



West Virginia

EPI-LOG

Influenza season in West Virginia: A 2004-2005 summary

Background

The 2004-2005 Influenza Season faced many challenges ranging from the public health response to unexpected vaccine shortages at the beginning of the season to reports of deaths from avian influenza in Southeast Asia. The previous influenza season, the 2003-2004 Influenza Season, had been particularly difficult nation-wide with a severe early onset peaking in the late fall and many pediatric deaths. The vaccine shortages at the beginning of the 2004-2005 Influenza Season required that public health, nationally and locally, set guidelines and diligently manage the distribution of influenza vaccines to those populations most at risk for severe disease from influenza. Influenza surveillance is key to monitoring which populations are most affected (e.g., old/young, rural/urban, etc.), and specifically, which influenza strains are causing disease. The vaccine shortage early in the 2004-2005 Influenza Season and the



(See *Influenza*, page 5)

Statewide Disease Facts & Comparisons

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

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

The light at the end of the tunnel?**Progress seen in tuberculosis elimination in West Virginia and the United States**

Many people think that tuberculosis (TB) is a disease of the past - an illness that no longer threatens us today. One reason for this belief is that, in the United States, we are currently experiencing a decline in TB and are at an all-time low in the number of persons being diagnosed with active TB disease.

However, that very success makes us vulnerable to the complacency and neglect that come with fewer persons suffering with TB. But it also gives us an opportunity to eliminate TB in this country. Now is the time to take decisive actions, beyond our current efforts, that will ensure that we reach this attainable goal of TB elimination.

The Price of Neglect

In the 1970s and early 1980s, the nation let its guard down and TB control efforts were neglected. The country became complacent about TB, and many states and cities redirected TB prevention and control funds to other programs.

Consequently, the trend toward elimination was reversed and the nation experienced a resurgence of TB, with a 20% increase in TB cases reported between 1985 and 1992. Many of these were persons with difficult-to-treat drug-resistant TB.

Back on Track Toward TB Elimination

The nation's mobilization of additional TB resources in the 1990s has paid off:

- We are now at an all-time low in reported TB cases, with 12 consecutive years of decline.
- In 2004, there were 14,511 persons with TB disease reported in the United States, declining 3.3% from 14,874 cases in 2003.
- However, 2003 and 2004 marked the smallest annual decline in new TB cases since 1993. These data raise concerns that increased efforts will be required to maintain the progress made in controlling TB.
- In 2004, West Virginia saw a slight rise in new TB cases from 2003.
- In 2004 there were 24 persons with TB disease reported in West Virginia, a 14% increase over the 21 cases reported the previous year.

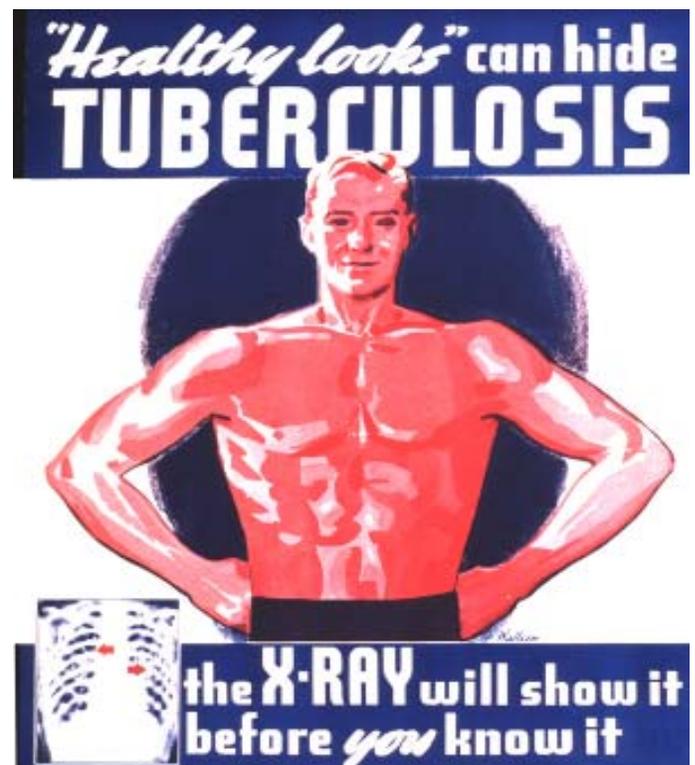
TB Poses Greater Challenges Than Ever Before

Trends suggest that the nation continues to advance toward TB elimination. However, TB still poses great challenges that must be overcome, or we risk experiencing another resurgence of the disease and losing our hard-won gains. Several challenging factors include the increasing impact of the global TB epidemic on the United States, the continued threat of multidrug-resistant TB (MDR TB), the disproportionate burden of TB in minorities, and the enormous reservoir of persons with latent TB infection.

The Global Epidemic

Worldwide, there are approximately 9 million new cases of TB and more than 2 million TB-related deaths each year. In this country, an increasing proportion of persons with TB were born in areas of the world where TB is

*(See **Tuberculosis**, page 3)*



Vintage TB prevention advertisement

(Tuberculosis, continued from page 2)

common. These areas include Asia, Africa, and Latin America. In 2004, slightly more than half (53.7%) of the total cases in the United States occurred in foreign-born persons. In addition, the case rate among foreign-born persons is now almost nine times higher than among U.S.-born persons.

The Threat of Multidrug-Resistant TB

Multidrug-resistant TB (MDR TB) is TB disease caused by bacteria that are resistant to drugs commonly used for treatment. Persons with MDR TB remain sick much longer and may never recover from their illness.

MDR TB is also extremely difficult and costly to treat. It has been estimated that one case can cost up to \$1.3 million.

During 1993 to 2003, the most recent year for which drug-susceptibility data are available, 47 states and the District of Columbia reported cases of MDR TB. In 2003, 0.9% of people in the United States with culture-positive TB had MDR TB. Fortunately, there were no new reported cases of MDR TB in West Virginia in 2004.

The Disproportionate Burden of TB in Minorities

In 2004, TB rates greater than the U.S. average continue to be reported in certain racial/ethnic populations; in 2004, Hispanics, blacks, and Asians had TB rates 7.5, 8.3, and 20.0 times higher than whites, respectively. Several factors likely contribute to the disproportionate burden of TB in minorities:

- Among people from countries where TB is common, TB disease may result from an infection acquired in their home country.
- Among racial and ethnic minorities, unequal distribution of TB risk factors, particularly HIV infection, can also increase the chance of developing the disease.

The Reservoir of Latent TB Infection

There are an estimated 9 to 14 million persons in the United States infected with *M. tuberculosis*.

On average, 10% of these infected individuals will develop active TB disease at some point in their lives.

However, some underlying conditions, such as HIV infection and diabetes, increase the risk that latent TB infection will progress to active TB disease.

Groups at Higher Risk for TB Exposure or Infection

Some persons are more likely to be exposed to or infected with TB than the overall population. This includes people from countries where TB is common, residents of correctional facilities, people who are homeless, residents of long-term care facilities, and health care workers.

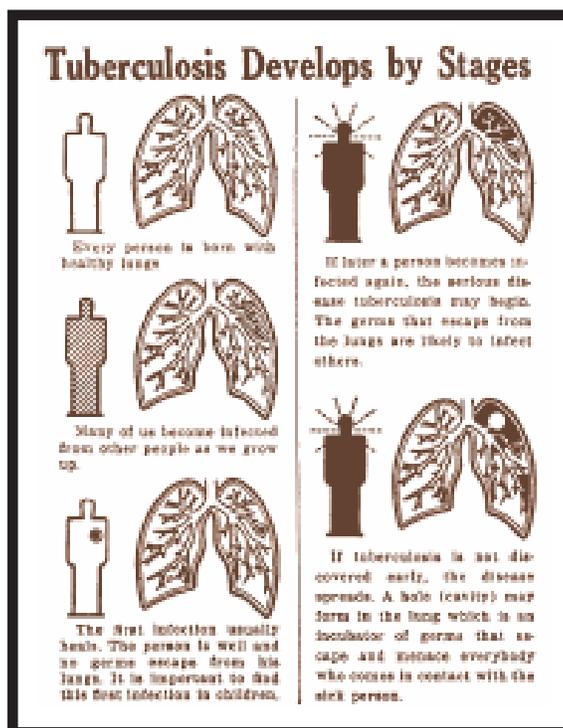
Residents of the United States Born Outside This Country: One of the most dramatic changes in TB epidemiology over the past decade has been the impact of foreign-born persons on the incidence of TB within the United States. For example, TB cases continue to decline nationally;

however, the overall decrease in TB cases during 1993 to 2004 was primarily due to a 64.6% decrease in the number of cases among U.S.-born persons. In contrast, the total number of TB cases in this country among residents born outside the United States has remained at approximately 7,000 to 8,000 cases each year.

TB case rates in foreign-born persons remain substantially higher (almost nine times) than those in the U.S.-born population. During 1993 to 2004, the case rate in U.S.-born persons decreased from 7.4 TB cases per 100,000 population to 2.6, whereas the rates for people born outside the U.S. decreased from 33.6 TB cases per 100,000 population to 22.5.

Risk factors for TB in U.S.-born patients (including substance use, homelessness, residence in a correctional facility, and HIV co-infection) are less commonly found in

(See Tuberculosis, page 4)



(Tuberculosis, continued from page 3)

foreign-born TB patients. The most important risk factor for TB among foreign-born patients is previous residence in an area with a high rate of TB.

Residents of Correctional Facilities: Correctional facilities (e.g., jails and prisons) report 400 to 500 cases of TB per year, accounting for 3% to 4% of annual cases.

Homeless: Approximately 800 to 900 TB cases are reported among the homeless each year, accounting for 6% of annual cases.

Residents of Long-term Care Facilities: CDC receives 300 to 400 reports each year of TB cases among residents of long-term care facilities (e.g., nursing homes), accounting for 2% to 3% of annual cases.

Health Care Workers: In recent years, CDC has received 300 to 400 reports each year of TB disease among health care workers, representing 2% to 3% of annual cases.

Groups at Higher Risk for TB Disease Once Infected

TB is a serious threat to people with weakened immune systems. In most people with normal immune systems, the TB bacteria can be controlled by the body's immune system and these people may never get sick. However, in people with weakened immune systems, the TB bacteria may not be kept in check; as a result, they are much more likely to develop active TB disease. This high-risk group includes people with HIV infection, people with other specific medical conditions (such as diabetes or cancer), and people who inject illicit drugs. Among people with TB infection, HIV is the strongest known risk factor for progressing to active TB disease.

HIV and TB Coinfection: In 1993, CDC began collecting information on HIV status for persons with TB disease. Reporting of this information has been limited. About half (51%) of TB case reports include HIV test results. CDC is working with state and local health departments to improve reporting of this information, particularly in people aged 25 to 44. During 1993 to 2002,* the estimated percentage of HIV coinfection in persons of all ages with reported TB decreased from 15% to 9% overall and from 29% to 16% in persons aged 25 to 44. Much of the decline may be a result of intensified TB control efforts to interrupt transmission since 1992. (*2002 is year of latest available data)

By Race/Ethnicity: In 2004, for the first time, TB was reported more frequently among Hispanics than among any other racial/ethnic population. The number of cases in

Hispanics increased 1.2%, from 4,109 in 2003 to 4,160 in 2004. However, the TB rate for Hispanics decreased, from 10.3 in 2003 to 10.1 in 2004. The increase in case counts, but decrease in rates, reflects a 3.6% increase in the 2004 U.S. population of Hispanics compared with 2003. For blacks, whites, and Asians, the case numbers and rates both decreased. Of 3,221 Asians with TB and known origin of birth, 3,074 (95.4%) were foreign born; of 4,105 Hispanics with TB, 3,037 (74.0%) were foreign born; and, of 3,981 blacks with TB, 1,055 (26.5%) were foreign born.

By State: TB morbidity varies considerably by geographic location. During 2004, a total of 30 (58.8%) states reported a decline in cases from 2003. Seventeen states and DC reported an increase in cases, and three states reported the same number of cases as in 2003. Seven states reported more than 400 cases each in 2004; collectively these states accounted for 8,689 cases, or 59.9% of the national case total. Of these seven states, two reported increases for 2004 (Texas, 4.0% and Florida, 1.0%); the other five states reported decreases (California, 8.4%; Georgia, 2.5%; Illinois, 10.9%; New Jersey, 3.3%; and New York, 7.3%).

There has been a significant decline in newly diagnosed cases of TB in WV from 1992, with 92 new TB cases and an incidence rate of 5.2% in 30 counties, to 2004, with 24 newly diagnosed cases and an incidence rate of 1.3% in only 14 counties. West Virginia reported a slight increase of cases in 2004 with 24, from the 21 new cases seen in 2003. In 2004 in WV, there were 3 (12.50%) Hispanics diagnosed with TB, 1 Asian (4.17%), and 2 (8.33%) African Americans. There were 3 foreign born individuals diagnosed with TB in WV in 2004. Of the 24 newly diagnosed, 7 (29.17%) reported to using alcohol in excess in the past year.

By Sex: Throughout history, TB has had a disproportionate impact on men. In 2003, 61% (9,114) of TB cases occurred among men, and 39% (5,754) occurred among women. The rate of TB for men (6.4 cases per 100,000) also exceeded that of women (3.9 per 100,000). In WV, 66.67% of TB cases occurred among males and 33.33% among females.

By Age Group: Currently, the greatest proportion of TB cases occur among persons aged 25 to 44. Looking at the last decade, two trends by age group emerge: HIV infection and immigration.

During 2004, WV had no cases of TB diagnosed in the 25 to 44-year-old age group. There were 4 (16.67%)

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(Influenza, continued from page 1)

continuing fear of an influenza pandemic equaling that of the Spanish Flu Pandemic in 1917-1918, emphasized the importance of influenza surveillance in the public health effort to meet the needs of the general public in preventing severe and widespread disease.

Methods

Influenza surveillance in West Virginia involves several different systems and many different partners in order to capture the most complete data. The Infectious Disease Epidemiology Program (IDEP) has an Influenza Surveillance Coordinator who works with partners in community health clinics and hospitals, county health departments, diagnostic laboratories, other WVDHHR agencies, and the Centers for Disease Control and Prevention (CDC). The IDEP Influenza Surveillance Coordinator assists in local and national monitoring of influenza and influenza-like illness through the following surveillance systems: 1) sentinel provider; 2) sentinel laboratory; and 3) county health department/regional epidemiologist. Sentinel providers are health care providers who volunteer to report to the CDC each week the number of patients seen with influenza-like illness. Sentinel laboratories (i.e., the Bureau for Public Health's Office of Laboratory Services, Charleston Area Medical Centers, West Virginia University Ruby Memorial Hospital, and Cabell-Huntington Hospital) also have volunteered to report to the CDC and IDEP the number of culture positive samples received. In addition, the Office of Laboratory Services (OLS) receives nasal swab samples from sentinel providers and sends culture positive samples to the CDC laboratories for further strain-typing. County health departments and regional epidemiologists send IDEP a weekly report giving the number of patients with influenza-like illness seen by local health care providers and report any outbreaks in schools, nursing homes, or other institutions.

Findings

The 2004-2005 Influenza Season was a fairly typical season in that the season's peak occurred at the end of February and the majority of samples submitted were culture-confirmed Influenza A positive (see Figures 1-3). The 2004-2005 Influenza Season (Fig. 1, pink line) is very similar to the 2002-2003 Season Influenza (Fig. 1, yellow line) in the number and pattern of cases reported. As previously mentioned, the 2003-2004 Influenza Season (Fig. 1, green line) had an early spike in cases reported by the counties. Figure 2 indicates that the number of cases reported by the

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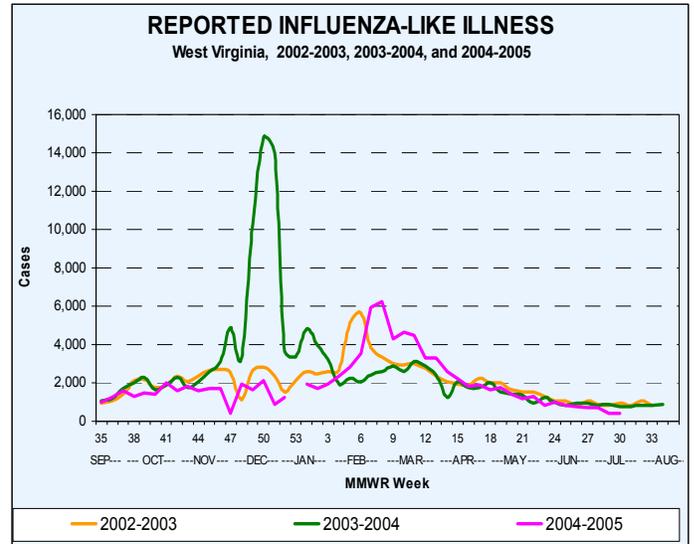


Figure 1

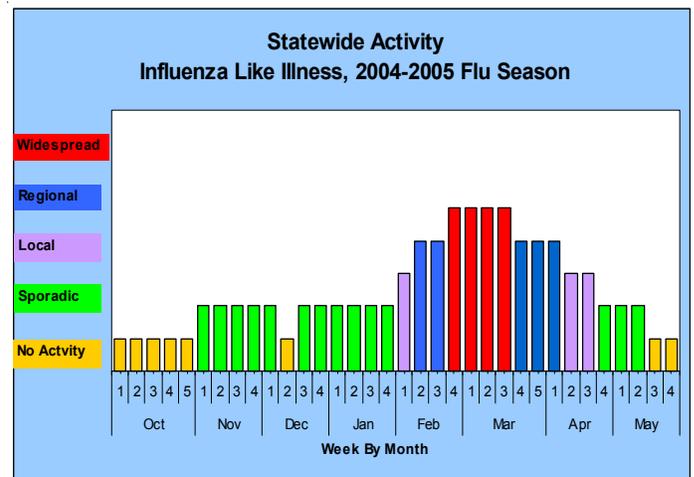


Figure 2

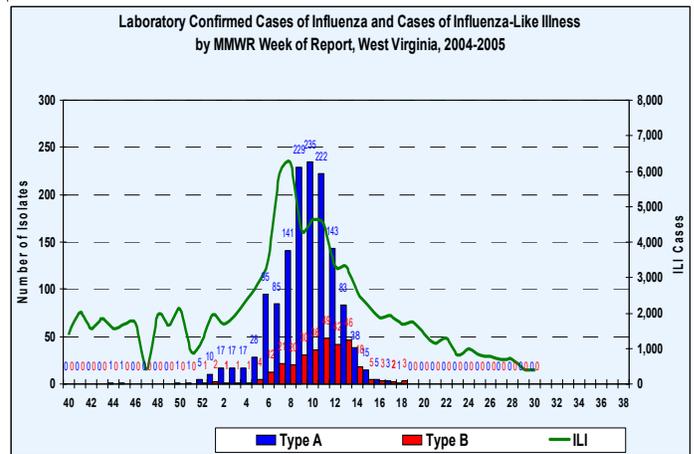


Figure 3

(Tuberculosis, continued from page 4)

cases under the age of 25, and 20 (83.33%) of the cases were 45 years old or older.

During the resurgence, annual TB cases increased most dramatically in the 25- to 44-year-old age group, partially owing to the influence of HIV infection and recent immigration of people in this age group from areas of high TB prevalence.

Since 1992, substantial declines in TB cases occurred in all age groups. An important factor in these declines is believed to be improved TB control in communities, especially in interrupting transmission.

Finishing the Job: What Is Needed to Eliminate TB in the United States

Maintaining Control: By strengthening current TB control, treatment, and prevention systems, we ensure the ability to diagnose and provide proper treatment to people with active TB disease and thus prevent spread to others; we also prevent the emergence of MDR TB.

Accelerating the Decline: By finding better methods of identifying and treating latent TB infection and improving strategies for reaching at-risk populations, we will speed our progress toward elimination.

Developing New Tools for Diagnosis, Treatment, and Prevention: Through research to develop more effective methods of testing for latent TB infection, better drugs to treat latent TB infection, and an effective TB vaccine, we will find vital ways to stop the progression from latent infection to contagious disease.

Engaging in Global TB Prevention and Control: In providing leadership, contributing technical support, and forming international partnerships, we improve global health; worldwide control of TB is in the nation's best interest.

Mobilizing Support for TB Elimination: By reaching leaders of high-risk groups, we can work together to eliminate a disease that burdens their communities.

Monitoring Progress: By assessing the impact of our elimination efforts, we can continually monitor our progress and identify and address any lapses in our efforts.

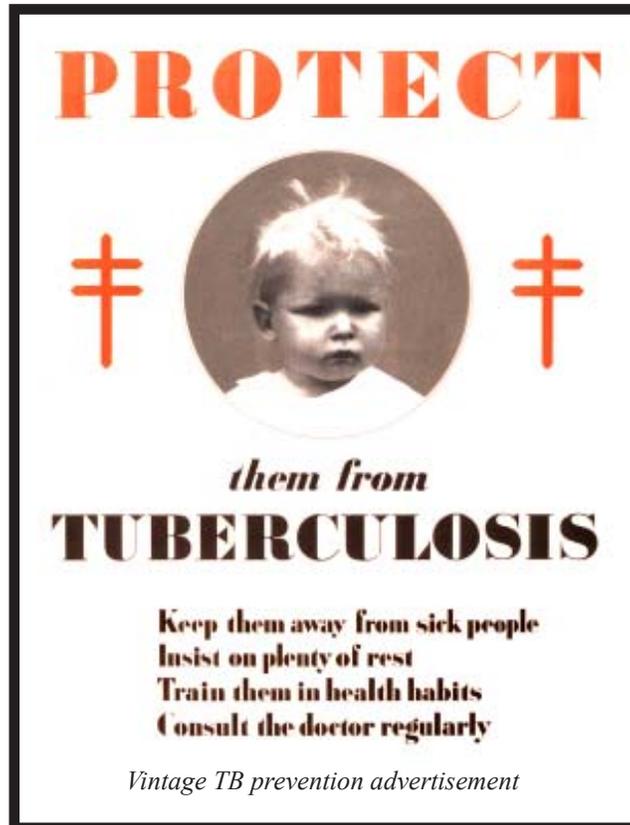
The Impact of Declining TB Cases on TB Control and Prevention

Some areas of low incidence of TB disease, such as West Virginia, are having increasing difficulty in assuring proficiency among health care providers in diagnosing and treating TB disease and latent TB infection. This lack of proficiency may cause diagnosis of infectious cases to be delayed due to the health care provider's lack of experience, resulting in unnecessary transmission to others.

There is a growing concern that, along with the decline in cases, the national as well as the state interest in TB has begun to wane in recent years. There is legitimate concern that public awareness of the problem may be diminishing and that communities may again dismantle their control efforts because of the fading concern and growing budget problems faced by many state and local governments. The West

Virginia Tuberculosis Control Program along with its partners are prepared to address TB issues that stand as barriers to TB elimination. People should never again allow a resurgence of TB in WV or in the United States. This time, the disease must be eliminated, not the TB control programs. Now is the time to take decisive actions, beyond our current efforts, that will ensure that we reach this attainable goal of TB elimination.

For further information about tuberculosis, please contact the WV TB Control Program at (304)558-3669 or in WV, (800) 330-8126. ☒



(Influenza, continued from page 5)

counties spiked towards the end of February, where the number of culture confirmed positive influenza cases reported by West Virginia laboratories spiked a few weeks later in March. This lag time in culture confirmed positive reports may be due to several factors such as: 1) health care providers may not submit samples for all patients for laboratory culture confirmation and may only submit when they see an upswing in ILI cases; 2) time for samples to be delivered to the laboratory; 3) time for culture confirmation testing (1-4 days on average); and 4) time for laboratories to report culture confirmation results to IDEP. A/California/07/2004-like (H3N2) was the predominant strain found in West Virginia and the United States. This strain will be used in the 2005-2006 season's influenza vaccine.

Nearly half of the counties in West Virginia had at least one sentinel provider reporting on a routine weekly basis to the CDC the number of patients seen for influenza-like illness. Also, nearly half of the counties had at least one sentinel provider who submitted nasal swab samples

to OLS for testing and further analyses by CDC; some sentinel providers submitted more than 30 nasal swabs to OLS during the season. Over 90% of the county health departments reported on a routine basis the number of patients seen for influenza-like illness by health care providers in their county.

Conclusion

As demonstrated by the 2003-2004 Influenza Season and past influenza pandemics, not all influenza seasons are "typical" and mild. Influenza surveillance is a tool for monitoring the impact of influenza on West Virginia and averting widespread severe disease. Influenza surveillance is only effective in collecting the necessary data to make public health decisions through the concerted efforts of many different partners. The 2004-2005 Influenza Season's routine reporting by many different partners demonstrates the dedication of West Virginia to the public's health. Please visit the WVDHHR/IDEP influenza website <http://www.wvdhhr.org/IDEP/a-z/a-z-influenza.asp> if you would like to become a sentinel provider or are interested in learning more about the influenza season. ☒

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.