Yakima Health District BULLETIN

Volume 9, Issue 2 April, 2010

Update on Rabies Post-Exposure Prophylaxis (PEP)

Inside this issue:

LOCAL CASE

On April 11, 2010, two dog mauled and inflicted almost fatal injuries to a resident from Wapato. The gentleman, while dog/house-sitting on a property along the reservation, recalls leaving the living room and strolling casually into the kitchen. Within moments, one dog and then the second bit repeatedly into his left arm and legs. He struggled and somehow barely escaped the house, climbing into a car and driving to a friend's house. The friend called 911 and Emergency Medical Services (EMS) arrived to transport the gentleman to a Yakima hospital where, given critical injuries and life threatening vital signs, he was transported urgently to Harborview Medical Center (HMC) in Seattle. At HMC, the gentleman underwent several surgical debridements over a four-day course in the surgical intensive care unit.

Despite the involvement of law enforcement officials, EMS and a variety of healthcare providers, a series of appropriate public health responses failed to occur. Sheriff department officials visited the home to investigate the event and, during their time there, shot and killed one of the probable dogs involved in the initial attack. They then left the dog on the property, however, and failed to inform animal control or the Yakima Health District (YHD).

Rigorous attention appropriately went into ensuring the hemodynamic stability and wound care of the attacked gentleman by both EMS and surgeons in Seattle. While his surgical and medical care continued, Yakima Health District officials, led by the reporting of this case in the Yakima Herald, contacted local law enforcement to learn about the dogs involved in the case.

Animal Control services were unable to verify licensing or vaccination status of the dogs likely involved in this case. Specific investigations on animals, including either behavioral observation or surgical/pathological examination of brain matter upon death did not occur.

Despite an unprovoked animal attack, neither Yakima nor Seattle emergency medical staff nor providers on the surgical intensive care unit team took into account the legal reporting requirements to local or state health officials for animal bites that would have led to the immediate consideration of post-exposure prophylaxis for rabies.

Rabid Bats Detected in WA, 2005-2009

YEAR	Rabid bats/Total bats tested (%)
2009	14/311 (5)
2008	17/337 (5)
2007	22/315 (7)
2006	15/273 (5)
2005	15/245 (6)

RABIES INFECTION AND EPIDEMIOLOGY

Rabies is a preventable viral infection with enormous and devastating neurological and ultimately fatal course. The disease occurs largely in bats and other wild animals and is spread via saliva. And although it is exceptionally rare for dogs to acquire (and transmit) rabies, they certainly stand risk of infection from rabid bats.

Given widespread screening, education and vaccination efforts, rabies infections in humans remains generally rare in the U.S. with two to three deaths per year. In the state of Washington, over the past 25 years, there have been two human rabies cases.

In Washington, the typical reservoir for rabies virus (family Rhabdoviridae genus Lyssavirus) is in bats and rabid bats have been detected across the state. In Yakima County, while numbers of exposures to dogs continue to be robust, bats likely remain the primary reservoir for rabies infection and transmission. According to Laura Charters, of YHD's section on Animal borne Disease, the number of specimens submitted to the WSPHL for rabies testing went from 21 to 17 to 20 in 2007, 2008, and 2009, respectively. Of the animals submitted in 2009, 12 were dogs, seven cats, and one bat. None of the specimens submitted by the YHD tested positive for rabies during 2009. Only two patients received rabies post-exposure prophylaxis.

Rabid Non-Bat Animals and Rabies Strain Type in WA, 1986-2009

YEAR	Animal Type9(County)	Rabies Strain
2002	Cat (Walla Walla)	Bat-Variant
1994	Llama (King)	Bat-Variant
1992	Horse (Franklin)	Unknown
1987	Dog (Pierce)	Unknown; history of bat exposure

In March 2010 the State of Washington Department of Health released updated recommendations on rabies post-exposure prophylaxis to reflect the

recent changes/recommendations of ACIP. Below is a summary of reporting requirements and local responsibilities followed by specific guidelines on rabies PEP.

Yakima County Animal Exposures by Type, 2009

	Dog	Cat	Bat	Other	Total
Jan	15	6	1		22
Feb	14	4			18
Mar	19	4			23
Apr	30	4		1	35
May	26	2			28
Jun	21	6	1		28
Jul	27	4	1		32
Aug	24	7			31
Sep	21	3			24
Oct	14	5			19
Nov	10	3		1	13
Dec	14	1			15
Total	235	49	3	2	289

LEGAL REPORTING REQUIREMENTS

Animal Bites:

1. Health care providers: immediately notifiable to local health jurisdiction.
2. Hospitals: immediately notifiable to local health jurisdiction.
3. Laboratories: no requirements for reporting.
4. Veterinarians: immediately notifiable to local health jurisdiction.
5. Local health jurisdictions: no requirements for reporting, however staff at the Washington State Department of Health (DOH) Communicable Disease Epidemiology Section (CDES) are available for consultation on management of animal bites as needed.

Rabies Post-Exposure Prophylaxis:

1. Health care providers: notifiable to local health jurisdiction within 3 workdays
2. Hospitals: notifiable to local health jurisdiction within 3 workdays.
3. Laboratories: no requirements for reporting
4. Local health jurisdictions: notifiable to CDES within 7 days of case investigation completion or summary information required within 21 days

Local Health Jurisdiction Investigation Responsibilities:

1. Begin investigation when the animal bite is reported
2. Counsel the patient and/or health care provider regarding the risk of rabies exposure and need for rabies PEP
3. Facilitate the capture and 10-day confinement of dogs/cats, and ferrets involved in a human exposure
4. Facilitate transport of animal heads for rabies testing to the Washington State Department of Health Laboratories
5. Report all persons who have rabies PEP initiated to CDES

Based on a report released in the March 23, 2010 MMWR, based on animal and clinical studies and some efforts in epidemiologic surveillance as part of an effort by Advisory Committee on Immunization Practices (ACIP), studies supported four vaccine doses with human rabies immune globulin (HRIG) with favorable immune response, versus the standard RIG plus five vaccine doses.

In sum, recommendations for rabies PEP for immunocompetent hosts not previously vaccinated, includes both the components of prompt, thorough and aggressive wound care and administration of:

- HRIG: one dose of 20 IU/kg directly in and around the area of the wounds
- Rabies vaccination: four doses of cell culture rabies vaccine at 1 mL/dose into the deltoid (avoid the gluteal region due to potential reduced penetration) on days 0, 3, 7 and 14. The upper thigh (anterolateral aspect) can be used in infants/young children.

For those who have been previously vaccinated, patients should receive the usual prompt and aggressive wound care and two vaccines (days 0 and 3). These individuals do not require HRIG

Based on a series of scrupulous inquiries and follow-up efforts by Yakima Health District Communicable Diseases Team, the gentleman who was attacked ultimately received HRIG at HMC, rabies vaccination series (four vaccines) as well as tetanus vaccination.

REFERENCES:
Vector Program Annual Report Summary 2009; Laura Charters, YHD
Rabies PEP, Reporting and Surveillance Guidelines, March 2010; DOH, WA,
http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5902a1.htm
www.cdc.gov/rabies/

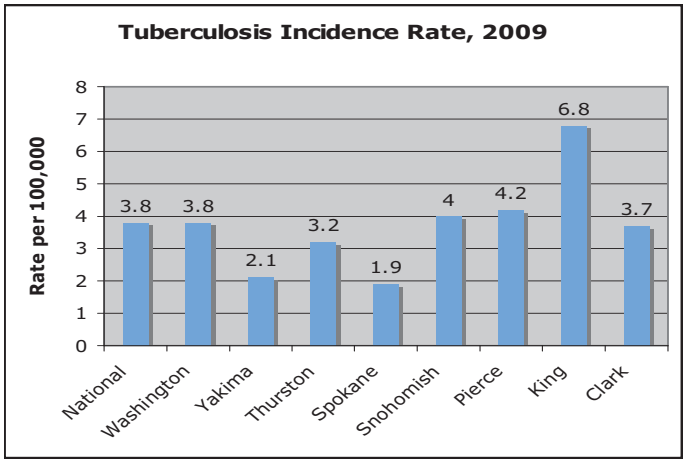
TUBERCULOSIS UPDATE IN YAKIMA COUNTY

Global Perspective

Perhaps one of the most notable public health facts is that one third of the world's population is infected with *Mycobacterium tuberculosis* (TB). Over 9 million people around the world become sick with TB yearly. And each year, there are almost 2 million TB-related deaths worldwide. Despite this, when compared with 2008, the U.S. TB case rate decreased by approximately 11.3% in 2009. Moreover, since 2005, the State of Washington has seen a decline in the crude TB incidence rate. In 2008, in fact, the rate in the state was 3.5 per 100,000. There was about a 12% increase in number of crude cases, however, from 2008 to 2009: 228 to 256 cases across the state.

Local Glance

In all of Washington, **Yakima represents the county with the most notable decrease in cases from 2008 to 2009.** While the State of Washington has an incidence rate of 3.8 (which is the equivalent to the national rate), Yakima's incidence rate is 2.1.



Race/Ethnicity

Certain minorities represented higher rates of infection than Caucasian populations. Racial/ethnic communities with generally high TB rates include Asians with rates jumping from 18.6 to 24.7 per 100,000 between 2008 and 2009. Native Hawaiian and

Pacific Islanders, though low in absolute numbers, had a rate of 36.6 per 100,000. Non-Hispanic Blacks also had high rates of infection at 23.7 per 100,000.

Tuberculosis Incidence Rate by Race and Ethnicity, 2009, Washington

Racial/Ethnic Category	Rate per 100,000	No.	Percentage
Asian, non-Hispanic	24.7	106	(41)
Black, non-Hispanic	23.7	53	(21)
Hispanic	5.7	35	(14)
American Indian/Alaskan Native, non-Hispanic	4.2	4	(2)
Native Hawaiian/Other Pacific Islander	36.6	11	(4)
White, non-Hispanic	0.9	47	(18)

One population of great interest to a few counties in Washington State including Yakima is immigrants, representing 77% of all TB cases in 2009. Those born abroad, particularly from Mexico and the Philippines, represent sizeable numbers of infected cases in the state of Washington and certainly in Yakima. Other communities, specifically those that represent sizeable demographic majorities in Yakima County, Whites and Hispanics, had rates of 0.9 and 5.7 per 100,000 respectively.

TB and HIV

TB also happens to be the leading killer of those with HIV. With growing concerns of increased diagnosis of TB in the context of HIV, particularly in racial/ethnic minority populations, reported numbers have been expected to be higher than current statistics. Following standard public health guidelines, Washington state clinicians and public health officials impressively managed to test 243 (95%) of cases of active TB in the state for HIV, resulting in six (2.5%) detected HIV infections.

Testing and Diagnosis

When it comes to testing, increasingly, interferon gamma release assays (IGRAs) are replacing the traditional Mantoux tuberculin skin test (Purified Protein Derivative or PPD). Available since 2005, the Quantiferon –TB Gold test aids in the diagnoses of both latent TB infection and TB disease. The test, among having other advantages over TST, provides a result in about 24 hours, requires a single patient visit, does not rely on intra-operative variable reading of skin reactions and is not affected by prior BCG (bacille Calmette -Guérin) vaccination. IGRAs are steadily becoming the standard for TB testing.

Drug Resistance

In 2009, five percent (13 out of 204 specimens that were sent for testing) revealed INH resistance. The two cases of multi-drug resistant TB (resistance to both INH and rifampin) occurred in two foreign-born individuals. Generally speaking, resistance issues have tended to occur among foreign born individuals (8%) compared with U.S. born individuals (2%).

The drop in cases of active TB in Yakima County raises some important issues. From a public health perspective, does this represent a trend of a decline as we have seen at the national level? And in either or both cases, are these true declines or missed diagnoses? Is it possible that we are not assessing and testing populations at risk? Are we not diagnosing cases appropriately or accurately?

Currently, the State of Washington and certainly, Yakima County is fairly rigorous in applying appropriately strong messages of adherence to prescribed anti-TB medications with directly observed therapy. Public health and clinicians also ought to be working jointly to assess for and safely treat those with latent tuberculosis. Moreover, close contact investigations to those with primary infection ought to continue to be thorough.

As local and state level TB funding becomes increasingly strained, public health officials and clinical practitioners will need to work more collaboratively and creatively on screening and surveillance of some of Yakima County's more challenging populations, including migrant farm workers, their extended networks, other immigrant populations, tribal populations, those with HIV, and those in correctional facilities.

REFERENCES:
A Glance At Washington State's Tuberculosis Epidemic, DOH, Washington, World TB Day, March 24, 2010
www.cdc.gov/tb

PARTNERING FOR TB CONTROL IN EASTERN WASHINGTON

Presented by:
Francis J. Curry
National Tuberculosis Center

This course will consist of interactive lectures, small group activities and case presentation on a variety of TB topics.

DATE: Wednesday, July 21, 2010

TIME: 8:30am - 4:30pm
(Registration begins at 8:00am)

PLACE: Yakima Health District
1210 Ahtanum Ridge Dr
Union Gap, WA 98903

This course is for nurses and others who provide health services to patients with or at risk for tuberculosis.

Agenda Topics:

- Epidemiology of TB: global, U.S., WA
- Latent tuberculosis infection
- Collaboration for quality case management
- Case management collaboration - example from the field
- Tuberculosis contact investigation

The Francis J. Curry National TB Center is approved as a provider of continuing education by the California State Board of Registered Nurses, Provider No. CEP 12308. This course has been approved for 6 continuing education hours.

There is only approximately 40 spots open with pre-registration.

For more information please contact:

Lela Hansen, RN, PHN
Yakima Health District
(509) 249-6532

In collaboration with the:

Washington State Department of Health, Yakima County Health District, Yakama Indian Health Services and Chelan-Douglas Health District

YAKIMA HEALTH DISTRICT

1210 Ahtanum Ridge Drive
Union Gap, WA 98903

Reporting Line: (509) 249-6541
After hours Emergency: (509) 575-4040 #1
Toll Free: (800) 535-5016 x 541

Confidential Fax: (509) 249-6628

http://www.yakimapublichealth.org

Dennis Klukan, MSEPH, *Administrator*
Christopher Spitters, MD, MPH, *Health Officer*
Devika Singh, MD, *Deputy Health Officer*
Sheryl DiPietro, RN,, MSN*, Community and Family Health Director*
Marianne Patnode, RN, *Communicable Disease Services Program Coordinator*
Gordon Kelly*, MS, RS, Environmental Health Director*
Wendy Doescher*, Region 2 AIDSNET Coordinator*
Denny Flodin-Hursh, RN, *Public Health Nurse*
Lela Hansen, RN, *Tuberculosis Consultant*
Laura Charters, BS, *Environmental Health Specialist*
Candy Delagasse, RN, *Immunization Consultant*

	Cases			Total Cases by Year	
Condition *(includes confirmed and probable cases)*	**Jan-Mar**	**Jan-Mar**	**Jan-Mar**	**Total Cases by Year**	**Total Cases by Year**
	2010	**2009**	**2008**	**2009**	**2008**
Campylobacteriosis	22	11	22	101	118
Cryptosporidiosis	0	0	1	3	7
Enterohemorrhagic E. coli	0	6	1	9	12
Giardiasis	3	8	9	26	24
Salmonellosis	7	7	1	40	49
Shigellosis	0	1	1	7	8
Hepatitis A acute	0	1	1	2	2
Hepatitis B acute	0	1	1	1	2
Hepatitis B chronic	1	2	2	9	9
Hepatitis C acute	2	1	0	2	0
Hepatitis C chronic	77	40	37	190	182
Meningococcal	2	0	1	2	1
Pertussis	0	15	5	34	29
Tuberculosis	2	0	6	7	10
HIV New	0	1	4	12	9
HIV Deaths	0	1	2	5	16
HIV Cumulative Living	159	159	154	171	159
Chlamydia	292	296	305	1180	1167
Genital Herpes—Initial	11	11	28	57	66
Gonorrhea	4	9	34	39	85
Primary and Secondary Syphilis	1	2	1	2	1

Notifiable Conditions Summary Jan - Mar, 2010