Yakima Health District BULLETIN

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Resources

All links listed in this bulletin can be found on our website at:

www.yakimapublichealth.org

Click on *For Health Care Providers* and use the password ***yakdocs2005***.

Any member of the medical community may access these resources at any time.

Pesticide Related Illness

Surveillance Data

During 2001 (the most recent year for which complete data are published), the Department of Health investigated 200 pesticide incidents involving 250 individuals. This is a 40% decrease from the average of 332 incidents reported annually during 1997-2000. Almost one-half (120) were classified as being definitely, probably, or possibly related to pesticide exposure (DPP). Almost one-half (58) of the DPP cases were related to agriculture. Agricultural cases most often involved the tree fruit industry (40 cases). Agricultural cases involving occupational incidents resulted from applicator exposure (23) or pesticide drift (27). Most non-agricultural occupational exposures (29) affected the applicator. Yakima County was tied with King County for the lead among counties with respect to incidents (11) and individuals affected (17). On a per capita basis, Yakima, Benton and Grant were the leading affected counties.

During 2001, the Department of Labor and Industries conducted 27 pesticide-related safety and health inspections. Twenty-one resulted in citations being issued against the employer. One hundred twenty-nine claims relating to pesticide illness were processed. Sixty-two percent (80) involved agricultural workers and 69 percent (55) of these were related to the tree fruit industry. Non-agricultural claims were equally distributed among industrial, landscaping, and office/retail occupations. L&I pays the initial diagnostic and evaluation costs of worker compensation claims, regardless of the final decision.

Clinical Information

Pesticide poisoning due to acetylcholinesterase inhibitors (the most common incident) presents as a cholinergic crisis with diaphoresis, nausea, vomiting, miosis, headache, muscle fasciculations and (if severe) seizures and obtundation. Clinical management includes the following key interventions:

- Disrobe and wash the patient.
- Discard clothing in sealed plastic bags.

Pharmacologic intervention (at clinician discretion based upon severity and magnitude of exposure):

- Atropine 2-4 mg IV
- 2-pralidoxime chloride 1-2 gm/100 ml normal saline IV over 15-30 minutes
- Benzodiazepines IV prn seizure management

Cholinesterase Monitoring in Pesticide-Exposed Workers

The Department of Labor and Industries (L&I) has adopted a regulation that requires agricultural employers to provide blood testing for workers who handle toxicity class I or II organophosphate or N-methyl-carbamate pesticides. The rule became effective February 1, 2004. The rule requires employers of agricultural pesticide handlers who use covered pesticides to take the following steps:

- Record the number of hours employees spend handling these pesticides.
- Implement a medical monitoring program for workers who could meet or exceed the handling threshold of 30 or more hours in any consecutive 30-day period.
- Identify a medical provider to provide medical monitoring services.
- Make baseline and periodic cholinesterase testing available to employees who could meet or exceed the handling threshold.
- Investigate work practices when a handler's red blood cell (RBC) or plasma cholinesterase level drops more than 20 percent below the employee's personal baseline.
- Remove employees from handling and other exposures to organophosphate and N-methyl-carbmate pesticides when recommended by the medical provider.

- Provide training on cholinesterase monitoring to covered employees.
- Report handling employee handling hours to the medical provider with each periodic test.
- Maintain medical monitoring and other records for seven years.

Report all cases of suspected or confirmed pesticide related illness to:

Washington Poison Center:
1-800-222-1222, or
Washington State Department of Health,
Pesticide Program:
1-888-586-9427 (M-F, 8-5)

Report hospitalizations and deaths immediately, and all other suspected pesticide-related cases within 3 days (RCW 70.104.055 and WAC 246-100).

For more information on pesticide related illness and the DOH Pesticide Program, visit http://www.doh.wa.gov/ehp/ts/PEST.HTM

Rare Case of Q Fever

On February 2, a 53 year-old male custodian presented to a local urgent care setting with a three-week history of fever to 103, chills, night sweats, headache, fatigue, nausea, anorexia, and loose stools. He also reported a 23-pound weight loss and also complained of a severe, non productive cough. He had been evaluated by multiple providers on several occasions over the preceding two weeks as his symptoms progressed, but no definitive diagnosis had been made and he failed to respond to a five-day course of azithromycin. Physical examination revealed sinus tachycardia, a grade 3/6 systolic ejection murmur, and mild splenomegaly. Bloodwork which initially showed mild pancytopenia was, on admission, unremarkable aside from an erythrocyte sedimentation rate of 86 mm/hr, mild serum transaminase elevations (AST 76 U/L, ALT 102 U/L), and hypoalbuminemia (2.7 mg/dl). A monospot test was negative and chest radiographs were normal, as was an abdominopelvic CT. Transesophageal echocardiography demonstrated only minimal mitral valve regurgitation without vegetations and was otherwise normal. Blood cultures did not yield growth of an organism. While hospitalized, the patient was started on empiric antimicrobial therapy for suspected culture-negative endocarditis. He was discharged on hospital day number eight.

Brucella and Toxoplasma serologies were negative, and Rochalimaea (Bartonella) serology was equivocal. Coxiella burnetii (Q fever) phase II antibody titers were markedly elevated (1:2048; reference range: <1:16). The patient completed a 3-week course of doxycycline (100 mg po bid) as an outpatient and recovered.

Q fever is a systemic febrile illness of variable severity most often associated with fever, rigors, sweats, malaise, fatigue and headache. Pneumonitis, hepatitis, and meningitis are complications that can occur, as can endocarditis (the latter particularly in chronic infection). Diagnosis is suspected by clinical presentation and confirmed by serology. Transmission occurs after airborne exposure to aerosolized fluid from tissues or exposure of non-intact skin or mucous membranes to infectious tissues or secretions of domestic animals (e.g., sheep, cattle, goats, cats, dogs) and some feral rodents. Placental tissues carry the greatest potential for transmission. Most reported cases have documented occupational or a vocational exposure to livestock or carcasses. This case had no known direct contact with carcasses, livestock, or placentae. However, he was an occasional hunter and did have extensive exposure to dogs and cats that may have been infected by exposure to infectious tissues from other species. Individual cases can occur with no apparent animal exposure. The only other Yakima County case reported in recent years occurred in 1999 in a man who raised large exotic birds. More cases than this probably do occur but go unrecognized as such due to milder clinical presentation or less complete evaluation.

The incubation period for Q fever is two-to-three weeks after exposure. Human to human transmission occurs rarely, if ever, and immunity persists probably for a lifetime. Q fever is one of many zoonotic or vector borne diseases that should be considered in the differential diagnosis of patients presenting with systemic febrile illnesses, particularly among patients who work or reside in rural or agricultural settings. Other agents to consider include other rickettsial infections, brucellosis, Rochalimaea henselae (cat-scratch fever), listeriosis, and toxoplasmosis. Doxycycline 100 mg twice daily for three weeks is the recommended treatment for acute disease; for chronic disease, a fluoroquinolone or doxycycline plus a rifamycin is necessary for an extended period (e.g., 12-18 months)to minimize relapse of infection. Infectious disease consultation should be sought to confirm the diagnosis and individualize treatment plans.

Special thanks from YHD go out to Neil Barg, MD, and James Zingerman, MD, for diagnosing and reporting this case.

Methicillin Resistant *Staphylococcus aureus* (MRSA) Update

Data aggregated from sentinel surveillance susceptibility testing by the Washington State Department of Health indicates a rapid increase over the past two years in the percentage of MRSA among *S. aureus* isolates from 28% to 43%. A similar rate of increase occurred among those specimens coming from outpatients only, from 19% to 35% over two years. During the most recent reporting interval, January through June 2004, among 25 reporting laboratories serving both inpatient and outpatient populations, the proportion of MRSA ranged from 30-64%, with a facility median of 44%. Among reported outpatient specimens, methicillin resistance ranged from 21-46%, with a median of 41%.

Typing MRSA isolates using pulse-field gel electrophoresis (PFGE) supports epidemiologic investigations into clusters of disease, and also contributes to community MRSA surveillance. By combining DNA "fingerprint" pattern information with microbiologic and epidemiologic data, surveillance seeks to describe circulating MRSA strains and identify those with greatest public health impact. Through September 2004, 62% of 777 MRSA isolates have been categorized into five clonal groups representing strains that within Washington are relatively

frequent, have wide geographic dispersal, and have demonstrated clustering within either health care or community settings. These clonal groups may indicate strains that have a greater propensity for person-to-person transmission and/or virulence. Identifying their presence in a health care or community setting could promote awareness of an increased potential for outbreak situations.

The clonal groups differ substantially from one another in several important characteristics. Three of the groups are health care-associated and two are community-associated. Among the health-care associated groups, all were found predominantly among older patients (median age 51-73 years) who were hospitalized (77-85%), had MRSA isolated from body sites other than skin or wounds (67% - 73%); and the isolates were often multi-resistant (resistant to three or more classes of antimicrobials in addition to beta-lactams). The two community-associated clonal groups disproportionately affected younger patients (median ages 28 and 33 yr) and were obtained primarily from skin and soft tissue sources (88% and 90%). The majority of community-associated isolates were resistant to two or more classes of antimicrobials, typically beta-lactams, macrolides and/or fluoroquinolones.

Nearly all MRSA isolates were resistant to erythromycin or another macrolide. Considerable differences are observable between health care and community strains in susceptibility to ciprofloxacin (10% v 40%, respectively) and clindamycin (40% v 93%, respectively). Resistance increased in 2004 compared to 2003 for ciprofloxacin (from 29% to 42%) and for clindamycin (from 64% to 84%). For clindamycin resistance, it is unclear to what extent this change may be attributable to an increase in testing for inducible resistance. Over 90% of MRSA isolates are sensitive to rifampin, gentamicin, trimethoprim/sulfamethoxazole, and tetracycline.

In summmary, MRSA now accounts for one-third of community acquired and two-thirds of nosocomial *S. aureus* infections. This finding emphasizes the importance of obtaining appropriate specimens for culture prior to initiating empiric therapy and anticipating a substantial risk of resistance to beta-lactams, macrolides, fluoroquinolones, and clindamycin, especially if MRSA risk factors are present (see links for details).

For more information, clinical guidelines, and patient education materials visit: http://www.doh.wa.gov/Topics/Antibiotics/providers_MRSA.htm

This article was adapted from the Washington State Department of Health Sentinal Antibiotic Resistance Surveillance Update. To view the report in its entirety, log on to our providers only website by visiting http://www.yakimapublichealth.org and click on "For Health Care Providers." The password is ***yakdocs2005****.*

Change to Washington State Notifiable Conditions Law

Washington Administrative Code (WAC) 246-101 has undergone the following changes for the reporting of notifiable conditions, effective February 15, 2005:

Condition	Change	Impact/Action Needed
Chronic Hepatitis B	Confirmed permanently as a reportable condition*	No change; continue reporting within 30 days
Chronic Hepatitis C	Confirmed permanently as a reportable condition*	No change; continue reporting within 30 days
Herpes simplex virus--neonatal and initial genital episodes only	Confirmed permanently as a reportable condition*	No change continue reporting within 3 working days
Arboviral Disease (mosquito-borne, sandfly-borne or tick-borne)	Added to list, replacing "viral encephalitis"	For example, report cases of West Nile Virus, Western equine and St. Louis encephalitis within 3 days
Non-arthropod borne viral encephalitides (e.g., HSV, enterovirus)	Removed from list, no longer notifiable	Do not report, unless arboviral in origin or occurring in the context of an outbreak
Group A Streptococcal Infections (Invasive)	Removed from list	Do not report unless occurring in the context of an outbreak
Birth Defects **Autism Spectrum Disorder** **Cerebral Palsy,** **Alcohol Related Birth Defects**	Confirmed permanently as a reportable condition*	Continue reporting

*Previously made reportable on a provisional basis; now permanently added to the list of notifiable conditions

The reporting requirement for hepatitis B surface antigen (HBsAg) positive pregnant women has not changed. All women should be tested during each pregnancy for HBsAg, including women thought to be chronically infected with hepatitis B. **All pregnant HBsAg positive women should be reported during each pregnancy within 3 days.** Public Health follows up on infants born to HBsAg positive women to ensure that hepatitis B immune globulin and vaccine are administered at birth, subsequent vaccine doses are given on schedule to minimize the development of chronic hepatitis, and follow-up serologic testing to identify infected children is done.

For more information on notifiable conditions, visit http://www.yakimapublichealth.org. To report a case or outbreak, call (509) 249-6541.

YAKIMA HEALTH DISTRICT

104 N 1st St, Suite 204
Yakima, WA. 98901
Phone: 509-249-6541
After hours Public Health Emergencies:
509-575-4040 #1 (answering service)
Toll Free: 800-535-5016
Fax: 509-575-7894
http://www.yakimapublichealth.org

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Prevention is Our Business

Notifiable Conditions Summary, January-February, 2005

Condition	Cases Jan to Feb			Total Cases by Year		
	2005	2004	2003	2004	2003	2002
Campylobacteriosis	11	17	16	103	116	106
Cryptosporidiosis	0	0	0	2	3	1
Enterohemorrhagic E. coli	0	0	0	3	4	10
Giardiasis	1	2	2	31	29	36
Salmonellosis	5	1	10	36	55	56
Shigellosis	1	0	3	7	20	29
Hepatitis A acute	0	0	0	2	1	3
Hepatitis B acute	0	1	0	4	0	1
Hepatitis B chronic	1	1	4	22	22	15
Hepatitis C acute	0	0	1	2	2	3
Hepatitis C chronic	34	33	41	218	254	255
Meningococcal	0	1	2	3	4	6
Pertussis	19	4	2	65	17	89
Tuberculosis	2	5	1	11	13	8
HIV New	3	2	0	13	13	9
HIV Deaths	1	0	1	0	1	1
HIV Cumulative Living	137	124	109	134	122	110
Chlamydia	156	160	134	1002	953	886
Genital Herpes—Initial	11	20	12	125	82	76
Gonorrhea	17	21	9	198	107	61
Primary and Secondary Syphilis	0	0	1	0	2	1