#### **National Center for Immunization and Respiratory Diseases**



EPIDEMIOLOGY

DISEASES 🤝 14TH EDITIO

PREVENTABLE

## Varicella (Chickenpox) Vaccines

**Pink Book Web-on-Demand Series** 

Sarah Reagan-Steiner, MD, MPH Medical Officer Immunization Services Division



- Describe the fundamental principles of the immune response.
- Describe immunization best practices.
- Describe an emerging immunization issue.
- For each vaccine-preventable disease, identify those for whom routine immunization is recommended.
- For each vaccine-preventable disease, describe characteristics of the vaccine used to prevent the disease.
- Locate current immunization resources to increase knowledge of team's role in program implementation for improved team performance.

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# Varicella Disease

#### **Varicella-Zoster Virus**

- Varicella-Zoster virus (VZV) is a herpesvirus (DNA).
- Primary infection results in varicella (chickenpox).
- Reactivation of latent infection results in herpes zoster (shingles).
- Short survival in environment

#### Varicella Pathogenesis

- Respiratory transmission of virus
  - Inhalation of aerosolized VZV from the skin lesions of patients with varicella or herpes zoster
  - Possibly through infected respiratory tract secretions that also may be aerosolized
- Replication at the site of entry
  - In nasopharynx and regional lymph nodes
- Primary viremia 4–6 days after infection
  - Disseminates virus to multiple organs and tissues (liver, spleen, sensory ganglia)
- Further replication leads to secondary viremia and viral infection of skin.

### Varicella Epidemiology

Reservoir	• Human
Transmission	<ul> <li>Person-to-person         <ul> <li>Inhalation of aerosols from vesicular fluid of skin lesions of patients with varicella or herpes zoster</li> <li>Direct contact with lesions</li> <li>Possibly by inhalation of aerosolized infected respiratory tract secretions</li> </ul> </li> </ul>
<b>Temporal Pattern</b>	<ul> <li>Peak in late winter and spring (U.S.) – pre-vaccine</li> </ul>
Communicability	<ul> <li>1–2 days before rash onset until lesions have formed crusts (4–7 days)</li> <li>May be longer in immunocompromised persons</li> </ul>

#### Varicella (Chickenpox) Clinical Features

- Incubation period 14–16 days (range 10-21 days)
  - May be prolonged in immunocompromised patients and those who received postexposure treatment with a varicella antibody-containing product
- Mild prodrome for 1–2 days
  - Primarily among adults
- In children, rash is often first symptom

### Varicella (Chickenpox) Rash

- Rash generally appears first on the head or trunk, then spreads to extremities; most concentrated on the trunk
  - Lesions are usually 1 to 4 millimeters in diameter, superficial, delicate, and contain clear fluid.
  - Vesicles may rupture or become purulent before they dry and crust.
- Successive crops over several days, with lesions present in several stages of development at the same time



#### **Varicella Complications**

- Varicella can lead to secondary bacterial infections.
  - Can be very severe or even fatal
  - Especially dangerous when group A streptococcus is involved
- Without antibiotic treatment, skin lesions can progress deep enough to involve underlying fascia.
  - Rare
  - Requires surgical debridement and extended courses of antibiotics

#### **Increased Risk for Varicella Complications**

- Infants younger than 1 year
  - Highest risk:
    - Newborn infants whose mothers develop varicella rash from 5 days before to 2 days after delivery
    - Premature infants exposed to varicella or herpes zoster
- Persons older than 15 years
- Immunocompromised persons
- Pregnant women

### Varicella (Chickenpox) in Adults

- Compared with children:
  - Rash may not be first symptom and instead occur after 1 to 2 days of fever and malaise.
  - More likely to have severe disease requiring hospitalization.
  - More frequently experience complications (e.g., primary varicella pneumonia, central nervous system involvement)



#### Varicella in Vaccinated People (Breakthrough Varicella)

- Infection with wild-type VZV more than 42 days after vaccination with either the 1<sup>st</sup> or the 2<sup>nd</sup> dose of varicella vaccine
  - Occurs less frequently among those who have received two doses of varicella vaccine compared with those who have received only one dose.
- Risk of breakthrough varicella 2.5 times higher if varicella vaccine administered less than 30 days following MMR
- No increased risk if varicella vaccine given simultaneously or more than 30 days after MMR

### **Clinical Features of Breakthrough Varicella**

- Usually mild with either no or low fever, and fewer than 50 skin lesions
- Duration of illness usually shorter compared to varicella in unvaccinated people
- Rash is predominantly maculopapular.
  - Still transmissible
- Clinical diagnosis is challenging.
- Laboratory confirmation is important.

#### Do You Know What Breakthrough Varicella (Chickenpox) Looks Like?

#### What is Why is breakthrough varicella hard to diagnose? breakthrough varicella? The rash caused by breakthrough varicella looks similar to other rashes. so it is often difficult to diagnose clinically. Breakthrough varicella is an infection with wild-type varicella zoster virus that occurs in a varicella vaccinated person more than **Breakthrough Varicella Insect Bites** 42 days after vaccination. Varicella in an Breakthrough Varicella Unvaccinated Perso 250–500 lesions < <50 lesions Mostly vesicular Few or no vesicles • Fever No or low fever Illness for 5–7 days Shorter duration Poison Ivy Ringworm of illness How is breakthrough varicella confirmed? The best method to confirm breakthrough varicella is laboratory PCR testing of skin lesion specimens-scabs, vesicular fluid or scrapings of maculopapular lesions. www.cdc.gov/chickenpox/lab-testing/ Centers for Disease **Control and Prevention** National Center for Immunization and Respiratory Diseases

#### **Impact of U.S. Varicella Vaccination Program**

- Since 1995, the U.S. Varicella vaccination program has
  - Reduced chickenpox cases 97%.
  - Prevented more than 91 million varicella cases, 238,000 hospitalizations, and almost 2,000 deaths.
  - Achieved more than \$23 billion in net societal savings.



#### Varicella Laboratory Diagnosis

Varicella Tests

#### Acute Disease Material from vesicles or PCR scabs 2. Scrapings of maculopapular lesions Immunity ß Serum

#### When to Collect?

**Rash present:** Vesicular swabs or scrapings if vesicles are present. If no vesicles, scrapings of maculopapular lesions obtained by abrading the lesion with a slide.

**Rash has resolved:** Scabs from crusted lesions, are also excellent samples for PCR detection of VZV DNA.

After acute illness (3 or more weeks after rash onset)

## Varicella Antiviral Therapy (1)

- AAP recommendation:
  - Oral acyclovir/valacyclovir for at increased risk for moderate-to-severe varicella
    - Healthy people older than 12 years of age
    - People with chronic cutaneous or pulmonary disorders
    - People on long-term salicylate therapy
    - People on short, intermittent, or aerosolized courses of corticosteroids
- Oral acyclovir or valacyclovir therapy is *not recommended* by AAP for use in otherwise healthy children with typical varicella without complications.

## Varicella Antiviral Therapy (2)

- Intravenous acyclovir recommended for:
  - Pregnant women with viral-mediated complications of varicella such as pneumonia
  - Immunocompromised patients
  - People with severe disease such as disseminated VZV, pneumonia, encephalitis, thrombocytopenia, and severe hepatitis

## Varicella Vaccines

### Vaccines for the Prevention of Varicella (Chickenpox)

Vaccine Product	Component(s)	FDA-approved Age Indication				
Varivax (VAR)	Varicella	12 months and older				
ProQuad (MMRV)	MMR, Varicella	12 months-12 years				

Live, attenuated vaccines

 Unless the caregiver expresses preference for MMRV, CDC recommends separate MMR vaccine and varicella vaccine for the 1<sup>st</sup> dose in children 12–47 months of age.

#### **VAR and MMRV Vaccine Contents**





#### **Vaccine Preparation**

- Both VAR and MMRV must be reconstituted.
- Use only the diluent supplied with the vaccine.
- Follow the package insert to reconstitute the vaccine.

Discard reconstituted vaccine if not used within 30 minutes!



#### **Vaccine Administration**

• Administered *subcutaneously* or by *intramuscular* injection





#### Varicella Vaccines Are Highly Effective

**Pre-licensure clinical trial (efficacy)**:



Effective at preventing all



**Post-licensure studies (effectiveness)**:

92% Effective at preventing all varicella



# Varicella Vaccination Schedule

### Varicella Vaccination Schedule in Children and Adolescents

#### Table 1 Recommended Child and Adolescent Immunization Schedule for Ages 18 Years or Younger, United States, 2024

These recommendations must be read with the notes that follow. For those who fall behind or start late, provide catch-up vaccination at the earliest opportunity as indicated by the green bars. To determine minimum intervals between doses, see the catch-up schedule (Table 2).

Vaccine and other immunizing agents	Birth	1 mo	2 mos	4 mos	6 mos	9 mos	12 mos	15 mos	18 mos	19–23 mos	2–3 yrs	4–6 yrs	7–10 yrs	11–12 yrs	13–15 yrs	16 yrs	17–18 yrs
Varicella (VAR)							<b>⊲</b> 1 <sup>st</sup> c	doseÞ				2 <sup>nd</sup> dose					



Range of recommended ages for catch-up vaccination

### Varicella Vaccination Schedule in Adults (1)

#### Table 1 Recommended Adult Immunization Schedule by Age Group, United States, 2024

Vaccine	19–26 years	27-49 years	50–64 years	≥65 years				
Varicella (VAR)	2 doses (if born in 1980	or later)	2 doses					
	Recommended vaccination for adult lack documentation of vaccination, of	ts who meet age requirement, or lack evidence of immunity	Recommended vaccination for adu additional risk factor or another ind	lts with an lication				

#### Adults born 1980 or later:

- If no evidence of immunity to varicella and no prior receipt of varicella-containing vaccine (VAR or MMRV for children): 2-doses separated by 4–8 weeks
- If received 1 dose of a varicella-containing vaccine (VAR or MMRV for children):
   1 dose at least 4 weeks after first dose

Adult Immunization Schedule by Age (Addendum updated June 27, 2024) | Vaccines & Immunizations | CDC

### Varicella Vaccination Schedule in Adults (2)

#### Table 2 Recommended Adult Immunization Schedule by Medical Condition or Other Indication, United States, 2024

Always use this table in conjunction with Table 1 and the Notes that follow. Medical conditions or indications are often not mutually exclusive. If multiple medical conditions or indications are present, refer to guidance in all relevant columns. See Notes for medical conditions or indications not listed.

		Immunocompromised (excluding HIV infection)	HIV infe percentag	ction CD4 e and count		Asplenia.		Kidney failure, End-stage	Chronic liver		
VACCINE	Pregnancy		(excluding HIV infection)	<15% or <200mm³	≥15% and ≥200mm³	Men who have sex with men	complement deficiency	Heart or lung disease	renal disease or on dialysis	disease; alcoholismª	Diabetes
MMR											
VAR				See Notes							
	C ra *	Contraindicated or no ecommended Vaccinate after preg f indicated	ot nancy,			F	Recommended who lack docu vaccination, <b>O</b> of immunity	d for all adults imentation of <b>R</b> lack eviden	ce		

#### Varicella Vaccination Schedule: Routine and Catch-up (1)

Minimum age, dose 1: 12 months Minimum age, dose 2: 15 months Minimum interval if younger than age 13 years: 3 months

Special grace period: 2 months Minimum interval if 13 years of age or older: 4 weeks

### Varicella Vaccination Schedule: Routine and Catch-up (2)

Minimum age, dose 1: 12 months Minimum age, dose 2: 15 months Minimum interval f younger than age 13 years: 3 months

Special grace period: 2 months Minimum interval if 13 years of age or older: 4 weeks

### Varicella Vaccination Schedule: Routine and Catch-up (3)

Minimum age, dose 1: 12 months Minimum age, dose 2: 15 months Minimum interval f younger than age 13 years: 3 months

Special grace period: 2 months Minimum interval if 13 years of age or older: 4 weeks

### Varicella Vaccination Schedule: Routine and Catch-up (4)

Minimum age, dose 1: 12 months Minimum age, dose 2: 15 months Minimum interval if younger than age 13 years: 3 months

Special grace period: 2 months Minimum interval if 13 years of age or older: 4 weeks

Chapter 22: Varicella | Pink Book | CDC and Prevention of Varicella: Recommendations of the Advisory Committee on Immunization Practices (ACIP) (cdc.gov)

### Varicella Vaccination Schedule: Routine and Catch-up (5)



\*This interval should **not** be used to schedule the 2<sup>nd</sup> dose of vaccine. It can be applied retrospectively, when assessing whether previous doses can be counted.

Prevention of Varicella: Recommendations of the Advisory Committee on Immunization Practices (ACIP) (cdc.gov)
## Varicella Vaccination Schedule: Routine and Catch-up (6)

Minimum age, dose 1: 12 months Minimum age, dose 2: 15 months Minimum interval f younger than age 13 years: 3 months

Special grace period: 2 months Minimum interval if 13 years of age or older: 4 weeks

## **Clinical Considerations**

## **MMRV Vaccine (1)**

- Two options for Dose 1 of MMR and VAR vaccines at age 12–47 months of age:
  - Separate MMR and VAR vaccines (preferred) or
  - MMRV vaccine
- Providers considering administering MMRV vaccine should discuss the benefits and risks of both vaccination options with parents or caregivers.
  - Compared to MMR and VAR administered separately, higher risk for febrile seizures when MMRV administered as Dose 1 to children 12-23 months of age
- Unless the caregiver expresses preference for MMRV, CDC recommends separate MMR and VAR vaccines for Dose 1 in children 12–47 months of age.

## **MMRV Vaccine (2)**

#### • Administer MMRV:

- For Dose 2 of MMR and VAR vaccines at age 15 months through 12 years
- For Dose 1 at age 48 months or older
- If the caregiver expresses a preference for Dose 1 at 12–47 months of age
- Considerations for use of MMRV should include
  - Provider assessment: injections needed, vaccine availability, likelihood of improved coverage, likelihood of patient return, storage, cost
  - Patient preference
  - Potential for adverse events

#### **Acceptable Evidence of Varicella Immunity (1)**



#### **Acceptable Evidence of Varicella Immunity (2)**



Written documentation of age-appropriate vaccination

#### **Acceptable Evidence of Varicella Immunity (3)**



Laboratory evidence of immunity, or laboratory confirmation of varicella disease

#### **Acceptable Evidence of Varicella Immunity (4)**







Birth in the U.S. before 1980

#### **Acceptable Evidence of Varicella Immunity (5)**







#### Except:

- Health care personnel
- Immunocompromised people
- Pregnant women

# Birth in the U.S. before 1980

#### **Acceptable Evidence of Varicella Immunity (6)**



Diagnosis or verification of history of varicella or herpes zoster by health care provider

#### **Acceptable Evidence of Varicella Immunity (7)**









Written documentation of age-appropriate vaccination

Lab evidence of immunity, or laboratory confirmation of varicella disease Birth in the U.S. before 1980 (with exceptions) Diagnosis or verification of history of varicella or herpes zoster by health care provider

## ACIP Immunization Recommendations: Adults

- Adults born 1980 or later without acceptable evidence of immunity:
  - Vaccinate unless contraindicated
  - 2 doses separated by at least 28 days



### ACIP Immunization Recommendations: Pregnant Women

- Do not vaccinate pregnant women.
- Counsel if pregnant within 4 weeks of vaccination
- Pregnant woman with no evidence of immunity:
  - 1 dose VAR before discharge *after* pregnancy complete
  - Finish series in 4-8 weeks



## ACIP Immunization Recommendations: Adults

- Adults born in the United States before 1980 presumed immune to varicella, *except*:
  - Pregnant women
  - Immunosuppressed people
  - Health care providers



### Varicella Vaccine and Immunocompromised Persons

- Live vaccine
  - Should not be administered to immunocompromised persons
  - Be aware of exceptions
- Single-antigen varicella vaccine (VAR) may be administered to persons with isolated humoral immunodeficiency.
- Consider varicella vaccination for:
  - HIV-infected children with CD4 count of 15% or higher
  - HIV-infected persons 8 years of age and older and adults with CD4 count of 200 or higher
- Household contacts of immunocompromised persons should be vaccinated.



An 18-month-old child received their first dose of VAR at 13 months of age. A second dose was administered at a different clinic at 15 months of age. Does this child need another dose of VAR?

A. Yes B. No



An 18-month-old child received their first dose of VAR at 13 months of age. A second dose was administered at a different clinic at 15 months of age. Does this child need another dose of VAR?



## Varicella Vaccination and Health Care Personnel

- Recommended for all HCP who lack evidence of immunity
  - 2 doses, 4 weeks apart
- Prevaccination serologic screening worth considering
- Postvaccination testing not recommended
- Documented receipt of 2 doses of varicella vaccine supersedes subsequent serologic results.





A nursing student had VAR titers done before she started school. Her titers came back negative. She has 2 documented doses of VAR after 1 year of age, separated by more than 4 weeks. How many doses of VAR should we administer?

- A. One
- B. Two
- C. None



A nursing student had VAR titers done before she started school. Her titers came back negative. She has 2 documented doses of VAR after 1 year of age, separated by more than 4 weeks. How many doses of VAR should we administer?



#### Varicella Postexposure Prophylaxis: Vaccination

- Varicella vaccine recommended as postexposure prophylaxis (PEP) for:
  - Ages 12 months or older
  - Without evidence of varicella immunity
  - Within 3 through 5 days after exposure
- 70%–100% effective when given within 3 days of exposure
  - Possibly up to 5 days

### Varicella PEP: Varicella-Zoster Immune Globulin (VariZIG)

#### • PEP with VariZIG recommended for:

- Immunocompromised persons without evidence of immunity to varicella
- Neonates whose mothers have signs or symptoms of varicella around time of delivery
- Hospitalized preterm infants born at 28 weeks' gestation or later whose mothers do not have evidence of immunity
- Hospitalized preterm infants born earlier than 28 weeks' gestation or who weigh 1,000 grams or less at birth, regardless of maternal history of varicella disease or vaccination
- Pregnant women without evidence of immunity to varicella
- VariZIG should be administered as soon as possible and within 10 days of exposure to VZV.



### **Varicella Vaccine Contraindications (1)**

- Severe allergic reaction (e.g., anaphylaxis) to a vaccine component (e.g., neomycin, gelatin) or following a prior dose
- Pregnancy, current or planned within 4 weeks
- Immunosuppression due to
  - Leukemia
  - Lymphoma
  - Generalized malignancy
  - Immune deficiency disease
  - Immunosuppressive therapy

### Varicella Vaccine Contraindications (2)

- MMRV should not be administered to HIV-infected persons of any age.
  - Separate MMR and VAR vaccines:
    - **Should be considered** for HIV-infected children with CD4 count of 15% or higher.
    - May be considered for HIV-infected persons ages 8 years of age and older with CD4 count of 200 or higher.
- Hematopoietic stem cell transplant (wait 24 months)
- Family history of congenital or hereditary immunodeficiency in first-degree relatives, unless immune competence clinically substantiated or laboratory verified

#### **Varicella Vaccine Precautions**

- Moderate or severe acute illness
- Receipt of antibody-containing blood products
  - Wait 3 to 11 months to vaccinate
- Receipt of specific antiviral drugs (acyclovir, famciclovir, or valacyclovir)
  - 24 hours before vaccination
  - 14 days after vaccination
- Simultaneous use of aspirin or aspirin-containing products
  - Especially in children
- Personal or family history of seizures of any etiology
  - Precaution to MMRV, not separate VAR and MMR vaccines

#### **Varicella Vaccine Adverse Reactions**

#### • Common side effects:

- Sore arm from the injection
- Redness or swelling at injection site
- Fever
- Rash at injection site
- More serious reactions very rare, can include:
  - Pneumonia
  - Aseptic meningitis and encephalitis
  - Febrile seizures
- Vaccinated person can develop a varicella-like rash

#### **Adverse Reactions: MMRV vs. MMR + VAR**

- Pre-licensure studies of MMRV in children 12–23 months of age
  - Fever 5–12 days after 1<sup>st</sup> vaccine dose more common with MMRV
  - MMRV (21.5%), MMR + VAR (14.9%)
- Post-licensure studies of MMRV in children 12–23 months of age
  - Compared to MMR + VAR, 1 additional febrile seizure per 2,300–2,600 children who received the 1<sup>st</sup> MMRV dose
    - Rate: 9 per 10,000 when vaccinated with MMRV
    - Rate: 4 per 10,000 when vaccinated with MMR + VAR at the same visit
- Post-licensure studies of MMRV in children 4–6 years of age
  - No increased risk of febrile seizures after 2<sup>nd</sup> vaccine dose seen among children whose 1<sup>st</sup> dose was MMRV



### Varicella Vaccines: Storage and Handling

- Store between -50°C and -15°C (-58°F and 5°F)
  - Must be kept at freezing temperatures
  - Keep VAR (varicella) and MMRV vaccine vials in their original closed boxes to protect the vaccine from light.
  - Do not tear off end flaps or cover.
- Keep diluent at room temperature.
  - Do not freeze diluent.
  - Can be refrigerated

#### Varivax (Varicella)

Store between -50°C and -15°C (-58°F and 5°F)

Ages: 12 months and older

**Presentation:** Single-dose vial lyophilized vaccine and single-dose vial or manufacturer-filled syringe diluent

#### **Protect From Light**

**Beyond Use Time:** Vial may be stored between 2°C and 8°C (36°F and 46°F) for up to 72 continuous hours prior to reconstitution. Discard vaccine not used within 72 hours Discard reconstituted vaccine if not used within 30 minutes



Updated 3/6/2024

ProQuad (MMRV)

Store between  $\,$  -50°C and -15°C (-58°F and 5°F)

Ages: 12 months through 12 years

**Presentation:** Single-dose vial lyophilized vaccine and single-dose vial or manufacturer-filled syringe diluent

#### Protect From Light

**Beyond Use Time:** Vial may be stored between 2° and 8°C (36° and 46°F) for up to 72 hours prior to reconstitution. Discard any vaccine not used within 72 hours. Discard reconstituted vaccine if not used within 30 minutes



Updated 3/6/2024

## Varicella Resources

#### Vaccine Information Statements



Recombinant shineles vaccine was approved by FDA in 2017 for the prevention of shingles. In clinical trials, it was more than 90% effective in preventing shingles. It can also reduce the likelihood of PHN. Two doses, 2 to 6 months apart, are recommended fo This vaccine is also recommended for people who ha

#### VACCINE INFORMATION STATEMENT Many Vaccine information Statements are Varicella (Chickenpox) Vaccine: available in Spanish and other languages. See www.immunize.org/Vis Hojas de información sobre vacunas están disponibles en español y en muchos otros idiomas. Visite www.immunize.con/vis

age or older.

3 this vaccine

vaccine component

system problems

Has tuberculosis

vaccine

and at least 28 days after the first dose for those 13 years of

There are no known risks to getting chickenpox vaccine at

There is a combination vaccine called MMRV that

contains both chickenpox and MMR vaccines.

MMRV is an option for some children 12 months through 12 years of age. There is a separate

Vaccine Information Statement for MMRV. Your

health care provider can give you more information

Tell your vaccine provider if the person getting the vaccine

Has any severe, life-threatening allergies. A person who

has ever had a life-threatening allergic reaction after a dose

of chickenpox vaccine, or has a severe allergy to any part

of this vaccine, may be advised not to be vaccinated. Ask

your health care provider if you want information about

· Is pregnant, or thinks she might be pregnant. Pregnant

romen should wait to get chickenpox vaccine until after

they are no longer pregnant. Women should avoid getting pregnant for at least 1 month after getting chickenpox

· Has a weakened immune system due to disease (such

Is taking salicylates (such as aspirin). People should

avoid using salicylates for 6 weeks after getting varicella

· Has recently had a blood transfusion or received other

blood products. You might be advised to postpone

chickenpox vaccination for 3 months or more

as cancer or HIV/AIDS) or medical treatments (such as

radiation, immunotherapy, steroids, or chemotherapy).

· Has a parent, brother, or sister with a history of immune

Some people should not get

1 Why get vaccinated? Varicella (also called chickenpox) is a very contagious viral disease. It is caused by the varicella zoster virus. Chickenpoy the same time as other vaccines. is usually mild, but it can be serious in infants under 12 months of age, adolescents, adults, pregnant women, and people with weakened immune systems Chickenpox causes an itchy rash that usually lasts about a More serious complications can include: infection of the lungs (pneumonia) swelling of the brain and/or spinal cord coverings. blood stream, bone, or joint infections Some people get so sick that they need to be hospitalized. It doesn't happen often, but people can die from chickenpox. Before varicella vaccine, almost everyone in the United States got chickenpox, an average of 4 million people each Children who get chickenpox usually miss at least 5 or

Some people who get chickenpox get a painful rash called shingles (also known as herpes zoster) years later. Chickennoy can spread easily from an infected person to anyone who has not had chickennox and has not notten

#### 2 Chickenpox vaccine

Children 12 months through 12 wars of are should get · First dose: 12 through 15 months of age Second dose: 4 through 6 years of age

when they were younger, and have never had chickenpox, should get 2 doses at least 28 days apart. A person who previously received only one dose of chickennox vaccine should receive a second dose to complete the series. The second dose should be given at least 8 months after the first dose for those younger than 13 years.

VISs 

- VAR (Varicella)
- MMRV (ProQuad)
- Give patient or parent ulletthe appropriate VIS before administration of the product.

Vaccine Information Statements (VISs) | CDC

Monsles

Mumps

that covers the whole body.

much less common in the United States

### **CDC Clinical Resources**

#### www.cdc.gov/vaccines/

- Advisory Committee on Immunization Practices
  (ACIP) Vaccine Recommendations and Guidelines
- Recommended Immunization Schedules
- Vaccine Storage and Handling Toolkit
- Vaccine Information Statements
- www.cdc.gov/chickenpox/hcp/clinicaloverview/index.html

Pink Book Training Materials





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#### **Email Us Your Immunization Questions**



# nipinfo@cdc.gov

#### **Thank You From Atlanta!**

For more information, contact CDC 1-800-CDC-INFO (232-4636) TTY: 1-888-232-6348 www.cdc.gov

The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.



