Varicella and Shingles

POLICY:

To provide guidance on prevention and control of illness caused by varicella-zoster virus (VZV).

DEFINITIONS

Two syndromes occur from infection with herpes varicella-zoster virus (VZV): 1. varicella (chicken pox), and 2. herpes zoster (shingles).

Varicella (Chicken pox) is a highly contagious disease. It is a primary infection with VZV and usually occurs in childhood.

Ninety five percent of adults are immune to VZV. Twenty five percent of adults with no history of Varicella are susceptible. The acute illness in children is usually a self-limited disease that lasts 4-5 days and is characterized by fever, malaise and a generalized vesicular rash typically consisting of 250-500 lesions. Adolescents, adults, and immunocompromised persons usually have more severe disease and are at higher risk for complications. The incubation period is about 14-16 (range 10-21) days with 1-6 days prodromal symptoms of fever, headache, sore throat. Eruption of rapid evolving skin lesions (2-4 mm red papules, vesicles, umbilicated vesicles, cloudy vesicles, pustules, crusted lesions) with secondary infection or excoriation extends the process into the dermis, producing a crater-like scar. Transmission occurs via inhalation of virus-containing droplets from the nasopharynx of an infected individual. Skin vesicles contain virus but are not the primary source. Scabs are not infectious.

In most cases the infectious period is from 2 days before the rash appears to 5 days after the first vesicles appear. However, a person with chickenpox can spread the disease until all their chickenpox blisters have formed scabs.

The virus becomes latent in cells within the dorsal root ganglia of a sensory nerve and may be reactivated years later in life to produce painful, blistering skin eruptions called Shingles.

Zoster (Shingles) is a cutaneous viral infection that usually presents with painful vesicles traveling in a single dermatome or a small number of contiguous dermatomes. These lesions can be erosive or ulcerative. Pre-eruptive pain, itching, or burning, generally localized to the dermatome can occur for 4-5 days prior to the eruption of the vesicles. The lesions are similar to chicken pox lesions. Duration varies from 2 to 5 weeks depending on state of immunocompetency. Very close contacts who are not immune to varicella may catch chicken pox from a person with active shingles lesions. Immunocompromised individuals with disseminated shingles may be contagious by the airborne route as well as by contact.

Immunocompromised: Patients who should be considered immunocompromised for the purpose of this policy include those who are HIV positive and have a CD4+ count of 200 or less or who have a history of an opportunistic infection.

Other immunocompromised patients include patients on immunocompromising drugs such as cancer chemotherapy or the equivalent of 20 mg/day of prednisone, those with lymphoma, leukemia or other malignancy, and those with other immunocompromising conditions.

PROCEDURES

I. METHODS OF CONTROL

A. Each offender will be evaluated for immunity to varicella at the time of entry into TDCJ or at the annual DOI review if it has not been previously documented. If the offender does not meet any of the criteria for immunity listed below, they should be considered susceptible, and "Possibly susceptible to varicella" should be entered on the Master Problem. Evidence of immunity includes:
   1. Laboratory evidence of immunity.
   2. Born in the U.S. before 1980.
   3. A self-reported history of chicken pox or shingles diagnosed by a physician.
   4. Documented history of receiving 2 doses of varicella vaccine at least 4 weeks apart.

B. Offenders who are immune to varicella must have the HSM-18 updated with alert code 5290 for immunity to varicella.

C. Offenders who are HIV positive with a CD4 count > 200 who are not immune to **varicella will receive 2 doses of varicella vaccine 3 months apart if there are no** contraindications.

D. If an offender is suspected or diagnosed with chicken pox or is immunocompromised and has shingles, he or she should be placed in airborne and contact isolation until 5 days after the appearance of vesicles or until all vesicles have crusted, whichever is later.

E. If an offender has non-disseminated shingles he or she should be single-celled or housed with an offender who is immune to varicella until all lesions are crusted.

F. Close contacts of a case of chicken pox or shingles are defined as follows.
   1. Chicken pox
      a. Offenders living in the same housing area – dormitory or cellblock

b. Offenders attending the same work assignment or classroom for more than 1 hour within 2 days prior to rash onset until case is put in isolation
c. Close friends or sexual contacts who do not live in the same housing area.

2. Disseminated Shingles
   a. Offenders living in the same housing area – dormitory or cellblock
   b. Offenders attending the same work assignment or classroom for more than 1 hour within 2 days prior to rash onset until case is put in isolation
   c. Close friends or sexual contacts who do not live in the same housing area

3. Non-disseminated Shingles
   a. Offenders living in the same cell. Dormitory mates or offenders housed in a different cell in the same cellblock are not considered close contacts
   b. Close friends or sexual contacts

G. Those who should not receive the Varicella vaccine:
1. Females who are pregnant
2. Individuals with any febrile illness or active infection, including untreated tuberculosis
3. Any immunocompromised state (e.g., leukemia, lymphoma, other malignant neoplasms affecting the bone marrow or lymphatic system, or immunosuppressive therapy)
4. Individuals with history of severe allergic reaction to any component of the vaccine (including neomycin and gelatin) or to a previous dose of varicella vaccine
5. Individuals that have received whole blood or immune globulin within the preceding 3-11 months
6. Those with HIV with an absolute CD4 count less than 200 cells/mm^3

H. Susceptible close contacts of an offender with varicella should be offered prophylactic therapy as follows:
1. Those with no contraindications to varicella vaccine
   a. Varicella vaccine should be administered within 5 days (preferable within 72 hours) of the rash onset of the index case.
   b. If post-exposure varicella vaccine is started, a second dose should be given 4-8 weeks after the first unless the patient develops chicken pox.
   c. Contraindications to varicella vaccine include pregnancy, HIV infection, chronic steroids equivalent to 20 mg/day of prednisone, or greater, advanced immune disorders, receipt of whole blood or immune globulin within the preceding 3-11 months, ongoing moderate to severe illness, or history of severe allergic reaction.
2. Close contacts with contraindications to varicella vaccine
   a. Varicella-Zoster Immune Globulin (VariZig)), if available, should be administered within 10 days after exposure to varicella zoster virus. It should be administered as soon as possible after exposure and ideally within 96 hours
   b. Contraindications to Varizig include history of anaphylactic or severe systemic reactions to human globulins, or IgA-deficient patients with antibodies against IgA

and a history of hypersensitivity.

3. Varicella/Shingles Reporting Form to document close contacts of any offender with varicella or shingles who needs immunizations. Attachment A.

4. Varicella Vaccine and Shingles -Obtaining Varicella Biologicals for information regarding varicella vaccine immunoglobulin. Attachment B.

I. If an offender receives varicella vaccine or develops clinical chicken pox, the Master Problem List and HSM-18 should be updated to reflect immunity to varicella.

II. REPORTING

A. All cases of Chicken Pox and Shingles (proven or suspected) must be reported to the Office of Public Health within 24 hours of diagnosis.

References: *Recommended Adult Immunization Schedule – United States, 2017. CDC Morbidity and Mortality Weekly Report. February 6, 2017.*

ATTACHMENT B
B-14.14 VARICELLA AND SHINGLES
Obtaining Varicella Biologicals

Varicella Vaccine (Varivax®)

Varicella vaccine will be stocked by the pharmacy in very limited quantities. Call the Office of Public Health at 936-437-3573 for authorization for release of the vaccine for post exposure prophylaxis.

Varivax® is a **live**, attenuated varicella-zoster vaccine indicated for the prevention of varicella. It is a lyophilized vaccine and must be reconstituted before use. It must be kept frozen. It is administered subcutaneously as a 0.5ml dose. Two doses should be given at a minimum of 4 weeks apart.

The most common adverse effects are injection site pain and fever. A generalized varicella-like rash and injection site rash may occur.

Contraindications:

- History of severe allergic reaction to any component of the vaccine (including neomycin and gelatin) or to a previous dose of varicella vaccine
- Immunodeficiency states
- Any febrile illness or active infection, including untreated tuberculosis
- Pregnancy
- Immunoglobulin should not be given concomitantly with VARIVAX. Vaccination should be deferred for at least 5 months following blood or plasma transfusions, or administration of immune globulin

Varicella Zoster Immune Globulin (VariZig®)

Call the Office of Public Health at 936-437-3573 for authorization for release of the VariZig for post exposure prophylaxis. The Pharmacy does not stock a supply and arrangements to order VariZig will need to be made with the Pharmacy.

VariZig is a purified human immune globulin made from plasma containing high levels of anti-varicella antibodies. It is lyophilized and must be reconstituted before use. It must be refrigerated. It is administered IM at a maximum dose of 625 international units (IU) for all patients weighing more than 40 Kg.

Weight of Patient		VariZig Dose		Volume to Administer (mL)
Kilograms	Pounds	IU	Number of Vials	
10.1 – 20	22.1 – 44	250	2	2.4
20.1 – 30	44.1 – 66	375	3	3.6
30.1 – 40	66.1 – 88	500	4	4.8
> 40.1	> 88.1	625	5	6

VariZig should be administered in divided doses in 2 or more injection sites. Do not exceed 3ml per injection site. It should be administered in the deltoid muscle or anterolateral aspects of the upper thigh. The most common adverse effects are injection site pain and headache. Serious adverse effects include thrombosis and severe hypersensitivity reactions.

VariZig contraindications:

- History of anaphylactic or severe systemic reactions to human globulins
- IgA-deficient patients with antibodies against IgA and a history of hypersensitivity