INFORMATION PAPER

Military Vaccine Agency
1 September 2011

SUBJECT: Herpes Zoster (Shingles) Disease and Vaccine

1. Purpose. To describe Herpes Zoster (Shingles) disease and vaccines to prevent it.

2. Facts.

a. Microbiology. The varicella zoster virus (VZV), which, during first infection produces chickenpox (varicella), may also produce a recurrent infection known as herpes zoster (shingles). VZV is a member of the herpes virus group and like other herpes viruses can persist in the body after primary infection. After initial infection, the virus remains hidden (latent) in the nerve endings of the body until it reactivates, producing shingles. The immunologic process that controls the latency of VZV is not well understood but aging, immunosuppression, intrauterine exposure or varicella infection at less than 18 months of age may increase the risk of recurrent disease.

b. Disease. Symptoms of a shingles infection often start with numbness, itching or severe pain followed by clusters of blister-like skin sores along the distribution of nerve roots on one side of the body. The blisters form over 3-5 days and generally last 2-4 weeks. Shingles rashes often appear on the trunk but they may also involve the fifth cranial nerve resulting in blisters on the head and face. Most individuals who develop shingles will recover and will not develop recurrent infections. Some individuals can develop persistent pain in the area of the blisters that can remain for weeks, months or years after the rash heals; this pain is known as post-herpetic neuralgia.

c. Epidemiology. Age is one of the strongest epidemiological predictors for the occurrence of shingles primarily due to declining VZV immunity. Shingles is more common after the age of 50 and the risk increases with advancing age. The disease is rare in young healthy adults. Current numbers indicate that VZV infects approximately 98% of the adult population and the estimated lifetime risk of developing shingles is at least 32%. Primary varicella (chickenpox) occurs throughout the year but is more commonly seen in the winter and early spring; herpes zoster, in contrast, occurs throughout the year.

d. Vaccine. Merck & Company's vaccine, ZOSTAVAX®, is a lyophilized preparation of live, attenuated varicella-zoster virus and approved for use in persons 50 years of age an older. The vaccine contains the same Oka/Merck Varicella zoster virus used in the varicella and MMRV vaccine but at a much higher titer.

e. Cautions. ZOSTAVAX® is contraindicated in persons with a history of anaphylactic reaction to gelatin, neomycin, or any other component of the vaccine; are immune compromised, on immune suppressive therapy, have active untreated tuberculosis or who are pregnant. Current treatment with an antiviral medication

against herpes virus may interfere with the replication of the vaccine. Persons taking these medications should discontinue use for at least 24 hrs before administration of vaccine and 14 days after receipt. ZOSTAVAX® and PNEUMOVAX® 23 should not be given concurrently because of a potential reduction in immunogenicity of ZOSTAVAX®.

f. Immunization. ZOSTAVAX® is administered as a single 0.65-mL subcutaneous dose in the deltoid. The Center for Disease Control and Prevention's (CDC) Advisory Committee on Immunization Practice (ACIP) recommends a single dose for all adults 60 years of age and older whether or not they report a prior episode of herpes zoster. To maintain potency, the vaccine must be frozen and protected from light at all times until it is reconstituted for injection. Do not store vaccine using dry ice. Store the diluent separately at room temperature or in the refrigerator. ZOSTAVAX® should be administered immediately after reconstitution and discarded if not used within 30 minutes.

g. Adverse Events. The most common side effects reported include redness, pain, swelling at the injection site, and headache. More serious adverse events in subjects vaccinated with ZOSTAVAX® occurred at rates similar to placebo (1.4%).

h. DoD Policy. None.

i. Special Considerations. ZOSTAVAX® is not a treatment for shingles or postherpetic neuralgia. Transmission of vaccine virus may occur rarely between vaccinees that develop a varicella-like rash and susceptible individuals. Those exposed in this manner could develop chickenpox but not shingles.

3. References.

a. Centers for Disease Control and Prevention. Herpes Zoster – Recommendations of the Advisory Committee on Immunization Practices (ACIP). MMWR 2008;57(No.RR-5) www.vaccines.mil/default.aspx?cnt=resource/acipDisease&dID=59

b. Centers for Disease Control and Prevention. Epidemiology and Prevention of Vaccine-Preventable Diseases. Atkinson W, Wolfe S, Hambrosky J, McIntyre L, eds.11th ed. Washington DC: Public Health Foundation, 2009, Pgs. 283-304.

c. Multiple resources (e.g., product insert, Vaccine Information Statements) assembled by the Military Vaccine Agency : www.vaccines.mil/shingles.

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