



West Virginia

EPI-LOG

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Predicting West Nile virus outbreaks proves challenging

West Nile virus (WNV) outbreaks have occurred in habitats favorable to WNV mosquito vectors such as poorly drained communities (Ruiz et al. 2007), rural irrigated landscapes (Eisen et al. 2010), and neighborhoods with neglected swimming pools (Reisen et al. 2008). Low income per capita (Harrigan et al. 2010) and old housing (Ruiz et al. 2007) are socioeconomic variables contributing to WNV infection in humans. Warm seasonal temperatures are also associated with increases in WNV (Ruiz et al. 2010; Liu & Weng 2012; Chung et al. 2014).



Despite the associations with a variety of factors, no models have been developed to provide long-term predictions on WNV activity (CDC, 2013). The unpredictable nature of WNV outbreaks requires surveillance systems capable of detecting increases in viral activity.

Surveillance systems monitoring WNV activity in animal communities have demonstrated usefulness in forecasting future human infection. Human surveillance provides an assessment of the human impact of WNV; however, human indicators have limited utility for prediction of WNV outbreaks. WNV outbreaks intensify over a short period of time and human case reports lag weeks after the time of infection.

(See *West Nile*, page 2)

Statewide Disease Facts & Comparisons

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Earl Ray Tomblin, Governor
Karen L. Bowling, Cabinet Secretary

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In West Virginia, early seasonal peaks in WNV infection among mosquitoes preceded infection in humans. The onset of the first 2012 WNV human case in West Virginia was July 19, two weeks after the initial peak in WNV activity in adult *Culex pipiens/restuans* and within the 2-14 day WNV incubation period in human patients (Figure 1). Human cases continued during the summer and early fall when infected mosquitoes were active. Based on mosquito surveillance data, high infection rates in *Culex pipiens/restuans* (minimum infection rate > 5 per 1,000 mosquitoes) were sustained over two weeks in early 2012 (Figure 2). That year, West Virginia also experienced the highest number of WNV human cases compared to 2008-2011.

For more information on mosquito surveillance, contact the Division of Infectious Disease Epidemiology at 1-800-423-1271, extension 1.

References

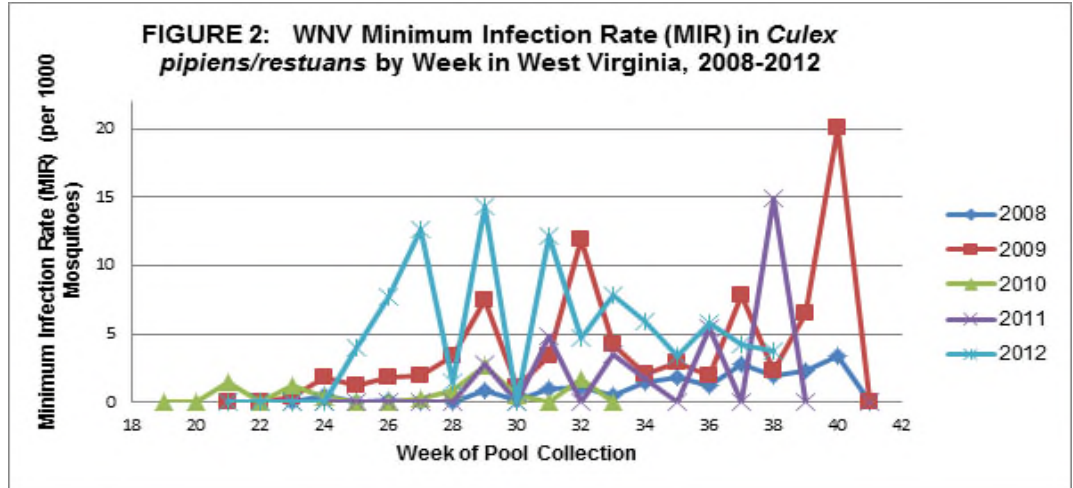
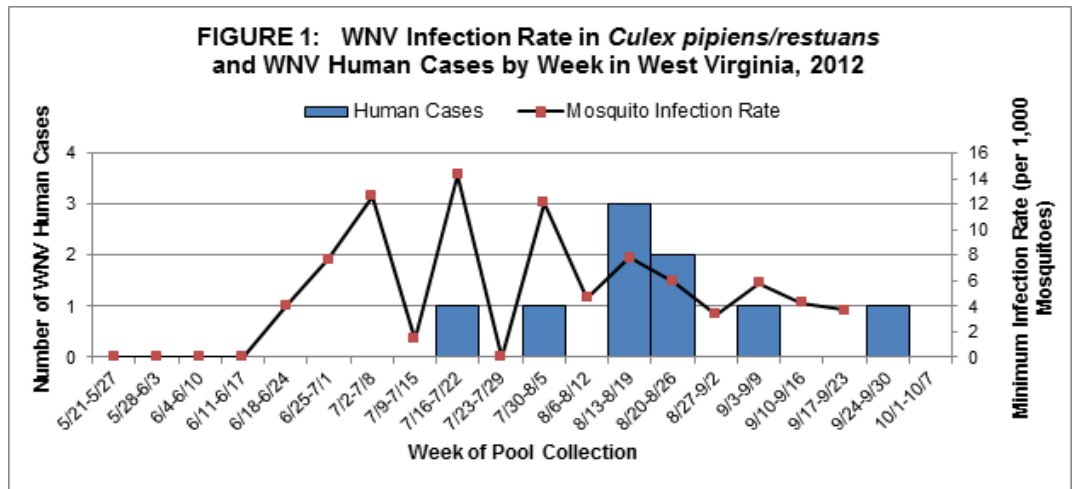
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Tuberculosis control in West Virginia a mix of successes, challenges

West Virginia is considered a low incidence state for tuberculosis (TB), defined as less than 3.5 cases per 100,000 residents. In 1996, the rate reached a low of 3.2 cases per 100,000, and WV has been able to control and prevent TB and remain a low incidence state for well over a decade. In 2012, WV had the lowest rate in the nation at 0.43/100,000 population (Table 1, below). Progress towards TB elimination is being made thanks to the leadership of the WV-Division of TB Elimination (WV-DTBE) staff in cooperation with local health departments (LHDs).

However, 2013 proved to be an exceptionally challenging year for TB in WV. One enormous challenge was the increasing complexity of the cases identified. In 2013, 13 cases were complicated by diabetes, hepatitis, alcohol and drug abuse, and drug resistance.

A second challenge in 2013 was the staggering federal cuts to the TB Elimination Program. The funds made available to WV-DTBE by both federal and state governments are crucial to the Program's success; however, in 2014 there will be a 26.5% federal cut, with more cuts to come in the future. This will greatly impact the TB control efforts.

Yet another challenge faced in 2013 was the unprecedented drug and biologic shortages which crippled both public and private health efforts to screen and treat TB infection and disease.

West Virginia reported 13 confirmed cases of tuberculosis in 10 of the 55 counties during 2013, giving an incidence rate of 0.70 per 100,000 population. This is a 38.5% increase from 2012, when there were only 8 reported cases (0.43/100,000 population). As usually happens in low incidence areas, the case count has fluctuated over the past 15 years (Table 2, page 4).

The 65 and older age group represented 15.38% (2) of the reported cases for 2013. Both cases were over the age of 85. In 2013, there were 7 cases (53.86%) in the age group 45-64 compared with 1 (12.5%) in 2012. The 25-44 age group constituted 23.07% (3) of the reported cases in 2013. There were 5 (62.5%) reported cases of TB in the 25-44 age group in 2012. There was one case (7.69%) of TB under the age of 25 in 2013 and one case (12.5%) reported

(See *Tuberculosis*, page 4)

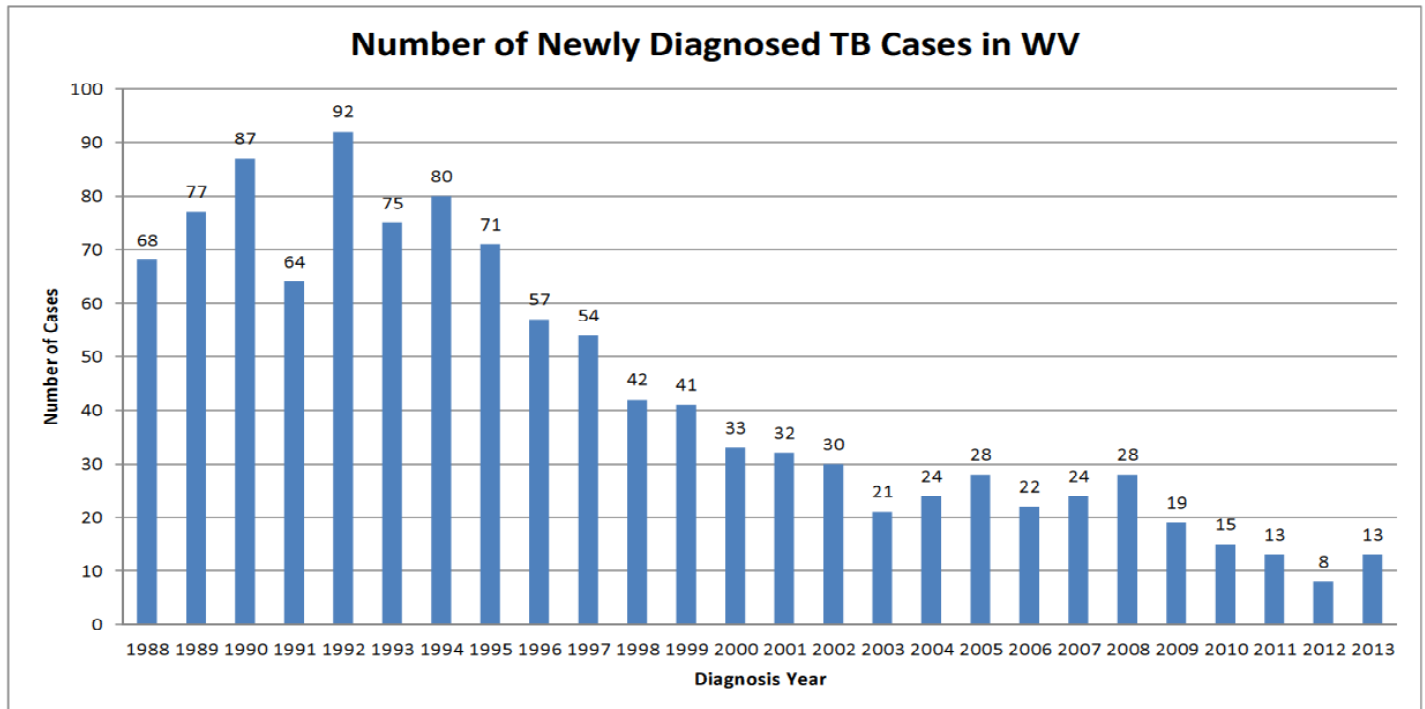


Table 1

(Tuberculosis, continued from page 3)

in 2012. There were no cases (0%) of TB reported under the age of 15 in 2009 and 2010, one case (8%) reported in 2011 and no cases (0%) in 2012 and 2013.

The percent of reported TB cases in 2013 was 61.54% in males (8) and 38.46% in females (5). No person was classified as homeless in 2012 or 2013. There was one case (7.69%) reported as a resident of a long-term care facility in 2013 and none in 2012. The percent of persons not employed in 2012 was 12.5% (1) and 0% (0) in 2013. There were no cases (0%) of TB reported in health care workers in 2012 or 2013.

From 2007 to 2013, there were no cases among persons known to use injected drugs. One case (12.5%) was reported to be a non-injected drug user in 2012, and one (7.69%) in 2013. There were two (15.38%) cases reported to use alcohol in excess in 2013 and one case (12.5%) in 2012.

As noted in previous years, the percent of non-U.S. born cases has increased progressively since 2001, when there were no non-U.S. born cases reported in West Virginia. In 2002, there was one (3%) case of non-U.S. born; in 2003, there were two (10%); in 2004, there were 3 (13%); in 2005, there were four (14%); in 2006, there were four (18%) cases; in 2007, there were five (21%); in 2008, there were 7 (25%); and in 2009, there were nine (47%) non-U.S. born reported. In 2010, there was only one (7%) non-U.S.

born case reported. In 2011, however, this number once again climbed to 39% (5). In 2012, there were 2 (25%) non-U.S. born cases, and in 2013 there were 3 (23.08%). WV-DTBE continues to encourage local health departments to work collaboratively with entities within their jurisdictions to do targeted TB screening and testing of high risk persons.

There were two (25%) cases reported as residents of a correctional facility in 2012, and none (0%) in 2013. One of the cases in 2012 was in a federal facility and was a continuation of the 2009 outbreak in that facility. In 2010, there were four (27%) residents of federal correctional facilities diagnosed with TB; three in the same facility where two inmates were diagnosed in 2009, and one in another federal facility in a different county. West Virginia remains vigilant in the community where the federal facility involved in the 2009 outbreak is located, as this county has not had an active case of TB outside of the federal facility since 1992. The relationship between WV-DTBE and the WV Division of Corrections continues to improve, and information sharing occurs routinely.

As the data show, West Virginia's TB cases and rates continue to decline. In order for WV to move further towards TB elimination, ongoing surveillance and prioritization of TB control efforts among populations at elevated risk for TB must continue. ☒

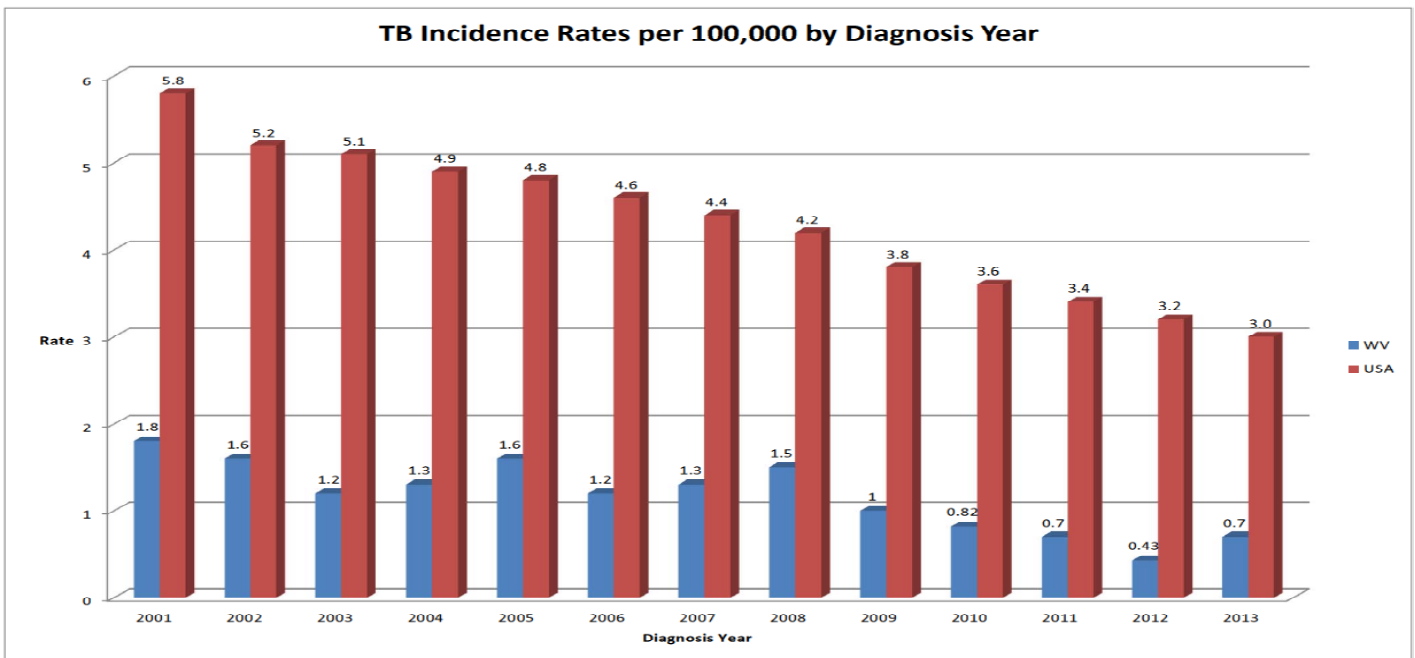


Table 2

MyIR project gives patients access to their immunization records

The West Virginia Statewide Immunization Information System (WVSIS) has launched a pilot project that is designed to give patients access to their own and their family members' immunization records without having to visit their health care provider's office. It also will allow patients to download and print official copies to satisfy the requirements of schools, camps, state agencies, employers and others who require proof of immunization.

The project is called WV MyIR (West Virginia My Immunization Record). Here's how it works:

- Health care providers and their staff will be responsible for approving initial account requests from patients to ensure they are able to access copies of the correct records from the WVSIS. This is a one-time enrollment

process.

- Patients will then be able to access a copy of their official immunization records from any computer through the use of an authenticated account. The process is secure and private - ensuring that only those with approval will be able to access immunization records.

The goal of the project is to reduce administrative burdens for health care providers, improve overall health by increasing immunization rates, and empower consumers to take greater control of their own health and that of their family members.

WVSIS is piloting the project with just a handful of providers but hopes to have it operating statewide later this year.

West Virginia is one of five states chosen and funded by the Office of the National Coordinator for Health Information Technology to be a pilot site. The office is under the U.S. Department of Health & Human Services. The other states participating in the pilot project are Alaska, Washington, Arizona and Louisiana. ☒

New guidelines recommend daily HIV prevention pill for those at substantial risk

Health care providers should consider advising the use of anti-HIV drugs by uninfected patients who are at substantial risk of infection, according to new clinical guidelines issued by the CDC on May 14th.

PrEP, or pre-exposure prophylaxis, could reduce HIV infection rates. When taken daily as directed, PrEP can reduce the risk of HIV infection by more than 90%. Inconsistent use results in much lower levels of protection.

"HIV infection is preventable, yet every year we see some 50,000 new HIV infections in the United States," said CDC Director Tom Frieden, M.D., M.P.H. "PrEP, used along with other prevention strategies, has the potential to help at-risk individuals protect themselves and reduce new HIV infections in the US."

PrEP should be considered for HIV-uninfected pa-

tients with any of the following indications:

- Anyone who is in an ongoing sexual relationship with an HIV-infected partner.

- A gay or bisexual man who has had sex without a condom or has been diagnosed with a sexually transmitted infection within the past six months, and is not in a mutually monogamous relationship with a partner who recently tested HIV-negative.

- A heterosexual man or woman who does not always use condoms when having sex with partners known to be at risk for HIV (for example, injecting drug users or bisexual male partners of unknown HIV status), and is not in a mutually-monogamous relationship with a partner who recently tested HIV-negative.

- Anyone who has, within the past six months, injected illicit drugs and shared equipment or been in a treatment program for injection drug use.

The guidelines were developed by the CDC in partnership with other federal health agencies, public health experts and community leaders. ☒

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