



## West Virginia

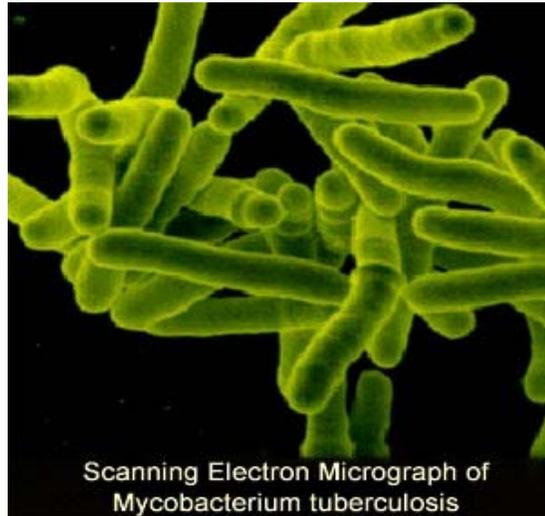
# EPI-LOG

### The coming global challenge: Drug-resistant tuberculosis

The history of tuberculosis in West Virginia mirrors the advances of its treatment. In the early 1940's there were over 2,000 cases of tuberculosis reported in West Virginia. Approximately half that number were confined in specialized TB hospitals scattered throughout the state.

In the early half of the last century approximately 50% of those patients who contracted tuberculosis died of the disease. The other half of those afflicted were consigned to years of sanatoria or home confinement. Primarily through natural defenses, cure was affected.

Profound changes in tuberculosis treatment awaited the development of effective drug treatment. In the late 1940's and early 1950's nearly all of the tuberculosis could be cured provided the treatment could be effectually delivered. This golden era, however, was short-lived. It became apparent in the 1980's that in the United States there was an alarming



Scanning Electron Micrograph of  
*Mycobacterium tuberculosis*

(See *Tuberculosis*, page 5)

## Statewide Disease Facts & Comparisons

A quarterly publication  
of the West Virginia  
Division of Surveillance  
and Disease Control

### IN THIS ISSUE:

- Drug-resistant tuberculosis
- AIDS journalist Stephanie Nolen to speak
- Influenza: The last season and next
- 2006 infectious disease incidence
- 2007 Infectious Disease Conference

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Cancer Registry	(304) 558-6421
Epidemiology	(304) 558-5358
Immunization	(304) 558-2188
STD Program	(304) 558-2950
TB Control	(304) 558-3669



Joe Manchin III, Governor  
Martha Walker, Secretary (DHHR)

## Noted AIDS journalist Stephanie Nolen to speak at November conference on infectious diseases

Internationally acclaimed Canadian born author and award winning journalist Stephanie Nolen will be the featured speaker for the 2007 West Virginia Conference on Infectious Diseases set for November 15 and 16 at the Charleston Marriott Town Center sponsored by the West Virginia Department of Health and Human Resources' Division of Surveillance and Disease Control.



Nolen is internationally recognized for her reporting in more than 40 countries around the world including two dozen in Africa. She has covered world issues such as the HIV/AIDS pandemic in Africa, the wars in Sudan, the political crisis in Zimbabwe and the peace process in Sierra Leone.

Nolen received the National Newspaper Award for International Reporting in 2003 and 2004 for her coverage on AIDS in Africa and for her reporting on the aftermath of Rwanda's genocide. This was the first back-to-back win by any reporter in more than 20 years. During those same years, Nolen also received both the 2003 and the 2004 Amnesty International Award for Human Rights Reporting for her work in Africa.

During her career, Nolen has written articles for Toronto's Globe and Mail, Newsweek, Independent of London, Ms., and Elle.

She has authored several books including 28: Stories of AIDS in Africa, which the Observer in London calls "Brilliant;" Shakespeare's Face: Promised the Moon; and AIDS in Africa: A Turning Point.

Nolen will be one of seven guest speakers on tap for the two-day infectious disease conference which will cover topics such as food borne illness, TB and the media, vaccine-preventable diseases and HIV/AIDS.

For more information about the West Virginia Conference on Infectious Diseases contact Toby Wagoner at 558-6438 or Jay Ripley at 345-9051. ☒

**More information  
about the 2007 West  
Virginia Conference  
on Infectious Dis-  
eases on page 7.**

### PERSONNEL NOTES

## Division of Surveillance and Disease Control, HIV/AIDS/STD Program get new directors

Dr. Caroline Williams has just joined the Division of Surveillance and Disease Control as the Director of the HIV/AIDS/STD Program in September. She received her medical degree from West Virginia University School of Medicine. She completed her residency training in family medicine at Charleston Area Medical Center. She also received a Bachelor of Arts in Psychology, Bachelor of Science in Biology and an Associate of Arts Degree in Nursing from Morris Harvey College and worked for Charleston Area Medical Center as a registered nurse. Dr. Williams is licensed to practice medicine in the State of West Virginia. She had a private practice in Charleston and was employed by Hospice Care where she served as Assistant Medical Director.

Susan Hall was hired as the Assistant Director of the HIV/AIDS/STD Program in February. She received her Master of Arts Degree in Counseling from Marshall University. She also received a Bachelor of Science Degree in Therapeutic Recreation from West Virginia State College. Ms. Hall joins us after serving as the Program Manager of the Division of Mental Retardation/Developmental Disabilities. She was previously employed by Pretera Center where she served as the Director of Crisis/Day Treatment and Shawnee Hills where she served in many capacities, including Director of Adult Services. ☒

## Influenza surveillance A 2006-2007 summary and plans for the coming season

The 2006-2007 influenza season was a mild one, as was the previous 2005-2006 season. Concerns about avian influenza A (H5N1) were ever present but no cases were reported in the United States. By the end of August, 2007, the World Health Organization website reported the cumulative number of confirmed cases of human influenza A (H5N1) in the world to be 327, with 199 deaths.

The 2006-2007 influenza vaccine contained:

- An A/New Caledonia/20/99 (H1N1)-like virus
- An A/Wisconsin/67/2005 (H3N2)-like virus (A/Wisconsin/67/2005 and A/Hiroshima/52/2005 strains)
- A B/Malaysia/2506/2004-like virus (B/Malaysia/2506/2004 and B/Ohio/1/2005 strains)

West Virginia employs a variety of methods for influenza surveillance:

Reporting of influenza-like illness (ILI) by providers is required by law. Local health departments compile these numbers from their providers and report them weekly to West Virginia Department of Health and Human Resources. ILI is defined as: Fever ( $=100^{\circ}$  F [ $37.8^{\circ}$  C]), oral or equivalent) -AND- cough and/or sore throat (in the absence of a known cause other than influenza).

Laboratory reporting is also required by law. Laboratories which perform influenza cultures compile aggregate total numbers and send this information to WVHDHR on a weekly basis. Office of Laboratory Services offers testing for sentinel providers, health departments and outbreak investigation. All positive influenza A cultures are sub-typed at OLS and selected specimens are referred to the Centers for Disease Control and Prevention for further antigenic characterization to determine vaccine strain.

Sentinel providers are volunteer physicians and

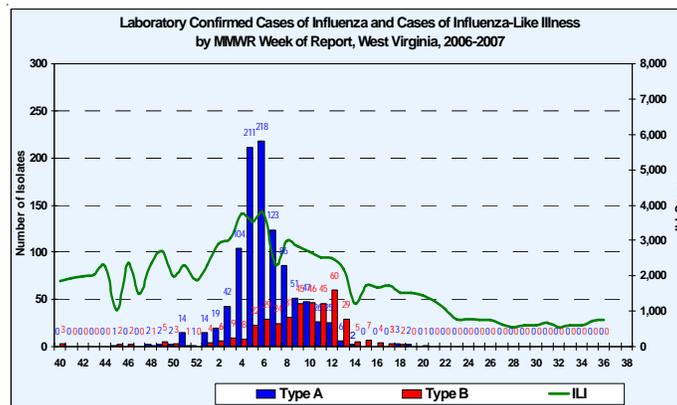
other practitioners who collect nasopharyngeal specimens on patients who meet the case definition for ILI. Specimens are referred to OLS for testing. They also report aggregate total cases of ILI to the CDC via the internet.

Local health departments and regional epidemiologists report outbreaks of ILI, as required by law. Outbreak investigation includes laboratory confirmation at OLS.

Influenza activity in the United States peaked in mid-February and continued to decrease during week 20 (May 13-19, 2007), the official "end" of surveillance for seasonal influenza in the United States. The percentage of visits for ILI to sentinel providers decreased during week 20 and was below the national baseline for the ninth consecutive week. The percent of deaths due to pneumonia and influenza remained below baseline levels for the entire influenza season to date.

During the 2006-07 influenza season in the United States, Influenza A (H1) viruses were predominant overall, influenza A (H3) viruses were reported

more frequently than influenza A (H1) viruses after February. The 2006-07 West Virginia influenza season's peak for influenza A occurred in week 6 (February 4 through 10, 2007) and for influenza B occurred in week 12 (March 18-24, 2007). The majority of the culture-confirmed cases were influenza A (see chart).



Of the 139 specimens submitted to the Office of Laboratory Services in South Charleston, West Virginia, for testing during the 2006-07 influenza season, 48 were culture-confirmed Influenza A (40 were influenza A (H1), six were influenza A (H3), one was influenza A, and one was influenza A and B.

Thirteen specimens were culture-confirmed in-

(See *Influenza*, page 4)

*(Influenza, continued from page 3)*

fluenza B. One specimen tested positive for adenovirus.

Fifty-seven specimens were negative. Fifteen specimens were presumed negative: sample was over 3 days old or the transport media was out of date. Sometimes these specimens are run and yield a viable virus. Five specimens were unsatisfactory for testing because of excessive time in transport.

West Virginia currently has 63 sentinel providers. Twenty-eight (44%) reported at least half of the weeks during the 2006-07 influenza season. The top four sentinel providers submitting specimens to OLS were Upper Kanawha Medical Center (28), Monroe Health Center (23) Lenore Medical clinic (21) and William Mercer, MD (15).

Only one culture-confirmed outbreak of influenza B was reported during the 2006-07 influenza season in a nursing home in Fayette County.

Additional surveillance data are available at: <http://www.wvdhhr.org/IDEP/a-z/a-z-influenza.asp>

The Food and Drug Administration's Vaccines and Related Biological Products Advisory Committee recommended that the 2007-08 trivalent influenza vaccine for the United States contain:

- An A/Solomon Islands/3/2006 (H1N1)-like virus;

- An A/Wisconsin/67/2005 (H3N2)-like virus;
- A B/Malaysia/2506/2004-like viruses.

This represents a change only in the influenza A (H1N1) component. A/Solomon Islands/3/2006 is a recent antigenic variant of the 2006-07 vaccine strain A/New Caledonia/20/99. The influenza A (H3N2) and influenza B components remain the same.

All sentinel providers are encouraged to continue collecting and reporting ILI data to the CDC each week for all 12 months of the year. They are also encouraged to submit specimens to OLS for testing all year long.

Year-round influenza surveillance provides a baseline level of influenza during the summer months. This data has the potential to become an important component of early detection for an influenza pandemic or other unusual occurrence of ILI.

One of the best ways to recruit flu sentinel providers is to make a personal visit to the provider's office or clinic to explain and emphasize the importance of ILI surveillance and his/her participation. Any primary

health care provider can participate in this program. Family practice residents can complete their research requirements by participating in the CDEC sentinel provider surveillance system.

During the 2007-2008 influenza season, we will be making site visits to at least 10 sentinel providers and offering incentives to top reporters. In addition, we are hoping to do a formal evaluation of the flu surveillance program.

You may go to the website: <http://www.wvdhhr.org/IDEP/a-z/a-z-influenza.asp> to obtain more information about sentinel provider enrollment and the required forms. The Influenza Surveillance and Response Protocol is also available at this website.

Current guidelines on the management of influenza outbreaks may also be found at the CDC Morbidity and Mortality Weekly Report (MMWR) website: <http://www.cdc.gov/mmwr/preview/mmwrhtml/rr55e628a1htm>. ☒

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## NEHA Epi-Ready Team Training Workshop Scheduled

The Division of Surveillance and Disease Control's Infectious Disease Epidemiology Program will be sponsoring a three-day Epi-Ready Team Training session on December 4, 5, and 6, 2007 at the Capitol Conference Center on Capitol Street in Charleston.

This training initiative, developed by the National Environmental Health Association (NEHA) in cooperation with the Centers for Disease Control and Prevention (CDC) and numerous federal, state, and local agencies, provides the most current, scientifically-based food-borne disease outbreak investigation and surveillance training available.

Who should attend? Anyone involved in food-borne disease outbreak investigation and surveillance. Examples include sanitarians, nurses, epidemiologists, laboratory personnel, and other public health officials.

Participants can register for this training at <http://www.wvdhhr.org/bphtraining>. Only one participant per local health department may attend.

For more information contact the Division of Surveillance at Disease Control at 304-558-5358 or within West Virginia at 1-800-423-1271. ☒

*(Tuberculosis, continued from page 1)*

number of individuals whose tuberculosis was resistant to the principle drugs that were used in its management. In metropolitan areas such as New York City or Miami, tuberculosis was being caused by germs that were resistant to the primary antitubercular medications. As many as 15% of the new cases of tuberculosis were, in effect, untreatable with available drugs, reliving and re-visiting the 50% mortality of the previous era.

Review of these developments led to the realization that several factors were responsible: lax treatment supervision, lapse in care by inadequately trained physicians, decreased funding for TB services, and failure to confine the uncooperative patients. This resulted in the emergence of naturally resistant tuberculosis organisms. The increase of immigration to the United States from Latin America and southeast Asia, increase in illicit drug use, and the emergence of HIV have also contributed to the problem of drug resistance. Treatment of these groups presented new challenges to effective TB treatment.

With these discoveries, the United States hastily re-established public health control, surveillance and treatment. To insure completion of prescribed therapy, directly observed treatment became the standard of care. It was clear that tuberculosis was a moving target and that constant vigilance was necessary for its effective control and eventual elimination.

In the spring of 2007, Andrew Speaker, an attorney in Atlanta, became a persona celebre when, upon his return from world traveling in endemic areas of tuberculosis, he was found to have XDR-TB, a variety that was determined to be resistant to most of the effective first line drugs as well as some second line drugs. With this resistant tuberculosis, Mr. Speaker traveled from the United States to Europe and then back to the United States through Canada. The American public was quickly brought up to speed to the realization that "TB anywhere is TB everywhere". It was further impressed upon the American people that treatment of resistant tuberculosis is different from the usual susceptible tuberculosis that we had previously experienced. It would require in-patient hospital confinement, treatment with toxic drugs, possible lung resection, and a treatment duration of 2-3 years; all of this at a cost of nearly \$500,000.00. Mr. Speaker did more to raise the awareness of the tuberculosis threat in two weeks than a host of epidemiologists had been able to accomplish

in twenty years. As a result, favorable federal legislative initiatives were enacted.

Worldwide there are 9,000,000 new cases of tuberculosis each year. Unfortunately, nearly 500,000 cases are due to multiple drug resistant or extensively drug resistant organisms. These cases are, to a great extent, in eastern Europe, southeast Asia and sub-Saharan Africa. In these large areas, anywhere from 10 to 50% of new cases of tuberculosis are resistant to the primary drugs used in the treatment of tuberculosis. However, no part of the globe is immune from resistant tuberculosis which is principally brought about by an inadequate public health infrastructure dedicated to find, supervise, and complete a course of modern therapy. The problem also exists in the United States where 1% of new cases and 5% of those that require re-treatment have multiple drug resistance. It is not lost upon the American public health community that without rigorous management of tuberculosis a raging epidemic of drug resistance can develop, as has occurred in South Africa.

To face this potential worldwide pandemic, West Virginia must prevent the development of drug resistant tuberculosis by rigorous treatment of its tuberculosis caseload. This state must also maintain a strong infrastructure in order to handle any drug resistant tuberculosis that is brought into the state from distant lands. ❖

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## Avian influenza rapid response conference slated

Mark your calendars! The West Virginia Bureau for Public Health (BPH) and the WV Department of Agriculture are co-sponsoring a training conference entitled Avian Influenza Rapid Response for the State of West Virginia on January 9-10, 2008 at Moorefield, WV, and on January 30-31, 2008 at Flatwoods, WV.

These conferences will be geared toward representatives of the poultry industry, Department of Agriculture, Bureau for Public Health and Department of Agriculture laboratories, regional epidemiologists, infectious disease nurses and epidemiologists, law enforcement and representatives from local health.

For more information contact the Division of Surveillance at Disease Control at: 304-558-5358 or within West Virginia at 800-423-1271. ❖

## INFECTIOUS DISEASE INCIDENCE, 2006

## Confirmed and Probable Cases by Month Reported to WVEDSS

(Final)

January 1 to December 31, 2006

West Virginia

This report includes only those cases reported to WVEDSS for which case status has been confirmed by the West Virginia Bureau for Public Health

Condition	MONTH REPORTED												TOTAL
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	
Amebiasis	0	0	0	0	0	0	0	1	0	0	0	0	1
Animal Bites	66	89	92	123	136	133	106	155	158	114	69	63	1283
Botulism - Infant	0	0	0	1	0	0	0	0	0	0	0	0	1
Campylobacteriosis	11	6	6	7	8	10	20	12	8	14	15	3	120
Cryptosporidiosis	4	4	1	0	1	0	1	2	1	2	2	2	20
Encephalitis, LaCrosse (California Group)	0	0	0	0	0	0	2	3	11	0	1	1	18
Enterohemorrhagic E. coli (EHEC)	0	0	0	0	0	0	6	2	3	1	4	1	17
Giardiasis	1	2	10	3	4	2	2	6	3	8	10	6	57
Haemophilus influenzae, Invasive Disease	3	6	4	1	0	0	2	2	3	2	1	3	27
Hemolytic Uremic Syndrome, Postdiarrheal	0	0	0	0	1	0	0	0	0	1	0	0	2
Hepatitis A, Acute	0	0	1	0	3	0	0	1	0	1	0	0	6
Hepatitis C, Acute	2	0	3	2	0	1	2	0	3	5	5	2	25
Legionellosis	1	2	0	0	1	2	3	0	4	5	0	2	20
Leptospirosis	0	0	0	0	0	0	1	0	0	0	0	0	1
Listeriosis	0	1	1	0	0	1	2	1	2	1	2	3	14
Lyme Disease	7	6	0	0	0	2	4	2	4	1	2	0	28
Malaria	0	1	0	0	0	0	1	0	0	0	0	1	3
Meningococcal Disease, Invasive	0	0	0	0	2	1	1	1	0	3	1	2	11
Mumps	2	1	0	2	8	3	3	2	0	1	0	2	24
Pertussis	6	5	4	3	4	11	2	7	8	5	6	5	66
Rocky Mountain Spotted Fever	1	0	0	0	1	0	0	2	0	0	0	0	4
Salmonellosis	5	11	12	9	7	14	13	32	17	23	20	8	171
Shigellosis	0	0	0	0	0	1	1	0	2	0	1	0	5
Streptococcal Disease, Group A Invasive	3	4	2	4	5	2	1	2	2	0	2	2	29
Streptococcal Disease, Group B Invasive	4	6	6	6	4	6	3	8	9	6	6	7	71
Streptococcal Toxic Shock Syndrome	1	1	1	3	2	0	0	0	0	0	0	1	9
Streptococcus pneumoniae, Invasive - (>=5 years old) drug resistant	17	15	15	22	12	10	7	3	2	4	10	5	122
Tularemia	0	0	0	0	0	0	0	0	1	0	0	0	1
West Nile Virus	0	0	0	0	0	0	0	1	0	0	0	0	1
Yersinia Enterocolitica	0	0	0	0	0	1	0	0	0	0	0	0	1
<b>TOTAL</b>	151	161	184	208	226	214	206	254	263	219	181	137	2198

**2007 West Virginia Conference on Infectious Diseases**  
**November 15 - 16, 2007**  
**Charleston Marriott Town Center**  
**Charleston, West Virginia**

*Presented by West Virginia Bureau for Public Health  
Division of Surveillance and Disease Control  
& CAMC Institute*

**Thursday, November 15**

- 7:30 a.m. Registration, Exhibit Visitation, and Breakfast
- 8:00 a.m. Welcome (Dr. Loretta Haddy, DSDC Director, State Epidemiologist)
- 8:15 a.m. Pneumococcal Disease (Dr. Adam Cohen, CDC)
- 9:15 a.m. Food borne Illness (Dr. Arthur Liang, NCVED)
- 11:00 a.m. Keynote (Stephanie Nolen, Award Winning Journalist and Author)
- 12:00 p.m. Question & Answer with Stephanie Nolen
- 12:30 p.m. Lunch
- 1:30 p.m. Stephanie Nolen Book Signing
- 2:15 p.m. XDR-TB (Dr. Peg Tipple, CDC)
- 3:15 p.m. TB & The Media (Maria Fraire, CDC)
- 4:00 p.m. Evaluation & Adjournment

**Friday, November 16**

- 8:15 a.m. Registration, Exhibit Visitation, Breakfast
- 8:55 a.m. Program Announcements & Introductions
- 9:00 a.m. Varicella & Shingles (Dr. Meredith Reynolds, CDC)
- 10:00 a.m. Question and Answer Session
- 10:30 a.m. HIV/AIDS (Dr. Bill Ruby, Gilead)
- 11:30 a.m. Question & Answer
- 12:00 p.m. Evaluation & Adjournment

**Conference rate lodging available at the Marriott Hotel (304) 345-6500**

**\*\* Continuing Education Credits Available \*\***

**For more information call Jay Ripley at (304) 388-9964 or Toby Wagoner at (304) 558-6438.**

*The West Virginia EPI-LOG is published quarterly by the West Virginia Department of Health and Human Resources, Bureau for Public Health, Office of Epidemiology & Health Promotion, Division of Surveillance and Disease Control. Graphic layout by Chuck Anziulewicz. Please call the Division of Surveillance & Disease Control at (304) 558-5358 if you need additional information regarding any article or information in this issue, or if you have suggested ideas you would like to contribute for a future issue.*

**West Virginia Department of Health and Human Resources -  
Bureau for Public Health - Division of Surveillance and Disease Control**