

PUBLIC HEALTH Bulletin



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Postal Service activates Bio Detection System

As part of an on-going effort to ensure the safety of the mail and provide early detection of any attempt to use the mail for the distribution of anthrax in a bioterrorism attack, the United States Postal Service (USPS) is installing Biological Detection System (BDS) devices at over 280 Processing and Distribution Centers nationwide, including the Processing and Distribution Center (PDC) in Orange County located at 3101 W. Sunflower Ave., Santa Ana.

BDS devices are installed on or near key mail processing equipment that is capable of aerosolizing anthrax contained in envelopes. The BDS system combines automated air sampling and testing for *Bacillus anthracis*, the bacteria that causes anthrax infection. The testing method is a polymerase chain reaction (PCR) that tests for the genetic material of the organism. The testing is usually done at 90-minute intervals for each device and there are 9 such devices at the Santa Ana facility.

Inhaled *B. anthracis* spores can cause life-threatening illness in a short time (rarely as short as one day). Prophylactic antibiotics are recommended to persons exposed to anthrax. Because confirmation of the presence of anthrax spores can take several days, the prophylactic

antibiotics may be dispensed before final confirmation of the presence of viable anthrax spores by culture.

Employees working directly with sorting machines, especially the Advanced Facer Cancellor System (AFCS) where the detection system is installed and where letters are first sorted, are at highest risk.

Immediate response for Postal Service employees:

Upon detection of *B. anthracis*, the BDS alarm sounds, automatically shutting down the processing machines and alerting facility staff to evacuate. This alarm also triggers the immediate BDS response, which includes:

- Decontamination of USPS employees present at the time of the alert.
- Dispensing (by Public Health) of a 5-day supply of prophylactic antibiotics. These are not to be taken until initial confirmatory testing by the Orange County Public Health Laboratory (PHL) is reported as positive (see below).
- Provision of health information.

Members of the public present at the time of the evacuation will be instructed to go home, remove and wash their clothes and shower.

Intermediate response:

The Public Health Laboratory (PHL) will test a specimen from the BDS device to confirm the presence of *B. anthracis*. A preliminary result by PCR, which should be available the following day, will determine whether or not the persons potentially exposed will be instructed to take the medication. If the PCR is positive, potentially exposed members of the public will be provided a 5-day course of prophylactic antibiotics by Public Health at the Health Care Agency's Santa Ana clinic location, 1725 W. 17th Street. Culture results will be available in 1-

2 days from the PHL. If the culture is positive, a 60-day course of antibiotics will be recommended. Clinics for dispensing the remaining 55-day supply of antibiotics will be held by Public Health. A 3-dose vaccination series will be provided if recommended and supplied by the Centers for Disease Control and Prevention.

It is not possible to know exactly who in the facility may have been exposed to anthrax, and there are no laboratory tests available to determine this. Risk of exposure is related to the job duties and location of the person during the suspect time period. Employees working directly with sorting machines (especially the Advanced Facer Cancellor System (AFCS) where the detection system is installed and where letters are first sorted) are at highest risk. Because of the high risk of mortality from anthrax infection, we are recommending prophylaxis for everyone who may have been exposed by being in the building during the suspect time period.

Prior to availability of the results of antibiotic sensitivity testing, the recommended antibiotics are doxycycline or ciprofloxacin. These antibiotics are considered equally effective. The risk of death from inhalational anthrax is higher than the risk of certain side effects from these medications; therefore, these medications may still be prescribed despite certain precautions. Careful monitoring of patients on medications with known interactions or with kidney or liver problems is necessary. USPS employees and the public will be advised to contact their private physician for continuing health care needs, including any side effects that may result from antibiotic use. Health Care Agency Epidemiology staff will be available for consultation by health care providers.

Individuals who may have been exposed can elect to receive their antibiotic prophylaxis directly from their private physician. Health care providers may call the Health Care Agency physician hotline at (714) 834-7798 for recommendations on antibiotics to use.

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West Nile virus: consistently unpredictable

For the first time ever, locally acquired West Nile Virus (WNV) infection occurred in Orange County in 2004, when there were 64 cases identified with 4 deaths. Cases were concentrated in the northern part of the County. Since its first identification in the United States in New York City in 1999, WNV has made its way across the country and is expected to become endemic. In 2004, evidence of WNV in Orange County was detected in April, when a dead bird tested positive, and the first positive mosquito pool occurred in June. The earliest onset of an identified human case occurred in mid-June and the latest at the end of September. This year, human cases could occur much earlier, since dead birds and mosquitoes in Orange County have already tested positive for WNV in 2005. It is impossible to predict the severity of this transmission season.

WNV is a mosquito-borne virus that causes infections classified as **West Nile Fever (WNF — fever, headaches, myalgias, lymphadenopathy, rash, fatigue and weakness)** in ~20% of cases and **West Nile Neuroinvasive Disease (WNND — meningitis, encephalitis, or acute flaccid paralysis)** in <1% of those infected. The remainder of infections (~80%) are asymptomatic. Although WNV can affect people of all ages, persons over the age of 50 years and/or with immunocompromising conditions are at increased risk for severe disease (e.g., WNND). Knowledge about WNV disease continues to evolve—new modes of

transmission (transfusion, transplantation, transplacental, breastfeeding, occupational) have been identified, and recent experience in Colorado in 2003 suggests that WNF may not always be mild or short-lived.

Physicians throughout Orange County should have a heightened index of suspicion for WNV infection and submit specimens from suspected cases for testing. **In particular, testing for WNV should be done on the following patients:**

- all hospitalized patients with encephalitis
- all hospitalized patients with acute flaccid paralysis
- all hospitalized adults (≥18 years of age) with aseptic meningitis

WNV testing should also be considered in select patients <18 years of age with aseptic meningitis (especially with negative enterovirus polymerase chain reaction (PCR) and/or exposure to mosquitoes) and select patients with prolonged febrile illness (≥7 days). Diagnosis is best made by serology (IgM or acute and convalescent IgG) for WNV. In some cases, confirmatory testing is necessary with plaque reduction neutralization tests (PRNT) to rule out cross-reactivity with other flaviviruses. Serology may be negative early in the course of disease (especially within the first week after onset of symptoms in WNF patients), therefore repeat serology in 3-5 days may be helpful if there is a strong clinical suspicion. PCR of CSF for enterovirus is helpful to rule out this more common virus in patients with aseptic meningitis

and/or encephalitis in the summer and fall. WNV testing of possible cases is available through Orange County Epidemiology and some commercial laboratories. Making the diagnosis of WNV infection can spare the patient unnecessary treatment for other conditions in the differential. In addition, clinical trials are available for patients with or at risk for WNND.

WNV disease is reportable to Public Health Epidemiology within one working day of identification. Reporting to Orange County Epidemiology may be made by the following methods:

Telephone . . . (714) 834-8180
 Fax (714) 834-8196
 Mail PO. Box 6128, Santa Ana, CA 92706-0128

Aseptic meningitis and encephalitis are also reportable diseases under State law (California Code of Regulations, Title 17, Section 2500).

For more information:

- Orange County Public Health/Epidemiology: <http://www.ochealthinfo.com/epi/wnv/index.htm>
- California: <http://westnile.ca.gov/home.htm>
- CDC: <http://www.cdc.gov/ncidod/dvbid/westnile/index.htm>
- Orange County Vector Control District: <http://www.ocvcd.org/>

Orange County WNV Summary - 2004

Gender	WNND	%	WNF	%	BD+	%	TOTAL	TOTAL %
Male	25	73.5%	18	64.3%	1	50.0%	44	68.8%
Female	9	26.5%	10	35.7%	1	50.0%	20	31.3%
Total	34		28		2		64	
% of all WNV (+) persons		53.1%	43.8%		3.1%		100.0%	
Age Group	WNND	%	WNF	%	BD+	%	TOTAL	TOTAL %
0-10 yrs	0	0.0%	0	0.0%	0	0.0%	0	0.0%
11-20 yrs	0	0.0%	1	3.6%	1	50.0%	2	3.1%
21-30 yrs	3	8.8%	0	0.0%	0	0.0%	3	4.7%
31-40 yrs	4	11.8%	3	10.7%	0	0.0%	7	10.9%
41-50 yrs	5	14.7%	4	14.3%	1	50.0%	10	15.6%
51-60 yrs	7	20.6%	12	42.9%	0	0.0%	19	29.7%
61-70 yrs	4	11.8%	7	25.0%	0	0.0%	11	17.2%
71-80 yrs	7	20.6%	1	3.6%	0	0.0%	8	12.5%
81+ yrs	4	11.8%	0	0.0%	0	0.0%	4	6.3%
Total	34		28		2		64	
Median Age	58		54		34		54	

Mycobacterial infections and pedicures

In California, since the year 2000, at least two outbreaks of rapidly growing mycobacteria (RGM) causing severe, scarring cutaneous lesions have occurred among persons who had pedicures at nail salons. These pedicures involved the common nail salon practice of submerging the legs in a whirlpool footbath. RGM are commonly found in soil and water, including chlorinated drinking water, but infrequently cause infection. Most RGM skin infections are caused by *Mycobacterium fortuitum*, *M. abscessus*, and *M. chelonae*. RGM are aerobic, non-spore forming, nonmotile, slightly curved or straight rods that take up to 7 days to grow on solid media. They are not usually detected on standard bacterial wound cultures which are routinely incubated for only 3 days. RGM most commonly cause cutaneous infections but can cause bone, joint and lung disease. In immunosuppressed hosts, dissemination can occur. Skin infections can present as abscesses, ulcerations, nodules, or furuncles and are often difficult to treat.

Infections with RGM can occur whenever soil or non-sterile water containing RGM is introduced under the skin, including by instrumentation or penetrating trauma. Sporadic cases and outbreaks, including surgical site infections, have occurred following medical procedures, particularly after cardiac surgery and augmentation mammoplasty. Cases have also occurred following liposuction and other cosmetic procedures. Nosocomial infections are usually the result of insufficient or improper sterilization of instruments.

The first pedicure-associated RGM outbreak occurred in Santa Cruz County and involved 110 nail salon customers. Investigation found matching strains of *M. fortuitum* from patients and the whirlpool footbaths at the nail salon. Shaving of the legs with a razor prior to the pedicure, the only risk factor identified, increased the risk of infection by 4.8 times; however, one third of the cases had not shaved their legs before having pedicures. Most of the affected women had more than 1 boil (median 2, range, 1-37 boils). Of 61 women for whom clinical details were obtained, the mean disease duration was 170 days (range 41-336 days). For the 48 women who received antibiotics, the median duration of therapy was 4 months (range 1-6 months).

As a result of that outbreak investigation, additional testing of nail salon footbaths at diverse locations in California was done and revealed that footbaths were often contaminated with RGM. In 2001, the California Board of Barbering and Cosmetology promulgated regulations requiring specific disinfection procedures of the footbaths. It is not known how effective these procedures are/will be in decreasing the risk of RGM infection or how fully the nail salon operators are complying with them. More recently, a pedicure-associated RGM outbreak was investigated in Santa Clara County.

There are more than 35,000 licensed nail salons in California, and many physicians will have patients who get pedicures. Physicians should suspect RGM infection in patients who have had a pedicure and present with subcutaneous nodules, abscesses, furuncles or ulcerations localized to the lower legs. RGM should also be suspected if such lesions occur on any part of the body following medical and cosmetic procedures. Often the course is prolonged because RGM are not detected in routine bacterial cultures, the infections may be indolent, and the lesions may appear to respond for a time to drainage and/or empirical antibiotic treatment. The lesions can be disfiguring and require months of antibiotic treatment and even surgical debridement.

The Board of Barbering and Cosmetology has guidelines and other information for persons who wish to have pedicures (<http://www.barbercosmo.ca.gov>). In addition to not shaving the legs prior to having a pedicure and forgoing pedicure if there are any lesions on the legs, consumers should be sure that the nail salon and operator are licensed and the facility appears clean.

To better understand the occurrence and burden of this unusual infection, the State of California has requested that any laboratory-confirmed and suspect cases of rapidly growing mycobacterial skin infection of the lower extremities be reported to the local health department. Please call Orange County Public Health at (714) 834-8180 to report any cases or fax a report and any laboratory results to (714) 834-8196.

California Code of Regulations, Title 17, Section 2500, mandates that certain communicable and non-communicable diseases/conditions be reported to the local health department using specified methods and time frames. The List of Reportable Diseases for Orange County, which summarizes disease-reporting requirements, may be downloaded from www.ochealthinfo.com/epi/report-diseases.htm. The Confidential Morbidity Report form, which may be used to report notifiable diseases/conditions to Orange County Public Health, is found on the same website.

Clinical botulism cases traced

A Florida osteopath and three other individuals were recently reported with clinical botulism following apparent administration of massive doses of type A botulinum toxin for cosmetic purposes. All four patients were hospitalized in late November 2004 and three remained on ventilatory support in December. Laboratory tests confirmed three of the patients as having type A toxin. There was initial concern that this episode could have been due to the use of FDA-approved Botox®. It was later ascertained that the osteopath had access to other sources of botulinum toxin that were labeled for "research purposes only, not for use in humans." The FDA has never received any reports of systemic botulism when this product was used in accordance with company instructions.

The FDA is investigating two possible suppliers of the research toxin, one in Arizona and the other in northern California. The California source supplies botulinum toxin A in 50 and 1000 microgram vials. (For comparison, the lethal dose of type A botulinum toxin for a 70-kg human, as extrapolated from primate studies, is estimated to be 70 micrograms orally, and 0.09-0.15 micrograms intravenously or intramuscularly.) According to an FDA affidavit filed on December 13, records obtained from the Florida osteopath's clinic confirm an order of bulk toxin from this company.

The California Department of Health Services (CDHS) is aware that clinicians in California have received and have used these unapproved botulinum toxins in themselves and others, and at least one physician has been reported to the Medical Board of California. There have been no reported cases in California of clinical botulism from toxin used for cosmetic purposes. While the risks associated with these concentrated toxins may be mitigated by proper dilution, these products are nevertheless unlicensed for human use and should be avoided.

In making public its concerns about the use of these unlicensed toxins, CDHS has noted that physicians should be aware of their potential for causing life-threatening disease and of possible legal action from the Medical Board should licensed physicians use these products in an unauthorized manner.

DISEASE	Annual (Weeks 1-52) Number of Cases by Year of Report			
	2004	2003	2002	2001
AIDS ¹	223	238	263	247
AMEBIASIS	16	11	18	24
CAMPYLOBACTERIOSIS	234	245	294	262
CHLAMYDIA	5201	6405	5629	5757
CRYPTOSPORIDIOSIS	14	21	9	6
E-COLI O157:H7	17	24	17	13
FOOD POISONING OUTBREAKS	49	44	72	37
GIARDIASIS	95	124	127	170
GONOCOCCAL INFECTION	761	920	686	664
H-FLU, INVASIVE DISEASE (<30y)	3	5	4	3
HEPATITIS A (acute)	39	77	91	146
HEPATITIS B (acute)	29	26	48	48
HEPATITIS B (perinatal, acute & chronic) ²	3	2	8	0
HEPATITIS C (acute)	5	3	10	10
HIV ³	502	538	793	NA
KAWASAKI DISEASE	26	24	16	16
LISTERIOSIS	14	5	15	12
MALARIA	14	12	17	12
MEASLES (RUBEOLA)	0	0	2	5
MENINGITIS, TOTAL	576	648	378	310
ASEPTIC MENINGITIS	521	596	319	271
MENINGOCOCCAL INFECTIONS	18	16	9	14
MUMPS	2	3	8	2
NON-GONOCOCCAL URETHRITIS	468	554	793	656
PERTUSSIS	111	92	102	21
PELVIC INFLAMMATORY DISEASE	46	38	62	59
RUBELLA	0	0	0	0
SALMONELLOSIS	305	250	310	268
SHIGELLOSIS	124	121	177	138
STREP, INVASIVE GROUP A	39	46	57	31
SYPHILIS, TOTAL	267	262	329	233
PRIMARY	14	18	17	17
SECONDARY	29	20	14	22
EARLY LATENT	28	25	31	26
LATENT	12	11	3	8
LATE LATENT	183	182	260	159
CONGENITAL	1	3	4	1
NEUROLOGICAL	0	3	0	0
TUBERCULOSIS	224	248	230	278
TYPHOID FEVER, CASE	6	9	3	0
WEST NILE VIRUS INFECTIONS	64	NA	NA	NA
WEST NILE FEVER	28	NA	NA	NA
WEST NILE NEUROINVASIVE DISEASE	34	NA	NA	NA
BLOOD DONOR POSITIVE	2	NA	NA	NA

¹Source: CDC HARS Reporting System.

NA= Not Available

²Previously included in Hepatitis B acute or chronic totals. Separate reporting started in 2002.³Source: CDC HARS Reporting System. 2002 numbers are from July-December. Orange County officially began HIV case reporting July 1, 2002; data is unavailable for previous years.

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