Published monthly by the
VIRGINIA DEPARTMENT OF HEALTH
Office of Epidemiology
P.O. Box 2448
Richmond, Virginia 23218
http://www.vdh.virginia.gov
Telephone: (804) 864-8141

VDH VIRGINIA DEPARTMENT OF HEALTH
Protecting You and Your Environment

PRESORTED STANDARD U.S. POSTAGE PAID Richmond, Va. Permit No. 591

VIRGINIA
EPIDEMIOLOGY BULLETIN

Robert B. Stroube, M.D., M.P.H., Health Commissioner
Carl W. Armstrong, M.D., State Epidemiologist
Christopher Novak, M.D., M.P.H., Editor
Vickie L. O'Dell, Layout Editor

November 2006 Volume 106, No.11

Mumps Recommendations

An increase in mumps activity has been noted in Virginia since mid-September. As of December 8, 2006, 105 cases have been investigated throughout the Commonwealth. Based on the Centers for Disease Control and Prevention's (CDC) case definition for disease surveillance, 22 of these cases have been confirmed and 83 are classified as probable based on clinical symptoms. Since September 1, 2006, mumps cases have been reported from 14 health districts: Thomas Jefferson, Henrico, Virginia Beach, Crater, New River, Lord Fairfax, Rappahannock Rapidan, Central Shenandoah, Chesterfield, Fairfax, Arlington, Richmond City, Piedmont, and Peninsula.

As of December 8, 2006, local health departments have investigated mumps cases at six colleges or universities in Virginia. The most mumps activity (58 cases) has been reported in the Thomas Jefferson Health District which includes the University of Virginia. In addition, the Central Shenandoah Health District has reported four cases, three cases have been reported in the Piedmont Health District, and four cases have been reported in the Peninsula Health District.

Most cases have occurred in individuals with two documented doses of mumps-containing vaccine (usually administered as measles-mumps-rubella – MMR). Two doses of vaccine convey protection in 90% of vaccine recipients. Therefore, although Virginia's population is highly immunized, additional cases of mumps are expected based on the current heightened level of mumps activity.

As a reminder, current recommendations are:

- Laboratory Testing:
  - If patient presents within 72 hours after onset of parotitis, collect a buccal sample for viral isolation. Urine is no longer recommended for culture. The Division of Consolidated Laboratory Services (DCLS – the state laboratory) has implemented reverse transcription polymerase chain reaction (RT-PCR) testing using the CDC's methods to directly analyze buccal samples.

In This Issue:

- Collect a serum sample at the time the patient is seen for IgM and IgG testing. The CDC reports that in vaccinated individuals the IgM response may be delayed for up to 35 days after the onset of parotitis. Thus, if the initial IgM is negative, a second sample should be collected at least 10-14 days after the first. Because there are some questions concerning specificity of IgM testing using certain methods, samples should be sent to the CDC (through DCLS) for testing.
- If samples are to be sent to DCLS, please call the local health department. Samples should be kept refrigerated and sent with cold packs. Local health departments should be contacted for additional details regarding collection/shipping.

- Acceptable Presumptive Evidence of Immunity:
  Documentation of adequate vaccination is now two doses of a live mumps virus vaccine instead of one dose for: 1) school-aged children (i.e., grades K-12) and 2) adults at high risk (i.e., persons who work in healthcare facilities, international travelers, and students at post-high school educational institutions).
- Routine Vaccination for Healthcare Workers:
  Persons born during or after 1957 without other evidence of immunity should have two doses of a live mumps virus vaccine. In a non-outbreak setting, persons born before 1957 without other evidence of immunity may be considered vaccinated if they have had one dose of a live mumps virus vaccine.
- Vaccination in an Outbreak Setting (a cluster of at least two cases confirmed by laboratory testing or epidemiologic linkage):
  - Children aged 1-4 years and adults at low risk: if affected by the outbreak, consider a second dose of live mumps virus vaccine.
  - Healthcare workers born before 1957 and without other evidence of immunity: strongly consider recommending two doses of live mumps virus vaccine.

Healthcare professionals should call their local health department to report any suspected cases of mumps—local health department contact information is available at www.vdh.virginia.gov/LocalHealthDistricts.htm.

Virginia Arboviral Activity

West Nile Virus

During the summer of 2006, low levels of West Nile Virus (WNV) were detected in most of the surveyed areas. The exceptions were in several Northern Virginia jurisdictions where surveillance showed relatively high levels of WNV infection in tested mosquitoes, and where four clinical human WNV cases occurred (Fairfax County – two cases; Loudoun County – one case; Prince William County – one case). Additionally, in 2006 an unusually large number of bridge vector mosquito species (*Aedes albopictus*, *Aedes vexans*, and *Culex erraticus*) tested positive for WNV in these Northern Virginia jurisdictions.

In addition to the four clinical human cases, five WNV positive blood donors were detected in Virginia in 2006 (Fairfax County – two donors; Stafford County – one donor; Virginia Beach – two donors). These were all detected from blood drawn between the last week of August and the first two weeks in September. All of these donors were informed of their WNV positive status by the blood collection agencies. However, none of these positive donors are known to have developed clinical symptoms of WNV, so they are not counted as human cases in Virginia. Of note, since its inception the blood screening program in Virginia has previously detected only three other positive donors (two in Fairfax County and one in Roanoke County, both in 2003).

Wild bird surveillance detected only three WNV positive birds (one crow from Arlington County, one crow from Virginia Beach, and a great horned owl from Augusta County). The only equine to have tested positive for WNV this year was stabled in Suffolk and became ill shortly after WNV had been detected in mosquitoes collected in Suffolk.

The heavy rainfall and flooding that came with Tropical Storm Ernesto and cooler temperatures that followed appear to have caused a decline in WNV infection levels in mosquitoes. Therefore, after late September, WNV posed no significant threat to humans, and will not be a concern again until next summer.

Eastern Equine, LaCrosse, and St. Louis Encephalitis

Eastern Equine encephalitis (EEE) was detected in mosquitoes and sentinel chickens in a number of areas in the Tidewater Region, but overall levels of EEE activity were below what has been seen in the past three years and no human cases were reported. As of November 30, 2006, there have been no EEE positive equines reported in Virginia and this is the first year since 2002 that no equine EEE cases have been detected. It is possible that excessively hot, dry weather in the early summer reduced populations of EEE's primary vector mosquito (*Culiseta melanura*) and slowed the amplification of the virus.

As of November 30, 2006, there have been no human cases of LaCrosse Encephalitis (LAC) or St. Louis Encephalitis (SLE) confirmed in Virginia this year.

Submitted by: David Gaines, PhD
Virginia State Public Health Entomologist

Flu Corner

Influenza in Virgina

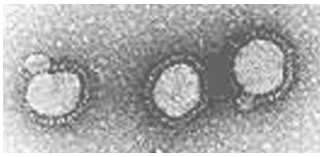
For the week ending December 2, 2006, the Division of Consolidated Laboratory Services (DCLS) reported no positive influenza cases by direct fluorescent antibody test (dFA), reverse transcription polymerase chain reaction (RT-PCR), and/or culture. As of December 2, 2006, DCLS has reported only one confirmed influenza case (type A/H1). No laboratory confirmed outbreaks have been reported thus far. As a result, Virginia influenza activity is currently listed as 'Sporadic' (see box for surveillance definitions).

Overall, in the U.S. for the week ending December 2, 2006, four states reported regional influenza activity, four states reported local influenza activity, 27 states reported sporadic activity, and 15 states have reported no activity. The proportion of patient visits to sentinel providers for influenza-like illness (ILI) and the proportion of deaths attributed to pneumonia and influenza in 122 cities monitored by the U.S. Centers for Disease Control and Prevention (CDC) was below the epidemic threshold. No influenza-associated pediatric deaths have been reported for the 2006-07 influenza season.

During the week ending December 2, 2006, one hundred and six (4.3%) specimens tested by U.S. World Health Organization (WHO) and National Respiratory and Enteric Virus Surveillance System (NREVSS) collaborating laboratories were positive for influenza.

Since October 1, 2006, WHO and NREVSS laboratories have tested a total of 22,677 specimens for influenza viruses and 724 (3.2%) were positive. Among the 724 influenza viruses, 568 (78.5%) were influenza A viruses and 156 (21.5%) were influenza B viruses. One hundred forty-four (25.4%) of the 568 influenza A viruses have been subtyped: 135 (93.8%) were influenza A (H1) viruses and nine (6.2%) were influenza A (H3) viruses.

Ten of the influenza A (H1) viruses have been characterized: eight were A/New Caledonia/20/99-like, which is the influenza A (H1) component of the 2006-07 influenza vaccine. Six (35.3%) of 17 influenza B viruses that have been characterized belong to the B/Victoria lineage of viruses (three were similar to B/Ohio/01/2005, the B component of the 2006-07 influenza vaccine; three showed somewhat reduced titers with antisera produced against B/Ohio/01/2005); the other 11 (64.7%) of the 17 influenza B viruses characterized belong to the B/Yamagata lineage of viruses. However, it is too early in the influenza season to determine which viruses will predominate or how well the vaccine and circulating strains will match.



Please see the CDC website at www.cdc.gov/flu/weekly/fluactivity.htm for up-to-date details on influenza surveillance in the U.S.

Vaccine Update

The CDC has announced that manufacturers are estimating the availability of 115 million doses of influenza vaccine this season. This amount includes 22 million more doses than have been distributed in past seasons. Manufacturers distributed a record 92 million doses by November 17, 2006. Vaccine shipments will continue throughout early December.

Of note, a fourth inactivated vaccine (FluLaval – GlaxoSmithKline) has been approved by the Food and Drug Administration for use in people ≥18 years old. It is sold in 5-mL multi-dose vials. Each 0.5-mL intramuscular dose contains 25 mcg of thimerosal.

National Influenza Vaccination Week (NIVW) occurred from November 27 - December 3, 2006. This event raises awareness of the importance of continuing influenza vaccination efforts through the months of November, December, and beyond. The CDC has provided additional guidance and suggestions for providers at www.cdc.gov/flu/nivw06.htm. This site also includes guidance for healthcare providers who may still be awaiting completion of their vaccine orders.

Influenza Activity Surveillance Definitions

No Activity: Overall clinical activity remains low and there are no laboratory confirmed cases.

Sporadic: Isolated cases of laboratory confirmed influenza in the state and influenza-like illness (ILI) activity is not increased OR a laboratory confirmed outbreak in a single institution and ILI activity is not increased.

Local: Increased ILI within a single region AND recent (within the past three weeks) laboratory evidence of influenza in that region OR two or more institutional outbreaks (ILI or laboratory confirmed) within a single region AND recent (within the past three weeks) laboratory confirmed influenza in that region. Other regions do not have increased ILI and virus activity is no greater than sporadic in those regions.

Regional: Increased ILI in >2 but less than half of the regions AND recent (within the past three weeks) laboratory confirmed influenza in the affected regions OR institutional outbreaks (ILI or laboratory confirmed) in >2 and less than half of the regions AND recent laboratory confirmed influenza in the affected regions.

Widespread: Increased ILI and/or institutional outbreaks (ILI or laboratory confirmed) in at least half of the regions AND recent (within the past three weeks) laboratory confirmed influenza in the state.

Cases of Selected Notifiable Diseases Reported in Virginia*

Disease	Total Cases Reported, October 2006						Total Cases Reported Statewide, January - October		
	State	Regions					This Year	Last Year	5 Yr Avg
		NW	N	SW	C	E			
AIDS	47	4	15	4	10	14	462	517	576
Campylobacteriosis	51	6	15	7	15	8	551	504	544
Chickenpox	116	27	43	16	26	4	1,393	486	473
***E. coli,* Shiga toxin-producing**	16	4	5	2	3	2	141	84	51
Giardiasis	51	13	22	2	11	3	412	467	354
Gonorrhea	610	38	53	85	200	234	5,645	7,016	7,964
Group A Strep, Invasive	4	1	0	2	0	1	114	77	74
Hepatitis, Viral									
A	7	0	4	0	1	2	53	70	99
B, acute	12	0	2	0	6	4	55	118	159
C, acute	2	0	1	1	0	0	8	9	8
HIV Infection	62	4	25	0	12	21	720	652	715
Lead in Children†	62	7	8	15	18	14	577	531	622
Legionellosis	7	0	0	2	4	1	56	37	40
Lyme Disease	26	2	18	1	1	4	237	208	137
Measles	0	0	0	0	0	0	0	0	<1
Meningococcal Infection	0	0	0	0	0	0	16	26	28
Pertussis	19	0	12	0	2	5	174	302	144
Rabies in Animals	53	17	11	10	6	9	523	432	432
Rocky Mountain Spotted Fever	9	2	1	0	5	1	94	95	41
Rubella	0	0	0	0	0	0	0	0	0
Salmonellosis	99	20	30	18	16	15	844	965	1,002
Shigellosis	23	1	14	2	5	1	86	110	347
Syphilis, Early§	42	1	5	0	6	30	303	237	180
Tuberculosis	34	2	23	0	4	5	226	245	228

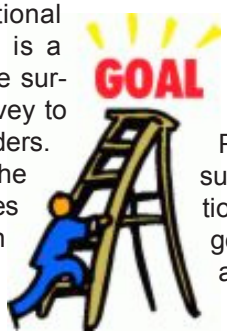
Localities Reporting Animal Rabies This Month: Albemarle 1 raccoon; Augusta 1 groundhog, 1 raccoon, 1 skunk; Bath 1 skunk; Bedford 1 cow, 1 fox; Bland 1 skunk; Campbell 1 raccoon, 1 skunk; Chesapeake 1 raccoon; Clarke 1 raccoon; Culpeper 1 raccoon; Fairfax 3 raccoons; Fauquier 1 cat; Floyd 1 skunk; Fluvanna 1 bobcat; Frederick 1 raccoon; Giles 1 dog; Gloucester 1 raccoon; Halifax 1 raccoon; Hanover 1 skunk; Henrico 1 raccoon; Isle of Wight 1 raccoon; James City 2 skunks; King George 1 raccoon; Loudoun 1 fox, 1 raccoon, 1 skunk; Mecklenburg 2 skunks; Middlesex 1 raccoon; Page 1 skunk; Prince Edward 1 skunk; Prince William 3 raccoons, 2 skunks; Pulaski 1 cat; Roanoke 1 raccoon; Rockingham 1 cow, 1 raccoon; Shenandoah 1 cat, 1 dog, 1 skunk; Virginia Beach 1 fox, 2 raccoons; Wythe 1 skunk.
Toxic Substance-related Illnesses: Adult Lead Exposure 8; Asbestosis 1; Mesothelioma 1; Pneumoconiosis 11.

*Data for 2006 are provisional. †Elevated blood lead levels ≥10µg/dL. §Includes primary, secondary, and early latent.

National Immunization Survey

The Centers for Disease Control and Prevention's (CDC) National Immunization Survey (NIS) is a random-digit-dialing telephone survey followed by a mailed survey to children's immunization providers.

The target population for the NIS is children between the ages of 19 and 35 months living in the United States at the time of the interview. Data provide estimates of vaccination coverage rates for all childhood vaccinations recommended by the Advisory Committee on Immunization Practices (ACIP). This year, the survey assessed rates of completion of series combinations—the goal is: four diphtheria, tetanus, acellular pertussis (DTaP), three polio (IPV), one measles, mumps, rubella (MMR), three *Haemophilus influenzae* B (Hib), three hepatitis B, and one varicella.



Results for 2005 were recently released: Virginia's completion rate for two-year-olds for the series was 81.7 percent, placing Virginia fourth highest in the nation. Congratulations, Virginia healthcare professionals—keep up the great work!