



**CITY OF PHILADELPHIA
DEPARTMENT OF PUBLIC HEALTH
DIVISION OF DISEASE CONTROL
IMMUNIZATION PROGRAM**

**GUIDELINES FOR VARICELLA OUTBREAK PREVENTION AND CONTROL IN
SCHOOL OR CHILDCARE SETTINGS: 2007 – 2008 SCHOOL YEAR**

The American Academy of Pediatrics strongly encourages pediatricians to support public health officials in the development and implementation of varicella (chickenpox) immunization requirements for childcare and school entry. In Philadelphia, Board of Health regulations require that all children entering the school system for the first time in kindergarten or first grade must have two doses of properly spaced varicella vaccine, or have documentation of immunity to varicella via either laboratory testing confirming immunity or by written statement from the child's health care provider documenting the child's past chickenpox disease. The Philadelphia Board of Health law governing Child Care Centers mandates that all children enrolled in childcare are age-appropriately vaccinated for varicella, i.e., have one dose from 12 months of age to Kindergarten or first grade entry, when the second dose is required by Philadelphia Board of Health regulation.

NOTIFICATION

PDPH should always be notified of any suspected or confirmed case of varicella or zoster as with any other reportable disease (*24-hour Reporting Hotline: 215-685-6748*).

THE DISEASE

The varicella zoster virus (VZV) causes chickenpox (varicella) and may reactivate in later life as herpes zoster, which is also known as shingles. Varicella can be transmitted by respiratory droplets (i.e. coughing and sneezing) or direct contact with lesions. Typical varicella is characterized by a generalized vesicular rash consisting of >250 lesions, fever, and malaise. Breakthrough varicella, which is a varicella rash that may develop in previously vaccinated individuals, is usually milder.

CHILDREN WITH VARICELLA OR ZOSTER

Children with chickenpox must be excluded from school or childcare until the rash has crusted, which may take several days in mild cases to several weeks in severe cases or in immunocompromised children. Some previously vaccinated children may develop mild "breakthrough" varicella following exposure to a case. These children must still be excluded until all lesions are crusted. Immunocompromised and other children with a prolonged course should be excluded for the duration of the vesicular eruption. Because transmission from herpes zoster (shingles) may occur, the precautions should be the same as for varicella. Persons with non-disseminated zoster may return to school or childcare after completion of 24 hours of antiviral therapy.

EVIDENCE OF IMMUNITY TO VARICELLA

In June 2006, the U.S. Advisory Committee on Immunization Practices (ACIP) revised the criteria for evidence of varicella zoster virus immunity (TABLE 1). Only doses of varicella vaccine for which written documentation of the date of administration is available should be considered valid. Persons who lack documentation of adequate vaccination or immunity to varicella should be vaccinated.

TABLE 1. EVIDENCE OF IMMUNITY TO VARICELLA INCLUDES ANY OF THE FOLLOWING

- Documentation of age-appropriate vaccination:
 - Preschool-aged children \geq 12 months of age: one dose
 - School-aged children entering in grades K or 1st: two doses
 - School-aged children in grades 2nd – 12th: one dose
- Laboratory evidence of immunity or laboratory confirmation of prior infection
- Birth in the US before 1980
 - **EXCEPT HEALTHCARE WORKERS, IMMUNOCOMPROMISED PERSONS, AND PREGNANT WOMEN**
- Health-care provider diagnosis of varicella or health-care provider verification of history of varicella disease
- Health-care provider diagnosis of herpes zoster or health-care provider verification of a history of herpes zoster
- Written statement of a history of chickenpox disease from a parent or legal guardian for children in grades 2nd – 12th:

OUTBREAK MANAGEMENT

Definitions:

Outbreak: Five or more cases of varicella in one facility in a three-week period.

Exposure: Four hours in the vicinity (i.e. classroom) of an infected person in a school setting.

Notification

Varicella disease should be addressed similarly to other highly contagious vaccine preventable diseases (i.e. *measles, rubella, mumps, pertussis, H. influenzae*). Hence, the Philadelphia Department of Health (PDPH) should be notified of any suspected or confirmed cases of varicella or zoster. PDPH will assist the facility (i.e. school, childcare center) with implementing this Outbreak Prevention and Control Policy. PDPH will provide template letters to assist schools in notifying parents of a possible exposure. These letters should be printed on the involved school's letterhead, signed by the principal, school nurse, or an appropriate administrative staff person. To exclude a susceptible child from school because of exposure to a case of varicella, use the Exclusion Letter (Attachment 1). If a single case of varicella or zoster is identified, the "exposure letter" (Attachment 2) should be distributed to the classmates of the case(s). When five or more varicella cases occur in a 3-week period, the "outbreak letter" (Attachment 3) should be distributed to the entire school body.

Post-exposure Vaccination:

In schools and childcare facilities, vaccination of susceptible individuals during an *outbreak* of varicella has prevented disease even when more than 5 days have elapsed since *exposure*. Vaccine should be recommended to susceptible individuals as soon as possible, even if the *outbreak* is identified late. Children in kindergarten and first grade who previously received one dose of varicella vaccine will be required to get a second dose to be considered immunized.

During varicella outbreaks, school nurses should document receipt of second doses of varicella vaccine by students as part of outbreak control efforts. After the resolution of the varicella outbreak, PDPH will contact the school nurse to determine the number of students who received a second dose of varicella vaccine.

Exclusion (sample letter in Attachment 1):

When there are one or more cases of varicella/shingles in a school or daycare setting, the following persons should be excluded immediately:

- Immunocompromised persons (*Consult PDPH*)
Immunocompromised persons should only return as per written directions of their physician.

- Pregnant (*lacking a history of varicella immunity or disease*)

When there are one or more cases of varicella/shingles in a school or daycare setting, the following *exposed* persons should be excluded from day 8 following initial exposure until 21 days after the onset of the last case:

- Children unimmunized due to medical or philosophical exemptions
- Children under a childcare grace period as per Board of Health regulations
- Infants not yet vaccinated
- Noncompliant students in 2nd – 12th grade (*i.e. unvaccinated and lacking a history of varicella disease/immunity*)
- Non-compliant children in K - 1st grade (*i.e. inadequately vaccinated* and lacking documentation of a history of varicella disease/immunity*)

2007 EXCLUSION GUIDE

GRADE LEVEL	EXCLUDE IMMEDIATELY	EXCLUDE BETWEEN DAYS 8 – 21
K – 1st Grade	<p>When there is at least one case of chickenpox/shingles, exclude the following individuals immediately until healthcare provider provides written guidance or until vaccinated:</p> <ul style="list-style-type: none"> ○ Immunocompromised (<i>Consult PDPH</i>) ○ Pregnant (<i>lacking a history of varicella immunity or disease</i>) 	<p>When there is at least one case of chickenpox/shingles, exclude the following <u>exposed</u> individuals between day 8 and day 21 after exposure or until vaccinated:</p> <ul style="list-style-type: none"> ○ Children with medical or philosophical exemptions ○ Inadequately vaccinated* and no healthcare provider diagnosis of varicella disease or lab-confirmed immunity <p style="text-align: center;">*non-compliant with 2 dose requirement</p>
2nd – 12th GRADES	<p>When there is at least one case of chickenpox/shingles, exclude the following individuals immediately until healthcare provider provides written guidance or until vaccinated:</p> <ul style="list-style-type: none"> ○ Immunocompromised (<i>consult PDPH</i>) ○ Pregnant (<i>lacking a history of varicella immunity or disease</i>) 	<p>When there is at least one case of chickenpox/shingles, exclude the following <u>exposed</u> individuals between day 8 and day 21 after exposure or until vaccinated:</p> <ul style="list-style-type: none"> ○ Children with medical or philosophical exemptions ○ Unvaccinated and no history of varicella disease or lab-confirmed immunity

*When adequate vaccine supply is available (expected by the end of the 1st semester of 2007-2008 school year), school entry regulations will be fully enforced and children who are required to have two doses of varicella vaccine according to the school entry level and grade specific varicella immunity regulations should be excluded.

Outbreaks:

During an *outbreak*, all individuals who lack evidence of varicella immunity and are either unvaccinated or partially vaccinated (for Kindergarten and first grade) should be excluded from school or daycare. An excluded child in kindergarten or first grade may return to school immediately upon receiving the second dose of varicella vaccine. Children in second through twelfth grade, who lack documentation of one dose of vaccine and lack evidence of immunity to varicella or history of disease, may return to school upon receiving one dose of vaccine. However, if the outbreak persists, PDPH may recommend that durations of exclusion be extended (i.e. three weeks after onset of last case). PDPH recommends that staff/faculty who lack a history of varicella disease and prior varicella immunization be vaccinated (two doses given one month apart) or have their varicella titer checked by their doctor.

Attachment #1 - Sample Exclusion Letter

Date

Dear Parent/Guardian:

One or more children at our school have recently been diagnosed with chickenpox. Children who have never had chickenpox, or children who have received only a single dose of varicella (chickenpox) vaccine, may develop chickenpox if they are exposed to a person with this infection.

To control the spread of chickenpox at our school, children who do not meet school requirements for proof of immunity (“protection”) from chickenpox may not attend school. Our records indicate that you have not provided adequate documentation of your child’s varicella vaccinations or history of previous varicella infection. Therefore, **your child may not return to school until this documentation is provided.** The form at the bottom of this letter must be completed by your child’s healthcare provider, and submitted to me, before your child may return to school.

Please help stop the spread of chickenpox in our school by making sure that your child is adequately vaccinated for this disease. If you have any questions about this letter, please contact me at ***school nurse’s telephone number.***

Sincerely,

***School Nurse
School Name***

COMPLETE AND RETURN THIS FORM TO THE SCHOOL NURSE IF YOUR CHILD HAS BEEN EXCLUDED

Child’s Name: _____ **Date of Birth:** ____/____/____
Month Day Year

Varicella vaccination date: #1: ____/____/____ #2: ____/____/____
Month Day Year Month Day Year

Prior Varicella diagnosis (circle one): *Yes No* **Age child had varicella:** ____*Years/Months* (circle one)

Physician/Nurse Signature: _____ **Address/Phone:** _____

Attachment #2 - Sample Exposure Letter

Date

Dear Parent/Guardian:

A child at our school has recently been diagnosed with chickenpox. Children who have never had chickenpox, or children who have received only a single dose of varicella (chickenpox) vaccine, may develop chickenpox if they are exposed to a person with this infection.

If your child has not already received **two** doses of varicella (chickenpox) vaccine, please contact your child's regular doctor to ask about receiving a second dose of this vaccine. A second dose of this vaccine will help prevent your child from developing chickenpox if he/she was exposed to the infected child. Please also note that it is now standard medical practice to give two doses of varicella vaccine, given three months apart, to all children 1 to 18 years of age who have not previously had the disease.

If your child is seriously immunocompromised (e.g., HIV, cancer, leukemia, organ transplant, etc.), please contact his/her physician immediately. For the child's own protection, immunocompromised children must be excluded from attending school until the school nurse receives written instructions from the physician.

If your child does develop chickenpox, he/she should be kept from attending school until the rash has scabbed over, even if your child had previously received the chickenpox vaccine.

Please help stop the spread of chickenpox in our school by making sure that your child is adequately vaccinated for this disease. If you have any questions about this letter, please contact us at ***school's telephone number***.

Sincerely,

Administrator's Name

Administrator's Title

School Name

Attachment #3 - Sample Outbreak Letter

Date

Dear Parent/Guardian:

Currently, there is an outbreak of chickenpox at our school. Children who have never had chickenpox disease, or children who have received only a single dose of varicella (chickenpox) vaccine, may develop chickenpox if they are exposed to a person with this infection.

If your child has not already received **two** doses of varicella (chickenpox) vaccine, please contact your child's regular doctor to ask about receiving a second dose of this vaccine. A second dose of this vaccine will help prevent your child from developing chickenpox if he/she was exposed to the infected person. Please also note that it is now standard medical practice to give two doses of varicella vaccine, given three months apart, to all children 1 to 18 years of age who have not previously had the disease.

If your child is seriously immunocompromised (e.g., HIV, cancer, leukemia, organ transplant, etc.), please contact his/her physician immediately. For the child's own protection, immunocompromised children must be excluded from attending school until the school nurse receives written instructions from the physician.

If your child does develop chickenpox, he/she should be kept from attending school until the rash has scabbed over, even if your child had previously received the chickenpox vaccine.

Please help stop the spread of chickenpox in our school by making sure that your child is adequately vaccinated for this disease. If you have any questions about this letter, please contact us at ***school's telephone number***.

Sincerely,

Administrator's Name
Administrator's Title
School Name