County of Los Angeles Public Health

THE PUBLIC'S HEALTH

Newsletter for Medical Professionals in Los Angeles County

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NEW VACCINE RECOMMENDATIONS FOR 2006-07 INFLUENZA SEASON

The 2006 recommendations were expanded to include healthy children 24-59 months, their household contacts and out-of-home contacts.

Influenza is a common and very contagious disease that kills approximately 36,000 people each year in the U.S. The risks for complications, hospitalizations, and deaths from influenza are higher among persons aged ≥65 years, children <2 years of age, and persons of any age with certain underlying health conditions than among healthy older children and younger adults.

Vaccination is the primary method for preventing influenza and the severe complications associated with the infection. For the 2006-07 influenza season, four manufacturers expect to provide influenza vaccine to

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Bioterrorism and Animals

Of a long list of potential biological disease agents, only a handful is reasonably easy to prepare and disperse. A report in the 2002 *Emergency Medicine Clinics of North America* listed bacterial and viral biological terrorism agents; 80% were animal diseases transmissible to people, or zoonoses.

The CDC classifies bioterrorism diseases/agents into categories A, B, and C. Category A has the highest priority as the diseases can be easily transmitted from person to person (See table).

Of the diseases in Category A, most are zoonoses with the exception of smallpox, which was eliminated in 1977 with a worldwide vaccination program.

Bioterrorism Diseases in Category A

Disease	Agent
Anthrax*	Bacillus anthracis
Botulism*	Clostridium botulinum toxin
Plague*	Yersinia pestis
Smallpox	variola major
Tularemia*	Francisella tularensis
Viral hemorrhagic fevers	filoviruses and arenaviruses

* Endemic in Los Angeles County

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Medical Reserve Corps of Los Angeles

Following the September 11, 2001 terrorist attacks, the federal government recognized the need to enlist and train volunteer health care professionals to help communities minimize casualties and save lives. The Medical Reserve Corps (MRC) was established as a component of the Citizen Corps-U.S. Freedom Corps and designated to serve under the direction of the Surgeon General.

The following year, Raymond Goodman, M.D., M.P.H., a retired physician and a faculty member of the UCLA Schools of Medicine and Public Health since 1950, met with the county's Department of Public Health and proposed the need to recruit primarily retired physicians and nurses to participate as volunteer responders. Dr. Goodman was appointed by the Surgeon General to serve as the Medical Director of the Medical Reserve Corps of Los Angeles, an organization that serves a population of nearly ten million.

In recognition of his leadership and energy Dr. Goodman was personally awarded the Presidential Volunteer Service Award by President Bush in October, 2005.

Today there are 450 MRC units in the country with 30 units in California; 80,000 volunteers nationwide with over 6000 in California. In the MRC of Los Angeles there are over 600 MD, RN and PA members; nearly 100 chaplains and nine deputy medical directors serving in geographically designated areas to enhance local disaster response activity. Whenever a major disaster, natural or man-made, occurs, MRC members are deployed to assist in triage and in the distribution of vaccinations or drugs at community-based distribution centers.

During disaster-free periods, the MRC trains to keep up to date, and presents public information lectures on preparedness to schools, faith-based institutions and community organizations.

For more information, or to enroll as a volunteer, you may go on line to www.cphd.ucla.edu/mrc/

Raymond Goodman, MD, MPH
Medical Director of the Medical Reserve Corps of Los Angeles

The Centers for Disease Control and Prevention (CDC) continues to recommend that the Amantadine class of antiviral drugs not be used for the prophylaxis or treatment of influenza A in the U.S. this year, due to the emergence of a high level of resistance of circulating strains of influenza A to this class of drugs. When susceptibility of influenza A to Amantadine has been reestablished, the recommendation will be changed. Please remember that the Amantadine class of drugs has never been recommended for treatment of influenza B. [MMWR June 16, 2006/55(23);648-653]

New Influenza Vaccine Recommendations Continued from page 1

the U.S. Three manufacturers will provide trivalent inactivated influenza vaccine (TIV): sanofi pasteur, Inc.; GlaxoSmithKline, Inc.; and Novartis Vaccine (formerly Chiron Corporation). MedImmune Vaccines, Inc., manufactures a live attenuated influenza vaccine (LAIV) in the form of a nasal spray.

In June 2006, the CDC's Advisory Committee on Immunization Practices (ACIP) released their recommendations for influenza vaccination. The 2006 recommendations were expanded to include healthy children 24-59 months, their household contacts and out-of-home contacts. Annual influenza vaccination is now recommended for the following groups:

- Children aged 6-59 months;
- Women who will be pregnant during the influenza season;
- Persons aged ≥ 50 years;
- Children and adolescents (aged 6 months-18 years) who are receiving long-term aspirin therapy and, therefore, might be at risk for experiencing Reye's syndrome after influenza infection;
- Adults and children who have chronic heart and lung conditions, including asthma (hypertension is not considered a high-risk condition);
- Adults and children who have chronic metabolic conditions, i.e. diabetes, chronic kidney disease, blood disorders, or weakened immune system (including immune system problems caused by medication or infection with human immunodeficiency virus [HIV/AIDS]);
- Adults and children who have any condition that may decrease respiratory function or who are at increased risk for aspiration (brain injury or disease, spinal cord injuries, seizure disorders, or other nerve or muscle disorders);
- Residents of nursing homes and other chronic-care facilities that house persons of any age who have chronic medical conditions;
- Persons who care for persons at high risk for influenza-related complications, including healthy household contacts and caregivers of children aged 0-59 months; and
- Health-care workers.

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Manufacturer	Vaccine	Formulation	Thimerosal preservative	Age indication
sanofi pasteur, Inc.	Fluzone®, Inactivated TIV	Multi-dose vial	Yes	≥ 6 months
		Single-dose pre-filled 0.5 mL syringe or vial	None	≥ 36 months
		Single-dose pre-filled 0.25 mL syringe	None	6-35 months
MedImmune Vaccines, Inc	FluMist™ LAIV	Single-dose nasal spray	None	Healthy persons 5-49 years
Novartis Vaccine (formerly Chiron Corporation)	Fluvirin™ Inactivated TIV	Multi-dose vial	Yes	≥ 4 years
		Single-dose 0.5 mL syringe	<1µg Hg/0.5mL dose, preservative free	≥ 4 years
GlaxoSmithKline, Inc.	Fluarix™ Inactivated TIV	Single-dose pre-filled syringe 0.5 mL	<1µg Hg/0.5mL dose, preservative free	≥ 18 years

Bioterrorism and Animals Continued from page 1

Anthrax, Botulism, Plague and Tularemia are all endemic in Los Angeles County. The Arenaviridae are a family of viruses whose members are generally associated with rodent-transmitted disease in humans. Each virus usually is associated with a particular rodent host species in which it is maintained.

Arenavirus infections are relatively common in humans in some areas of the world and can cause severe illnesses. The first arenavirus, lymphocytic choriomenigitis virus was isolated in 1933 during a study of an epidemic of St. Louis encephalitis.

Category C, the third highest priority, includes emerging diseases, of which about 75% are zoonoses.

There is a tendency to think of bioterrorist agents as orginating from overseas; however, as stated above, the majority of agents in category A are endemic in Los Angeles County.

Los Angeles County Anthrax maps

Anthrax was once common in Los Angeles County. At least twenty-seven animal outbreaks occurred from 1933 - 1962. At one time, all the valley land lying south of Los Angeles and the west end of San Fernando Valley was heavily infected. Livestock deaths occurred in large numbers annually. When the anthrax organism is exposed to air, it produces spores that can survive for over fifty years in the soil. Anthrax maps pinpointing the location of outbreaks were kept by the county veterinarian's office.

All herdsmen whose livestock were in county locations where anthrax was known to existed, were advised to routinely vaccinate their animals for anthrax. Following the use of anthrax vaccine, most outbreaks occurred in those herds that did not vaccinate.

The last outbreak of anthrax in the county was detected in a large beef feedlot in Antelope Valley in 1962. Anthrax was also detected in a small swine ranch in Antelope Valley during the same period. Investigation of the infection revealed that carcasses of the anthrax feedlot cattle had been illegally fed to the pigs.

Food Borne Botulism in Animals

With the advent of adequate preparation of foods, food borne botulism is no longer commonly seen people in the U.S. Nonetheless, it is seen in water fowl and occasional outbreaks are seen in domestic animals. The neurotoxin is one of the most dangerous poisons known. Probably 10,000 – 50,000 wild waterfowl die due to botulism annually in the U.S. Large outbreaks in the Western States may have loss of over a million birds. Typically, the first thing catching the community's attention is a sudden die-off of wild ducks.

Sporadic episodes of botulism occur in wild waterfowl in the county, usually around lakes and marshes where there is relatively shallow water with decaying vegetation from fluctuating shore lines. Affected birds exhibit flaccid paralysis of the neck, which gives rise to the layman's term of "limberneck" for botulism. In affected waterfowl, neck paralysis can lead to drowning. Most infected waterfowl are ducks.

With birds, supportive therapy and antitoxin is usually not practical. In waterfowl die-offs, stabilizing water levels, particularly in shallow waters is a major method in preventing additional deaths. Collection and disposal of dead birds is also important to help limit an outbreak. Maggots feeding on carcasses concentrate the toxin. Ducks that consume toxin-laden maggots can develop botulism after eating as few as 3 or 4 maggots.

Outbreak of botulism in horses due to contaminated hay

The last outbreak of botulism in domestic animals in the county was diagnosed in 1989. The outbreak extended to five California counties, affecting 45 horses. Initially, the press reported the outbreak was due to a mystery disease. Contaminated alfalfa hay cubes shipped to California from Utah were the source of the food borne outbreak in local horses. The hay had been contaminated during the bailing process, when dead rodents were caught in the food. The decaying rodents supplied the toxin. Several thousand tons of the livestock feed was removed from the market.

Clinical signs were weakness and paralysis, and some horses were unable to stand. Several horses at one stable died within a week of consuming the contaminated hay. Many horse owners elected not to administer heroic treatments due to costs and the poor prognosis.

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Bioterrorism and Animals Continued from page 4

Plague common in local wildlife

Plague is another pathogen on the list of agents likely to be used by terrorists. Yersinia pestis is prevalent in Southern California wildlife. The agent is typically transmitted by the bite of an infected flea. It spills over periodically into domestic animals, such as cats that hunt wildlife. An aerosolized plague weapon could result in severe pneumonia within a week of exposure. The pneumonic plague would lead to septic shock, with a high mortality rate, without early treatment.

Plague pneumonia was seen in a local veterinarian in 1984. He had treated a free-roaming cat from a plague endemic area that was coughing up blood. The cat died. The clinic mascot cat, which was exposed to the sick cat, developed plague antibodies following exposure.

Tularemia in Category A occurs locally

Tularemia, also known as rabbit fever, parasitizes various mammals including mice, rabbits, raccoons, rats, and skunks. The name of the disease comes from the geographic area (Tulare County, California) where the organism was first isolated. The disease resembles plague in California ground squirrels and cats. The natural cycle of the causative organism involves maintenance of infection in a wide diversity of animal hosts and in certain hard ticks. Wild rabbits and rodents are highly susceptible to tularemia and have been involved in several outbreaks. The last two human outbreaks of primary pneumonic tularemia reported in the U.S. were on Martha's Vineyard located off the coast of Massachusetts. Wildlife was considered the source of the outbreaks.

The last outbreak of tularemia in the county occurred in July 2006, in a group of primates in Santa Clarita Valley. One of the animals housed outdoors became anorectic and developed a fever. Blood tests on the animal were non-specific. The attending veterinarian considered tularemia and ran confirmatory tests. Samples sent to the CDC were positive for tularemia with a four fold rise between acute and convalescent sera.

Summary

Of the numerous biological agents that can be weaponized, the majority are of animal origin. Animals can provide early warning of a bioterrorism attack, serve as markers for ongoing exposure risk, and amplify or propagate a bioterrorism outbreak.

Advantages of using animals as sentinels include lower cost of studies, shorter latency of disease development and greater ease of obtaining samples. This fact and the growing awareness that animal health and human health are inextricably linked makes cooperation between human and animal health professionals imperative to strengthen the evidence base that will allow for rational use of animal data in public health decision making.

Integrating veterinary and human public health surveillance efforts is essential and the public health infrastructure is looking beyond passive surveillance of acute animal disease events to build capacity for active surveillance and intervention efforts to detect and control ongoing outbreaks of disease in domestic and wild animal populations.

Calls have been made for enhanced veterinary surveillance for outbreaks of animal disease caused by bioterrorism agents and better communication between animal health and human health professionals. This has lead to a growing appreciation of the need for continued collaboration and training of physicians and veterinarians in surveillance of zoonotic illnesses.

Patrick Ryan, DVM, MPH

Chief Veterinarian , Veterinary Public Health and Rabies Control

References

The history and threat of biological warfare and terrorism Emergency Medicine Clinics of North America 20 (2002) 255–271

CDC's Bioterrorism Agents/Diseases http://www.bt.cdc.gov/agent/agentlist-category.asp#b

Raccoons and skunks as sentinels for enzootic tularemia. Emerging Infectious Diseases 2006 Jun;12(6):1019-21 http://www.cdc.gov/ncidod/EID/vol12no06/05-0879.htm

Life-Threatening Complications of TB in AIDS Patients

Since HIV-infected persons can rapidly develop life-threatening complications from TB it is recommended that all patients suspected or confirmed to have active tuberculosis (TB) disease be tested for the human immunodeficiency virus (HIV). Further, the extremely complex nature of managing patients with combination HIV/ TB infection under scores the need for close co-management between providers who care for these patients.

The following cases illustrate some of the complexities in the management of these patients.

A 34-year-old man presented to a private teaching hospital with a history of HIV/AIDS. His last CD4 count was 30, and viral load was 300,000. His medical history was significant for multiple opportunistic infections including cryptococcal meningitis, Pneumocystis pneumonia, and herpes simplex virus. He also had a history of adrenal insufficiency. He presented to the teaching hospital with painful bilateral enlarging groin masses that were unresponsive to a three-week course of doxycycline for presumed lymphogranuloma venereum secondary to *Chlamydia*. At the time of admission, the patient had been diagnosed with pulmonary TB five months prior to admission. Medications upon admission included: tenofovir + emtricitabine, isoniazid (INH), rifampin, azithromycin, fluconazole, acyclovir, prednisone, and trimethoprim/sulfamethoxazole.

Upon admission to the hospital, the patient's temperature was 101.8°F, pulse was approximately 80 beats per minute, and blood pressure was 90-94/46-48 with 20 respirations per minute. The physical exam was remarkable for a right inguinal mass with ulceration, induration, pus and tenderness to palpation. Multiple, loculated, left inguinal masses were also noted, the largest being 3 cm, and all of which were tender to palpation. No discharge was noted from the right groin. The exam was otherwise unremarkable.

Blood work was significant for a mild normocytic, normochromic anemia with thrombocytosis. Ultrasound of both groins was notable for a complex, fluid-filled collection on the right measuring 9 x 9 cm and a complex fluid collection of the left measuring 9 x 8 cm. CT of the abdomen and pelvis done five months prior to admission was noted to show mesenteric lymphadenopathy; peri-aortic, right iliac, and bilateral lymphadenopathy; and a right renal mass.

Further investigation determined the patient had not been on directly observed therapy (DOT) and on self-administered therapy. Numerous acid fast bacilli (AFB) were seen on the specimens taken from the groin lesions. The patient was diagnosed with disseminated TB that was possibly now drug-resistant due to non-adherence to a self-administered TB regimen. Pending repeat culture and susceptibility results, the patient was placed on rifampin, INH, pyrazinamide (PZA), and ethambutol (EMB), and two new drugs (levofloxacin and streptomycin) were added to cover for possible drug resistance.

The second patient is a 35-year-old Hispanic man from Mexico whose medical history is significant for HIV/AIDS (CD4 9) with secondary wasting, alcoholism, liver cirrhosis, history of seizures, and venous thrombosis. In 2005, the patient was admitted to a private hospital and diagnosed with PZA-resistant TB disease. A nucleic acid amplification test for TB was positive in his spinal fluid. Bone marrow biopsy showed non-caseating granuloma. The patient was initially started on INH, rifampin, PZA, and EMB, but liver transaminases rose to over 1,000. Over the next three months, the patient's TB medications were adjusted several times, and five months after he first started, his TB medications were held due to elevated liver function tests. Three months later, the patient presented to another private hospital with persistent

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Complications of TB in AIDS Patients Continued from page 6

headaches. Head CT demonstrated multiple brain lesions consistent with TB disease and uncal herniation. The patient was admitted to the intensive care unit for disseminated PZA-resistant TB with new brain lesions. He was started on a non-hepatotoxic TB regimen and monitored closely.

HIV-infected persons are at elevated risk to become infected with TB and progress from latent infection to active disease once infected. TB cases co-infected with HIV may also develop disseminated and life-threatening forms of TB, particularly if they are severely immunosuppressed.

For these reasons, and as stated above, all TB suspects and cases should be tested for HIV.

HIV-infected persons are additionally at risk for: multiple opportunistic infections, non-adherence to medications due to the complexity of their drug regimens [1], drug interactions particularly related to induction of cytochrome p450 by rifamycins [2], clinical worsening due to immune reconstitution inflammatory syndrome [3], and acquired drug resistance [4].

For all these reasons, DOT for TB and close co-management between the HIV-care provider and public health are the standard of care for HIV-infected TB patients.

Annette T. Nitta, MD
Director, TB Control Program

References:

1. Ann Intern Med 1998;129:503-505.
2. MMWR 2000;49(9):185-189.
3. AIDS 2005;19:1201ff.
4. Am J Respir Crit Care Med 1999;159:468-472.

New Influenza Vaccine Recommendations Continued from page 3

Although the vaccination can be given any time during the fall or winter, it is best to receive it before the flu season begins. Children 6 months - 9 years not previously vaccinated with influenza vaccine should receive 2 doses, at least 1 month apart (6 weeks if receiving live attenuated flu vaccine). Children vaccinated with only one dose of influenza vaccine during the 2005-06 flu season, should only receive one dose of the vaccine this flu season.

FluMist, a live attenuated vaccine, should only be used for healthy persons 5-49 years of age. Use of FluMist for persons in this age range will help extend the supply of inactivated vaccine, which can only be used on persons with medical conditions. This vaccine should not be used for women who are pregnant.

Effective July 2006, California legislation amended the Health and Safety Code, Section 124172, to require that children less than 3 years of age and women who are "knowingly pregnant," be immunized with vaccines containing restricted amounts of thimerosal, a preservative in some vaccines.

Please refer to the attached table for vaccine products that can be used to vaccinate persons in these categories in California this year.

For additional information regarding Influenza please visit: http://www.cdc.gov/flu or call the Los Angeles County Immunization Program at (213) 351-7800.

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References:

1. CDC. ACIP Prevention and Control of Influenza Recommendations. MMWR June 28, 2006.

Physician Registry - Become a Member of the Health Alert Network

The Los Angeles County Department of Public Health urges all local physicians to register with the Health Alert Network (HAN). By joining, you will receive periodic emailed updates alerting you to the latest significant local public health information as well as emerging threats like pandemic influenza and possible bioterrorist activity. Membership is free and all physician information will remain private and will not be distributed to other agencies or used for commercial purposes.

Registration can be completed online at www.lahealthalert.org or by calling (323) 890-8377

Be alert to Public Health emergencies! Enroll now!

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This Issue...

Selected Reportable Diseases (Cases)[1] — April 2006

Disease	THIS PERIOD April 2006	SAME PERIOD LAST YEAR April 2005	YEAR TO DATE – APRIL 2006	YEAR TO DATE – APRIL 2005	YEAR END TOTALS 2005	2004	2003
AIDS[1]	147	139	485	521	1,514	2,213	2,433
Amebiasis	4	8	30	44	120	98	121
Campylobacteriosis	37	50	200	199	725	915	1,100
Chlamydial Infections	3,182	3,356	13,449	13,113	38,862	38,464	36,900
Encephalitis	18	9	24	19	67	137	38
Gonorrhea	872	850	3,645	3,271	10,494	9,696	8,078
Hepatitis Type A	26	8	243	39	470	319	376
Hepatitis Type B, acute	2	4	19	26	56	71	56
Hepatitis Type C, acute	0	0	1	0	3	5	0
Measles	0	0	0	0	0	1	0
Meningitis, viral/aseptic	42	45	149	167	680	790	899
Meningococcal Infect.	7	3	25	14	37	28	32
Mumps	0	0	2	0	8	2	10
NGU	29	124	250	450	1,101	1,470	1,410
Pertussis	13	25	51	94	433	141	130
Rubella	1	0	1	0	1	0	0
Salmonellosis	57	66	243	240	1,077	1,185	995
Shigellosis	12	18	103	148	732	550	669
Syphilis (prim. and sec.)	43	60	186	190	646	470	468
Syphilis latent	20	49	214	176	571	395	388
Tuberculosis	52	54	136	180	906	930	949
Typhoid fever, Acute	0	0	7	4	12	13	16

1. Case totals are provisional and may vary following periodic updates of the database.