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Prevention is Our Business

January is National Cervical Cancer Awareness Month

This month, the Yakima Health District's Breast and Cervical Health Program (BCHP) is joining the Washington State Department of Health in reminding women (*and their health care providers*) that regularly scheduled cervical cytologic exams can save lives.

In Washington, 222 women were diagnosed with invasive cervical cancer (ICC) in 2000 and 61 women died from ICC that same year. Data from the past decade show that ICC is reported in 7-10 women per year in Yakima County, with a median of 3 deaths per year (1992-1999, Washington State Cancer Registry). Incidence has increased slightly during that period (from 5.8 to 8.1/100,000 women annually), owing probably to better detection through screening. Mortality has remained stable. The cervix is the 14th leading site of cancer incidence (1.5%) and 15th leading source of cancer deaths (1.2%) in women in Washington State.

The breast remains the leading site for cancer diagnosis in women (36.5% of malignancies) and the second leading source of cancer deaths (14.1%). In Yakima County, breast cancer continues to be diagnosed in approximately 140 women per year over the past decade, with 25-30 breast cancer deaths occurring per year. While incidence has remained stable over the past decade, mortality has decreased from 21 to 17 per 100,000 women annually, presumably due to better outcomes resulting from early detection. Other common sites of malignancy in decreasing order of frequency are lung, colon, melanoma, endometrium, and ovary.

BCHP offers free or low-cost screening and diagnostic services to qualified women. These include women at 200% of poverty level, ages 40-64 and uninsured or underinsured. More information is available by calling the Health District's BCHP at (509) 249-6519, on the YHD web site http://www.co.yakima.wa.us/health/cfh_bchp.html or on the Washington State Department of Health's Breast and Cervical Health Program website (http://www.doh.wa.gov/wbchp).

Additional cancer statistics can be fund on the Washington State Cancer Registry's website (http://www3.doh.wa.gov/wscr/default.htm).

Yakima Health District BULLETIN

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Public Health Websites

Yakima Health District
http://www.co.yakima.wa.us/health/default.html

Centers for Disease Control
www.cdc.gov

Wa State Dept of Health
http://www.doh.wa.gov/

Smallpox

Smallpox/CDC
http://www.bt.cdc.gov/agent/smallpox/index.asp

U.S. Army Smallpox Vaccination Program
http://www.smallpox.army.mil

Smallpox information Health & Human Services (English & Spanish)
http://www.smallpox.gov/

West Nile Virus

Wa State Dept of Health
http://www.doh.wa.gov/ehp/ts/Zoo/WNV/WNVFactsHCP.html

CDC - Clinician info
http://www.cdc.gov/ncidod/dvbid/westnile/resources/fact_sheet_clinician.htm

Smallpox Vaccination Plan

In December 2002 the federal government announced its smallpox vaccination plan. The plan includes three stages of vaccination. Stage 1 targets select teams of health care, disease control, and allied personnel who would be involved in the medical management, investigation, and control of suspected cases of smallpox. This round of vaccination would also provide a group of immune vaccinators should further stages of implementation need to occur. Initially slated for implementation in late January, the timeline for this stage has been moved back and will occur, at the earliest, in mid- to late-February. Stage 2 would involve more comprehensive vaccination of health care personnel, and Stage 3 opens up to cover the general public. All participation by health care personnel, public health staff, and the general public is voluntary. Stage 1 will occur in the coming months, but the federal government has not reliably indicated the certainty and timing of Stages 2 & 3. In addition to these efforts, several hundred thousand United States military personnel are being vaccinated.

Background
The last case of smallpox occurred in 1977 in Somalia; it was declared as eradicated by the World Health Organization in 1980. Smallpox is characterized by a several day prodrome of fever, headache, and prostration, followed by onset of a centrifugal rash which progresses from papules to pustules and then to crusted scabs over the course of two to three weeks. Mortality is estimated to be approximately 30%. **Patients remain infectious from the onset of the rash until the scabs are gone—they are not infectious during the pre-rash prodrome.** Differential diagnosis includes varicella, generalized herpes simplex virus infection, and secondary syphilis. Medical management is supportive.

Vaccinia and Vaccinia Immune Globulin
Smallpox vaccine (Vaccinia) is a live viral preparation. It was originally derived from attenuated cowpox, a relative of smallpox. The vaccine is stored as a powder and is reconstituted in solution prior to administration. Vaccinia immune globulin (VIG) is derived from serum of vaccinated donors and is used in the management of recipients who develop severe adverse effects. The current supply of VIG is adequate to cover anticipated needs for Stage 1 of the federal plan. **Vaccinia and VIG are only available for use through the national smallpox vaccination plan via the chain from Centers for Disease Control down through state and local health departments. They are not available for purchase or administration through other settings.** A licensed vaccine might be available next year, but the mode of marketing and distribution has not been detailed.

Administration
Vaccination involves dipping a bifurcated needle into the reconstituted vaccine and then rapidly piercing the skin over the deltoid. Over the course of a week or two, a local reaction evolves which is characterized by evolution from papules to vesicles to scabs and, finally, a scar. When this occurs, the vaccine is said to have "taken" and the recipient is presumed immune. If the vaccine does not "take" (i.e., does not produce this reaction), it is assumed to have failed and revaccination is offered. In addition to this visible reaction, erythema, swelling, itching, and pain occur, with about **30% in a recent study reporting sufficient discomfort to cause at least one day's limitation in activity (e.g., work, school).**

Adverse Effects
Vaccinia administration carries a noteworthy risk of more severe adverse effects. These

include accidental autoinoculation (e.g., eye, genitals); eczema vaccinatum; generalized vaccinia; progressive vaccinia; and post-vaccinia encephalitis. These severe or life-threatening complications occur more commonly, but not exclusively, in persons with predisposing conditions (see below) and in persons who have not previously received vaccinia. They are managed with administration of vaccinia immune globulin and supportive care. **In the pre-eradication era, these events occurred at the rate of about 1 per 1000 and the risk of death was 1-2 per million vaccinations.** Given the much higher prevalence of predisposing conditions in the current era (e.g., eczema, HIV infection, cancer treatment, organ transplant recipients, other immunocompromising conditions) and the large pool of previously unvaccinated persons under age 35, the risk for severe reactions and deaths is probably significantly higher.

Contraindications

Volunteers or candidates for vaccination should be excluded when any of the following conditions are present in them or in a household contact:

- Allergy to the vaccine or any of its ingredients
- History of eczema or atopic dermatitis (regardless of whether the condition is currently active)
- Other skin conditions with active lesions (e.g., burns, herpes simplex, varicella, psoriasis, impetigo, acne vulgaris)
- Immunocompromised status due to HIV, organ transplant, or receipt of immunosupressive agents
- Pregnancy (current or planned within the ensuing 4 weeks)
- Currently breastfeeding
- Age <12 months (non-emergency use is discouraged for anyone under 18 years)
- Moderate or severe short-term illness that has not yet resolved

If smallpox ever becomes more threatened or present in the community, then vaccination for such persons can be reconsidered, further weighing the potential risk of adverse effects against the benefit of protection against exposure.

Secondary Transmission of Vaccinia

Vaccinia is transmissible from person-to-person during days 2-21 after vaccination. **Consequently, vaccination under this plan is also contraindicated for persons whose household contacts have any of the conditions listed above.** About 30% of serious vaccinia complications occurred in persons who were merely contacts of vaccinees. Nosocomial outbreaks of vaccinia were reported in the pre-eradication era. Reported routes of exposure have included hands, clothing, bedding, and urinary catheters. Aerosol transmission also appears to have occurred from a few cases with generalized vaccinia.

Prevention of Secondary Transmission of Vaccinia

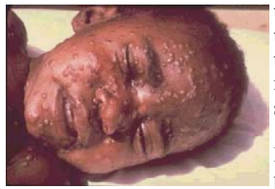
Vaccination sites are potentially infectious from days 2-21 after inoculation. The site should be covered with a dry gauze which, in turn, is covered with a single layer of semi-permeable membrane dressing (e.g. Opsite, Tegaderm, Cosmopore). Recipients should be advised to wash hands frequently (e.g., after touching the bandage, before and after toileting), not to touch or scratch the site, and to wear a long-sleeved shirts to make contact with the site even less likely. Stage 1 vaccination plans include assignment of personnel to monitor recipients' vaccination sites, including screening and specialty medical referral for management of adverse effects. Stage 1 vaccinees do not need to be excluded from patient care as long as these guidelines are followed and complications do not develop; however, institutions may individualize such decisions or temporarily reassign vaccinated staff based upon internal risk management considerations.

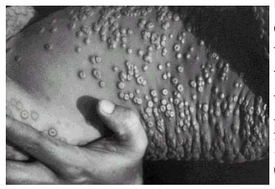
Liability Concerns

The federal Homeland Security Act includes a provision waiving health care providers and public health personnel from liability for injury caused to a *recipient* of vaccinia administered under the national smallpox vaccination plan; compensation for such injury would be pursued from the federal government. The Washington State Department of Labor and Industries indicates that workers' compensation would be available to injured employees who volunteered for vaccination *as part of their job* with a covered employer. Currently no provision exists to provide compensation to persons injured by secondary transmission of vaccinia.

Additional Smallpox Control Measures and Comments

Unlike other communicable rash illnesses, most smallpox patients are bed-bound prior to the onset of infectiousness, during the prodromal febrile stage. Once rash onset does occur, the physical appearance of unvaccinated person with smallpox is severe and obvious enough to be recognized by any professional or layperson familiar with the characteristic appearance (see Figure). These two factors combine to limit the potential for widespread transmission to others, although a greater risk of such may occur when a case seeks healthcare.





Further limiting smallpox's potential as an agent of bioterrorism is the interval of one to three weeks between exposure and infectiousness. This long incubation period provides the opportunity to intervene and limit secondary spread. Close contacts of each suspected or confirmed case can be elicited, located, vaccinated, placed under surveillance for symptoms, and isolated (if symptoms occur). Post-exposure prophylaxis with Vaccinia is effective as long as it is administered within three - seven days of exposure.

(Smallpox Plan cont'd.)

This control approach was very effective in ceasing outbreaks that occurred during the end of the eradication effort and there is no reason to think that it would be otherwise now. Consequently Stage 3 of the vaccination plan (general public) may never become necessary, and in the absence of an attack Stage 2 may not be necessary, either. With approximately 400,000 medical and public health personnel anticipated to undergo vaccination nationwide as part of Stage 1, it is conceivable that one or two deaths may occur. Vaccinating all 2.5 million health care personnel in the U.S. would result in an estimated 10-25 deaths, and vaccinating the entire general population would cause 500-800 deaths. At the current time, with the low risk of an attack occurring and the considerable potential for serious side effects and death, smallpox vaccination for members of the general public is discouraged. The same is probably true for health care personnel who would not be part of a smallpox health care team—at least prior to an attack.

Health care personnel who may want to volunteer to serve on a hospital-based smallpox health care team should contact their facility's infection control practitioner for further information.

Additional Reading

Mack T. A different view of smallpox and vaccination. NEJM 2002;348(5)
Sepkowitz KA. How contagious is vaccinia? NEJM 2002;348(5):
Bozette SA, et. al. A model for smallpox vaccination policy. NEJM 2002;348(5)

Further professional and patient information can be found on CDC's website at http://www.bt.cdc.gov/agent/smallpox/index.asp

Unexplained Critical Illness or Death Reporting

The Washington State Department of Health has informed us that since the establishment of unexplained critical illness or death (UCID) as a notifiable condition in December 2000, the amount of confusion generated by this new reporting requirement has far exceeded the number of case reports received. According to CDC estimates, 120 reports of UCID per year should be expected statewide, but they are receiving 10% of that. We would expect about 5-10 UCID reports per year in Yakima County.

The following are criteria for determining whether a person meets the case definition for UCID:

- The individual is 1-49 years old
- The illness caused the individual to be admitted to the intensive care unit or resulted in their death
- The case was previously healthy and had no preexisting chronic medical condition likely to explain the illness or death
- At least one of the following:
  - Fever (or history of fever)
  - Total WBC count above normal
  - Autopsy or microbiologic evidence of an acute infectious process
  - A physician-diagnosed syndrome consistent with an infectious disease (e.g., endocarditis, rash, hepatitis, etc)
- Preliminary testing has not revealed a cause for illness or death.

The purpose of this reporting system and the investigations that ensue is to characterize the case history and clinical syndrome to allow comparisons with past and future UCID reports in order to identify emerging pathogens or raise the index of suspicion for a bioterrorism event. The investigation does not necessarily define the cause of illness or death. To report an UCID, call the Health District at 249-6541 or 575-4040 ext. 541. After regular business hours call 575-4040 and follow the instructions (press #1 to reach the answering service).

West Nile Virus

Plans are underway for preventing and controlling the occurrence of West Nile Virus infection in Washington State and Yakima County. As you may recall, WNV was found in dead birds on both sides of the Cascades during the fall. This suggests a strong likelihood of additional avian deaths and the possibility of equine and human illness beginning next summer. The next edition of the Bulletin will carry more information about these efforts and how you can help educate patients to help themselves.

On March 26th the State Dept of Health will present a Zoonotic and Vector-borne Disease workshop. This will be an all day workshop in Richland. Topics will include: rabies, enteric zoonotic diseases, tick-borne diseases, zoonotic agents of bioterrorism concern, psittacosis, and other emerging zoonotic issues. More information can be obtained by calling (509) 249-6515