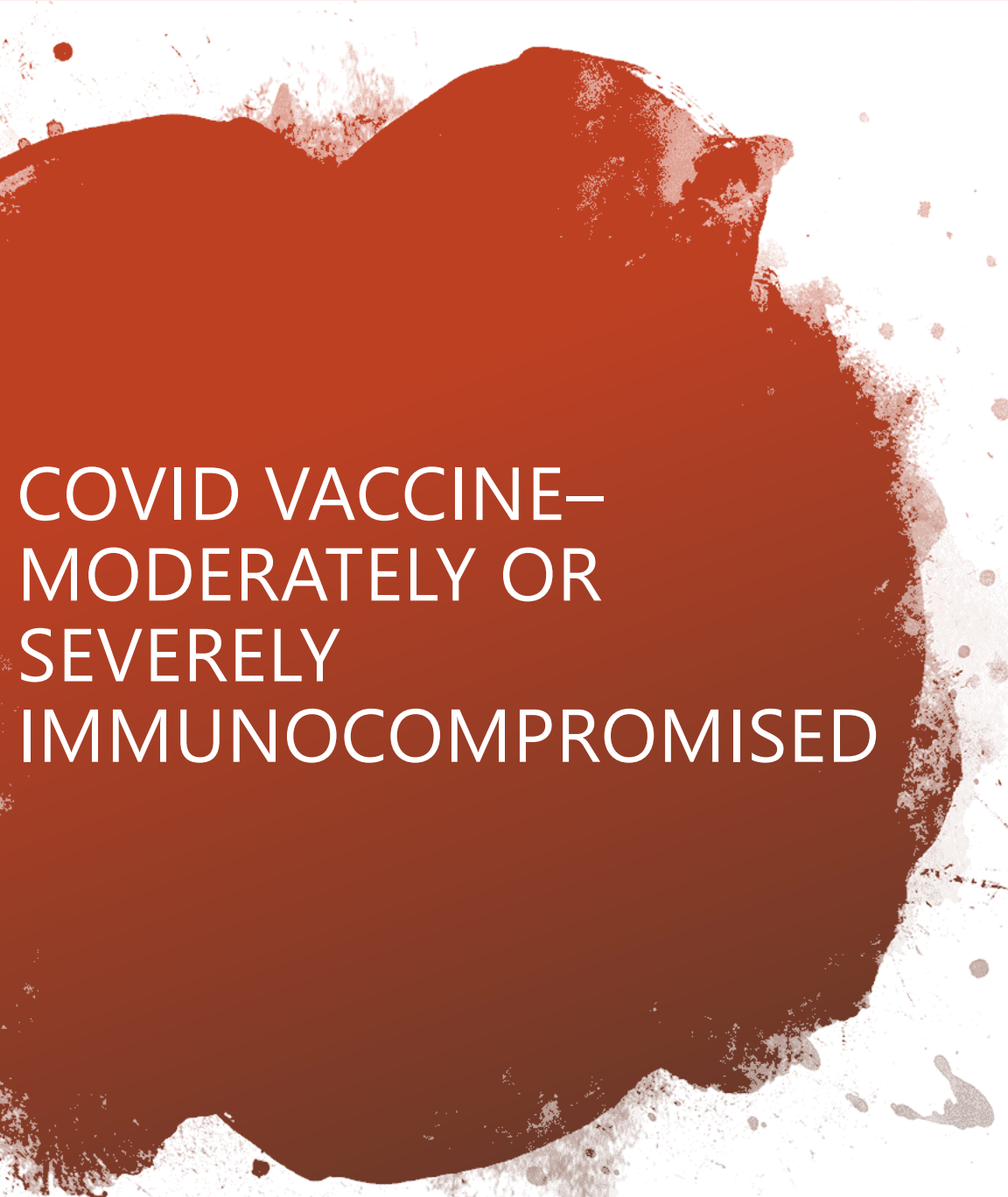
What are the Current COVID-19 Vaccine Recommendations for Children and Adolescents





COVID VACCINE – GENERAL PUBLIC

- Currently everyone 5 years and older is recommended to receive COVID-19 Immunizations.
- General Public (5-18 years old) – 2 dose primary series + 1 booster dose
 - 2 doses of Pfizer-BioNTech given 3–8 weeks apart – Primary Series
 - 1 booster dose at least 5 months after the final dose in the primary series



COVID VACCINE— MODERATELY OR SEVERELY IMMUNOCOMPROMISED

- 5-11 years old – 3 dose primary series + booster dose
 - 2nd dose given 3 weeks (21 days) after 1st dose
 - 3rd dose given at least 4 weeks (28 days) after 2nd dose
 - Booster dose given at least 3 months after 3rd dose
- 12-18 years old – 3 dose primary series + 2 booster doses
 - 2nd dose given 3 weeks (21 days) after 1st dose
 - 3rd dose given at least 4 weeks (28 days) after 2nd dose
 - First Booster dose given at least 3 months after 3rd dose
 - Second Booster given at least 4 months after 4th dose

COVID VACCINE 5-18 YEARS OLD – MODERATELY OR SEVERELY IMMUNOCOMPROMISED

- Moderate or Severely Immunocompromised conditions and treatments include but are not limited to:
 - Active treatment for solid tumor and hematologic malignancies
 - Receipt of solid-organ transplant and taking immunosuppressive therapy
 - Receipt of CAR-T-cell or hematopoietic stem cell transplant (within 2 years of transplantation or taking immunosuppression therapy)
 - Moderate or severe primary immunodeficiency (e.g., DiGeorge syndrome, Wiskott-Aldrich syndrome)
 - Advanced or untreated HIV infection
 - Active treatment with high-dose corticosteroids (i.e., ≥ 20 mg prednisone or equivalent per day), alkylating agents, antimetabolites, transplant-related immunosuppressive drugs, cancer chemotherapeutic agents classified as severely immunosuppressive, tumor-necrosis (TNF) blockers, and other biologic agents that are immunosuppressive or immunomodulatory.
- The FDA amended authorization and ACIP recommendation do not universally apply to people with other chronic conditions or all long term care residents.

PFIZER-BIONTECH

Child/Adolescent COVID-19 Vaccination Schedules

Key: Pfizer COVID-19 Vaccine Up to Date on COVID-19 Vaccines

Individuals ages 5 - 17 years are only authorized to receive the Pfizer-BioNTech COVID-19 vaccine.

Age & Indication	Months											
	0	1	2	3	4	5	6	7	8	9	10	11
★ 5 - 11 years	1 dose (Pfizer)	1 dose (Pfizer) 21 days after dose 1					1 dose (Pfizer) ≥5 months after dose 2					
	1 dose (Pfizer)	1 dose (Pfizer) 3 - 8 weeks after dose 1					1 dose (Pfizer) ≥5 months after dose 2					
★ 5 - 11 years Moderately or Severely Immuno-compromised	1 dose (Pfizer)	1 dose (Pfizer) 21 days after dose 1	1 dose (Pfizer) 28 days after dose 2			1 dose (Pfizer) ≥3 months after dose 3						
	1 dose (Pfizer)	1 dose (Pfizer) 21 days after dose 1	1 dose (Pfizer) 28 days after dose 2			1 dose (Pfizer) ≥3 months after dose 3				1 dose* (Pfizer) ≥4 months after dose 4		
12 - 17 years	1 dose (Pfizer)	1 dose (Pfizer) 21 days after dose 1	1 dose (Pfizer) 28 days after dose 2			1 dose (Pfizer) ≥3 months after dose 3				1 dose* (Pfizer) ≥4 months after dose 4		
	1 dose (Pfizer)	1 dose (Pfizer) 21 days after dose 1	1 dose (Pfizer) 28 days after dose 2			1 dose (Pfizer) ≥3 months after dose 3				1 dose* (Pfizer) ≥4 months after dose 4		
Primary Series							1st Booster Dose			2nd Booster Dose		

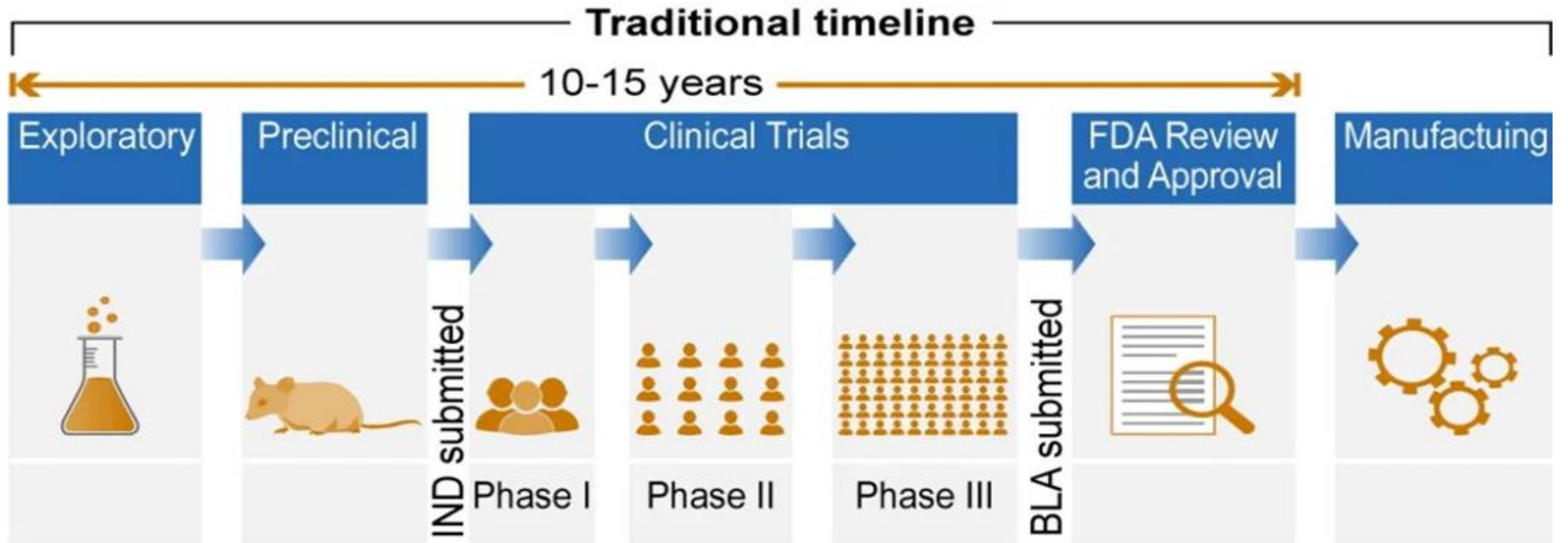
*Certain populations are now eligible to get a second booster dose at least 4 months after their first booster dose. For more information, please visit the North Dakota Department of Health's Second Booster Dose FAQ linked [here](#).

UPDATED: May 23, 2022

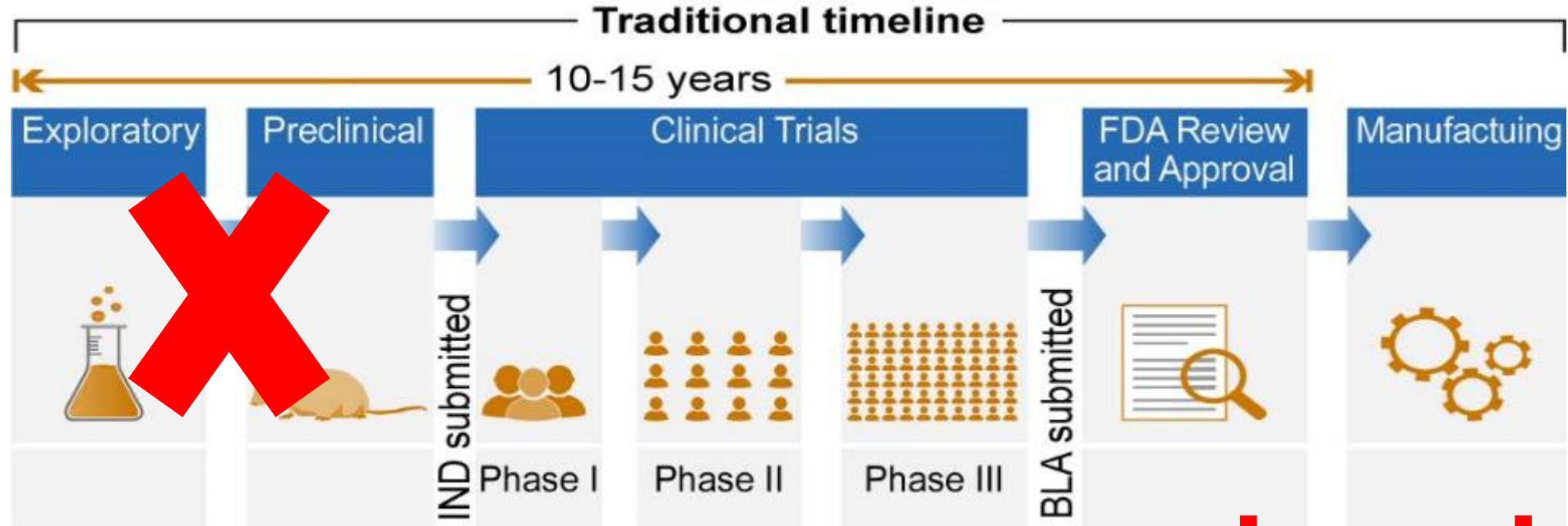
**How did we develop
a COVID-19 vaccine
so fast?**



VACCINE DEVELOPMENT TIMELINE



THE "WARP SPEED"



BLA = Biologics License Application

EUA = Emergency Use Authorization

IND = Investigational New Drug

**How do we know
the COVID-19
vaccines are safe?**



VACCINE SAFETY SURVEILLANCE IN THE U.S.

- Vaccine Adverse Events Reporting System (VAERS):
 - Nation's early warning system that monitors the safety of vaccines after they are authorized or licensed for use.
 - Anyone can report an adverse event
 - Does not determine causation
- Vaccine Safety Datalink (VSD)
 - Uses electronic medical records from nine health systems to study vaccine safety.
 - Looks for diagnoses and events that occur after vaccination.
- Clinical Immunization Safety Assessment (CISA)
 - Network of seven research centers that study vaccine safety.
- V-Safe: NEW
 - Patients receive a QR code after vaccination and can self report side effects.
- Other...

VAERS

- “I heard that thousands of people have died from the COVID-19 vaccine. Is this true?”
 - There is a difference in dying **from** a vaccine than **after** a vaccine.
 - Deaths have been reported to VAERS after vaccination.
 - Experts further study if there is a pattern of deaths and compare deaths in vaccinated vs. unvaccinated.
- If you gave 10 million Americans a sugar pill over 2 months you would see...
 - 14,000 deaths

**Are there any
known, adverse
events from
receiving a COVID
vaccine?**



ADVERSE EVENTS ASSOCIATED WITH COVID-19 VACCINES

- mRNA vaccines (Pfizer, Moderna)
 - Common:
 - Pain, redness, swelling and injection site, fatigue, headache, fever, muscle aches, chills, joint pain
 - Rare:
 - Anaphylaxis (allergic reaction)
 - Myocarditis/pericarditis
- J&J vaccine:
 - Common: Same as above
 - Rare:
 - Blood clots
 - Guillain-Barre Syndrome (GBS)

MYOCARDITIS

- Myocarditis (heart inflammation) not identified in clinical trial.
 - Has been linked to mRNA vaccines in individuals.
 - Highest reported rate in 16-17 year-old males at 74.2 cases per 1 million doses administered (VAERS)
 - More common in males than females
 - Vaccine-induced myocarditis more mild than that caused by illness.
 - Myocarditis occurs at a higher rate after COVID-19 illness.
 - 876 cases per 1 million males ages 12-17 infected**.
 - 6 times more likely to have myocarditis post COVID-19 infection than after vaccination.
 - Baseline rate of myocarditis in children ages 5 – 11 lower than adolescents.

**Risk of Myocarditis from COVID-19 Infection in People Under Age 20: A Population-Based Analysis | medRxiv

VACCINE SAFETY- MYOCARDITIS

In the 5 -11 age group (primary series), only **20 cases of myocarditis have been reported to VAERS** (that met CDC definition) out of **18.1 million doses administered**.

- Median age 9 years, onset 3 days after vaccination on average
- Myocarditis in the 5-11 population is more common following dose 2 and in males, similar to older populations.
- The risk of cardiac complications is **higher from COVID-19 disease** compared to mRNA vaccination.

VAERS reporting rates of myocarditis (per 1 million doses administered) after Pfizer-BioNTech vaccine, days 0–7 and 8–21 after vaccination^{*,†}

		0–7 days		8–21 days		0–7 days		8–21 days	
		Males		Males		Females		Females	
Ages (yrs)		Dose 1	Dose 2	Dose 1	Dose 2	Dose 1	Dose 2	Dose 1	Dose 2
→ For reference	5–11	0.2	2.7	0.6	0.0	0.2	0.8	0.2	0.0
	12–15	5.1	48.1	1.6	1.3	0.9	4.3	0.5	0.2
	16–17	6.9	74.2	1.7	2.8	0.0	7.2	0.7	0.4
	18–24	2.6	35.3	1.2	2.2	0.7	3.1	0.1	0.7
	25–29	1.3	12.8	0.4	0.8	0.2	2.0	0.4	0.0
	30–39	0.8	6.0	0.0	0.7	0.6	1.0	0.1	0.1
	40–49	0.3	3.0	0.1	0.3	0.2	1.6	0.2	0.1
	50–64	0.3	0.5	0.0	0.2	0.4	0.6	0.2	0.6
	65+	0.2	0.1	0.1	0.3	0.1	0.5	0.3	0.4

* As of April 24, 2022; reports verified to meet case definition by provider interview or medical record review. Doses administered as of April 21, 2022

† An estimated 1–10 cases of myocarditis per 100,000 person years occurs among people in the United States, regardless of vaccination status; adjusted for days 0–7 and 8–21 risk intervals, this estimated background is 0.2 to 2.2 per 1 million person-day 0–7 risk interval and 0.4 to 3.8 per 1 million person-day 8–21 risk interval



LONG-TERM SIDE EFFECTS

- Based on knowledge of these vaccines, the ingredients and experience with other vaccines, long-term side effects are not expected.
 - Vaccine ingredients cleared from body quickly.
 - COVID-19 virus not in the vaccine, just the spike protein.
 - For all other vaccines, serious adverse events occur within 42 days post-vaccination.
 - More than 585 million doses administered in U.S. to 5 and older.
- Long-term side effects of COVID-19 illness...

What about Natural Immunity?



NATURAL IMMUNITY

- Most (not all) people develop protective antibodies after natural infection.
 - The duration of this protection is not fully understood yet.
 - Immunity may be around six months.
 - The duration and strength of this protection may be variable from person to person and dependent on age and/or severity of infection.
 - Immunity may not be adequate for variants.
 - A correlate of protection for COVID-19 has not yet been determined, meaning antibody tests cannot determine immunity.

COVID VACCINE <5

- COVID-19 vaccine is not currently authorized or recommended for use in this age group.
- But that may be changing soon...



FDA could authorize COVID vaccine for children 5 and under, and Novavax vaccine, this June

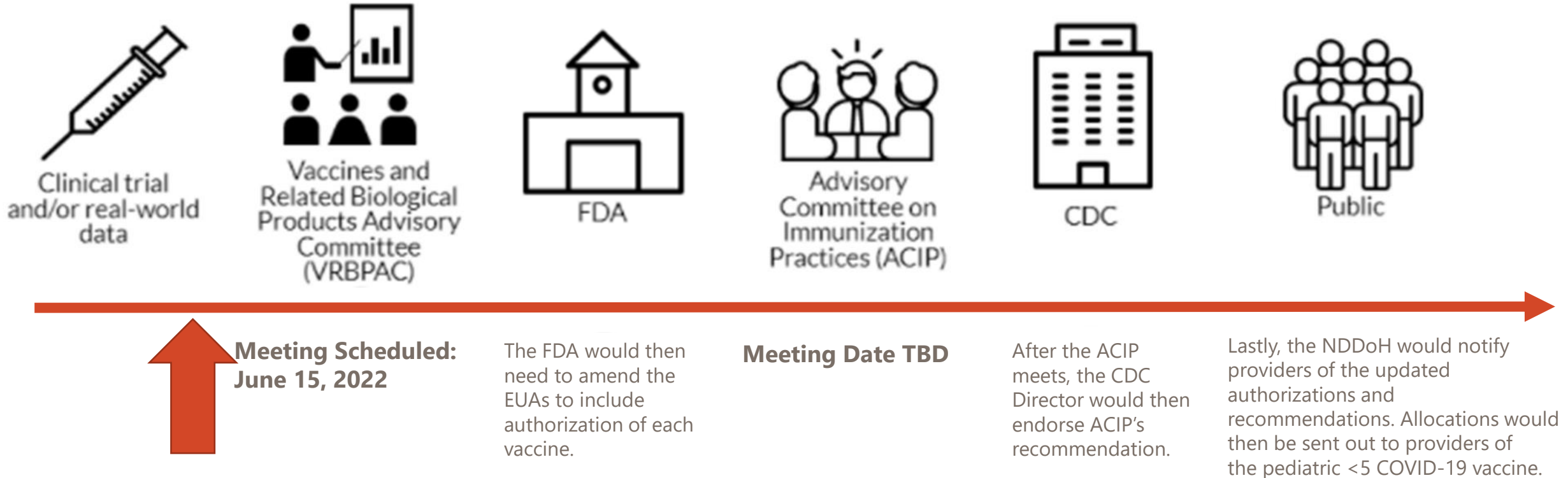
Meetings of the FDA's Vaccines and Related Biological Products Advisory Committee (VRBPAC) are now planned as many as four times in June to...



VACCINE AUTHORIZATION/ RECOMMENDATION PROCESS

Pediatric <5 COVID-19 Vaccines

(Please note: Moderna and Pfizer may have different timelines)



ESTIMATED: End of June 2022

PRELIMINARY CLINICAL TRIAL VACCINE EFFECTIVENESS DATA

Moderna

- 51% effective for children ages 6 months - 1 years and 37% effective for children ages 2 years - 5 years at preventing symptomatic COVID-19 infection after 2 doses.

Pfizer-BioNTech

- 80.3% effective for children ages 6 months - 4 years at preventing symptomatic COVID-19 infection after 3 doses.

The background features three overlapping circles in a horizontal row. The circles are a vibrant orange color. A solid white horizontal band cuts across the middle of the circles, creating a central area where the text is placed. The overall aesthetic is clean and modern.

NEXT STEPS

VACCINES FOR CHILDREN (VFC) PROGRAM

- Federally funded program that provides vaccines to children 0 through 18 years of age who are either Medicaid eligible, American Indian or Alaskan Native, uninsured or underinsured (a child whose health insurance benefit plan does not cover vaccines or a particular vaccine).
- The VFC program limits vaccine administration fees and does not allow participating sites to charge eligible patients for the vaccine.
- To find a VFC Provider near you please visit:
<https://www.health.nd.gov/immunize/public>

NEXT STEPS

Talk to your child's
healthcare provider
today about what
vaccines they are do for!





THANK YOU!

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