



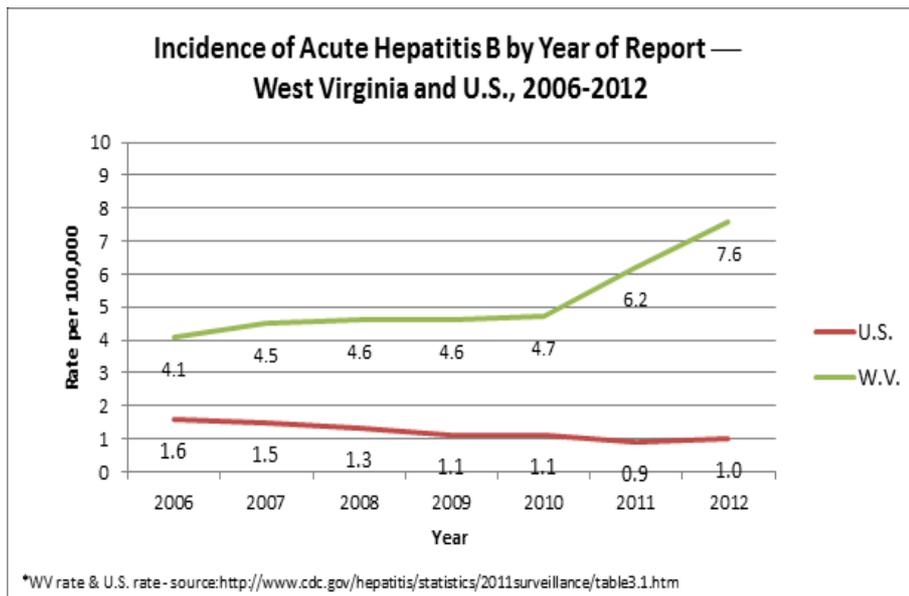
West Virginia

EPI-LOG

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Hepatitis B on the rise in West Virginia

The incidence of acute hepatitis B in West Virginia is on the rise despite the national downward trend over the past two decades. In 2012, the incidence of acute hepatitis B nationwide was 1.0 case per 100,000 population, while in West Virginia (WV) the incidence climbed to 7.6 cases per 100,000:



(See *Hepatitis*, continued on page 2)

Statewide Disease Facts & Comparisons

A quarterly publication
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Office of Epidemiology
& Prevention Services

IN THIS ISSUE:

- Hep B increasing in West Virginia
- Addressing the shortage of TB test solutions
- Low childhood vaccination rates
- Standards for pediatric vaccination

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Earl Ray Tomblin, Governor
Karen L. Bowling, Secretary (DHHR)

(Hepatitis, continued from page 1)

Hepatitis B is an inflammatory disease of the liver.

Symptoms may include:

- Fever
- Fatigue
- Loss of appetite
- Nausea
- Vomiting
- Abdominal pain
- Dark urine
- Clay colored stool
- Joint pain
- Jaundice

Only 50% of people with an acute infection are symptomatic, so the burden of hepatitis B in WV is probably much higher than what is diagnosed and reported. The CDC estimates that the number of new infections nationwide is ten times higher than what is reported. Out of the acutely infected individuals, 95% will clear the virus and develop surface antibodies that will protect them from future infection. The other 5% will go on to develop a lifelong chronic infection and become the main reservoir for hepatitis B transmission to unvaccinated contacts. Any person, whether acutely or chronically infected, who is HBsAg (hepatitis B surface antigen) positive is infectious and therefore can transmit the virus to other people. The hepatitis B virus is ten times more infectious than hepatitis C and 100 times more infectious than HIV. It can live on a surface at room temperature for up to 7 days. A 1:10 bleach solution will successfully kill the virus.

Hepatitis B is a category II disease under the West Virginia Reportable Disease Rule (64 CSR-7). All acute or chronic hepatitis B cases must be reported to the local health department within 24 hours. Once the health department receives notification from the laboratory or from a healthcare provider, an investigation is initiated. The health department gathers clinical information to ascertain whether the case is acute or chronic. If the patient is acutely infected, additional information is collected, such as exposure history, risk factors and information about recent sexual, household or drug paraphernalia sharing contacts. Patient contacts are advised to come to the health department for testing, post exposure prophylaxis and hepatitis B vaccination free of charge. All individuals who are hepatitis B surface antigen (HBsAg) positive should be educated about prevention of disease transmission.

Information about risk factors and exposure history is critical to the investigation as it guides prevention and control efforts. Because hepatitis B is a vaccine preventable disease, knowing which populations are at greatest risk and therefore need to be vaccinated will help to reduce the transmission and thus the incidence of hepatitis B in WV.

Information gathered from disease investigations since 2007 tells us that those who become acutely infected with hepatitis B in WV have similar characteristics of acutely infected individuals nationwide. The 30-34 age group has the highest incidence at 16.8 cases per 100,000 population (table 1, below). The incidence rate of acute hepatitis B is higher in males than in females (table 2, below). The top two risk factors are street drug use and injection drug use (table 3, page 8).

Table 1. Incidence of Acute Hepatitis B by Age Group — West Virginia, 2007-2012 (N=581)

Age Group	Rate
15-19**	1.0
20-24	6.0
25-29	15.2
30-34	16.8
35-39	10.2
40-44	10.8
45-49	8.4
50-54	4.5
55-59	3.1
60-64	2.5
65-69	1.8
70+	0.7

Table 2. Percent of Acute Hepatitis B Cases by Gender — West Virginia, 2007-2012 (N=581)

Male	60%
Female	40%

(See Hepatitis, page 6)

Letter to health care professionals:**West Virginia tuberculosis elimination director addresses shortage of TB skin test antigen solutions**

Dear Colleague,

Many of you may have recently received a Health Advisory Notice from the Centers for Disease Control and Prevention (CDC) concerning the **nationwide shortages of tuberculin skin test (TST) antigen solutions**. Two brands of TST solution are distributed in the United States: Tubersol and Aplisol. Tubersol is in short supply for the second time this year, which is creating an increased demand for Aplisol and, in some areas, resulting in difficulty obtaining either product.

There are currently two methods available to determine the presence of tuberculosis (TB) infection: traditional Mantoux TST using one of the TST antigens and an interferon gamma release assay (IGRA) blood test. The two FDA-approved IGRAs available for use in the United States are QuantiFERON Gold IN-Tube and T-SPOT-TB. Additional information on the use of IGRAs for determining the presence of TB infection can be found on the CDC web site at <http://www.cdc.gov/mmwr/PDF/rr/rr5905.pdf>.

Currently, the West Virginia Division of TB Elimination (WV-DTBE) recommendations for clinicians and local health departments include:

Carefully screen individuals for their risk factors to determine if testing for TB infection is indicated. Individuals entering the public school system require testing as part of WV law. These individuals include: first entering personnel or volunteer, or a student, personnel or volunteer who transfers to a WV school from outside the state border and does not have a documented TST or IGRA within the previous four months. (At this time, WV is deferring those school volunteers who do not meet the criteria for high risk from skin testing until PPD supplies are replenished.

WV-DTBE's standard of practice is to assess each individual to determine if risk factors are present for acquiring TB infection or progressing to active TB disease, once infected.

- Individuals identified as high risk are tested with a TST or IGRA.

- Other individuals are provided a provisional clearance letter stating that the individual has been evaluated and will be called back for testing when TST supplies return.

This practice is consistent with published CDC guidance, which can be found online. Clinicians and facilities may adapt the following WV-DTBE documents for their own use. The TB Testing Criteria, TB Risk Assessment, and the sample Clearance Letter can be found online.

For health care-related settings with an annual serial testing program, carefully evaluate current TB transmission risk and infection control policies and practices to determine if annual serial testing continues to be warranted. CDC guidelines www.cdc.gov/mmwr/pdf/rr/rr5417.pdf recommend that all health care settings conduct an initial and ongoing evaluation of the potential risk for transmission within their settings. This risk assessment determines the types of administrative, environmental, and respiratory protection controls needed, including the frequency of testing for TB infection. For settings identified as low risk, only baseline testing is required; subsequent testing is only required in the event of a known exposure.

Continue to perform baseline testing in health care settings and correctional facilities for new hires and for new admissions to long-term residence. Use of an IGRA for this purpose is recommended. If TST antigen is used, 2-step baseline testing is required.

For facilities (such as health care settings and correctional facilities) with risk factors that necessitate continued serial testing, defer annual serial testing by TST until supplies of TST antigens return to normal. For those programs utilizing IGRA tests as their test of choice, testing should continue as normal.

Reserve TST antigens for priority activities, such as the investigation of individuals suspected to have active TB, the evaluation of those exposed to an active TB case, and children under 5 years of age who require testing.

CDC's key recommendations during this TST antigen shortage are as follows:

- Substitute an IGRA blood test for a TST.
- Substitute Aplisol for Tubersol, if available.
- Allocate use of TST antigens to priority uses such as TB contact investigations.

(See TB Test, page 6)

Childhood vaccination rates low in West Virginia

Among the 50 states and the District of Columbia, West Virginia ranks 49th in the rate of two-year-old children who have had a complete childhood vaccination series, at only 60.8% compliance. However, the U.S. rate of series completion is only 68.4% among this group which is also well below the goal of 95% which is a standard that would ensure a safe level of herd immunity.

The recommended vaccine series for this age group includes the following:

- Four or more doses DTaP (for diphtheria, tetanus, and pertussis)
- Three or more doses for polio
- One or more doses MMR (for measles, mumps, and rubella)
- Complete series Hib (for *Haemophilus influenzae* type b)
- Three or more doses for hepatitis b
- One dose for varicella (chickenpox)
- Four or more doses PCV (pneumococcal conjugate vaccine)

Since West Virginia has the strongest immunization policy for new school enterers in the nation, its children get caught up with the vaccinations required for school entry, but only after remaining unnecessarily susceptible to several vaccine preventable diseases for 5 to 6 years.

West Virginia also has very low rates of adolescent vaccination coverage. Tdap (tetanus, diphtheria, and pertussis) and meningococcal vaccination rates are 68% and 64% respectively among 13-17 year olds in West Virginia compared to 85% and 74% nationally. Perhaps the most disappointing coverage rate data of all, however, is that for the HPV (human papilloma virus) vaccine. The overall three dose series completion rate is actually higher in West Virginia than nationally but those rates are only



36% and 33% respectively. The national rate of HPV vaccination actually decreased by two percentage points from 2012 to 2013.

The Healthy People 2020 national targets for adolescent coverage rates are 80%. The Centers for Disease Control and Prevention (CDC), the American Academy of Pediatrics and the American Academy of Family Physicians urge clinicians to provide consistent, clear, strong vaccination recommendations to adolescents and their parents or guardians. Extensive research has shown that clinicians have a great influence on whether vaccine-hesitant parents decide to have their children vaccinated, particularly with HPV vaccine. Clinicians who strongly urge parents to vaccinate their children achieve higher vaccination rates among their patients.

The West Virginia Bureau for Public Health urges immunizing physicians and other health care practitioners to review and implement, where needed, best practices for improving immunization coverage rates. Among the most effective interventions for raising immunization rates are

conducting practice-level assessments of patient vaccination coverage rates, generating real-time lists of patients and recommended vaccinations needed, and the tried and true method of issuing reminder/recall notices.

Providers have tools for performing these interventions in the West Virginia Statewide Immunization

Information System (WVSIIS), the state immunization registry. Providers can and should contact the WVSIIS helpdesk at 1-877-408-8930 for technical assistance in utilizing these tools. Providers should also refer to the Standards of Pediatric Immunization Practices to determine if there are any additional interventions not yet being utilized for which their practice is capable. A complete list of those standards can be seen on page 5. ❏

Standards of Pediatric Immunization Practices

Availability of Vaccines

- Vaccination services should be readily available.
- Vaccinations should be coordinated with other healthcare services and provided in a medical home when possible.
- Barriers to vaccination are identified and minimized.
- Patient costs should be minimized.

Assessment of Vaccination Status

- Healthcare professionals should review the vaccination and health status of patients at every encounter to determine which vaccines are indicated.
- Healthcare professionals should assess for and follow only medically indicated contraindications.

Effective Communication about Vaccine Benefits and Risks

- Parents/guardians and patients should be educated about the benefits and risks of vaccination in a culturally appropriate manner and in easy-to-understand language.

Proper Storage and Administration of Vaccines and Documentation of Vaccinations

- Healthcare professionals follow appropriate procedures for vaccine storage and handling.
- Up-to-date, written vaccination protocols are accessible at all locations where vaccines are administered.
- Persons who administer vaccines and staff who manage or support vaccine administration must be knowledgeable and receive ongoing education.
- Healthcare professionals should simultaneously administer as many indicated vaccine doses as possible.
- Vaccination records for patients must be accurate, complete, and easily accessible.
- Healthcare professionals report adverse events following vaccination promptly and accurately to the Vaccine Adverse Events Reporting System (VAERS) and are aware of a separate program, the National Vaccine Injury Compensation Program (NVICP).
- All personnel who have contact with patients should be appropriately vaccinated.

Implementation of Strategies to Improve Vaccination Coverage

- Systems are used to remind parents/guardians, patients, and healthcare professionals when vaccinations are due and to recall those who are overdue.
- Office or clinic-based patient record reviews and vaccination coverage assessments should be performed annually.
- Healthcare professionals should practice community-based approaches. 

(Hepatitis, continued from page 2)

There are many challenges to reducing the incidence of hepatitis B in WV. The timely and accurate information about cases is important but it can be difficult due to the nature of the information that is collected. People may be reluctant to provide accurate information about risk factors because some of those behaviors involve illegal drug use. Also, providing the names of contacts is voluntary and many patients are unwilling to name sexual and drug paraphernalia sharing contacts. Many patients are lost to follow up by the local health department, so the investigation is incomplete, and the patients may continue to spread HBV to unvaccinated contacts.

Despite these challenges, there are efforts at both the state and local level to try and combat hepatitis B in WV. The Hepatitis B Pilot Project is a good example of a partnership between the state and local health departments to work through agencies in the community to vaccinate high risk populations. This project is currently being implemented in 14 counties with high incidences of hepatitis B and may be expanded into additional counties if funding permits. It is hoped that through continued efforts at the state and local level, as well as through partnerships within the community, we will be able to bring the incidence of hepatitis B closer to the national level in the future. ☒

Table 3. Top 6 Risk Factors Reported Among Acute Hepatitis B Cases — West Virginia, 2007-2012 (N=581)

Used Street Drugs	34%
Injected Drugs	24%
Contact of a Hepatitis B Case	22%
>1 Sexual Partners	22%
Tattoo (non-commercial)	18%
Incarcerated >24 Hours	17%

(TB Test, continued from page 3)

- Defer serial testing by TST for infection control in settings with a low likelihood of TB exposure. The CDC recommends consultation with public health and occupational health authorities prior to implementing this approach.

As always, local health department TB Programs across WV are a resource for consultation on the evaluation and treatment of patients with TB diagnoses as well as infection control policies and practices. You may find the information regarding your local health department at www.dhhr.wv.gov/localhealth/Pages/default.aspx. Assistance also is available through WV-DTBE at 800-330-8126 or on our website.

Thank you for your ongoing efforts to diagnose and report suspected TB, both infection and active disease. In 2012, WV reported eight active TB cases, a decrease from the 13 cases reported in 2011. In 2012, two or 25% of WV's

TB cases were reported among foreign-born persons. WV's case rate of 0.43 cases of active TB per 100,000 population was below the national rate of 3.2 cases per 100,000, and was the lowest rate in the nation. Approximately 250 to 400 cases of TB infection, those that have not yet progressed to active disease, are reported in WV annually.

TB remains a public health challenge in West Virginia and your efforts to prioritize the use of TST antigens during this shortage will help us preserve the supply for evaluating those at highest risk for TB infection and progression to active disease.

Sincerely,



Dominic Gaziano, M.D., F.C.C.P., Medical Director
West Virginia Division of TB Elimination ☒

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 & Prevention Services. Graphic layout by Chuck Anzilewicz. Please call the Office of Epidemiology & Prevention Services at (304) 558-5358 if you need additional information regarding any article or information in this issue. If you have ideas or contributions you would like to make in a future issue, contact editor Loretta Haddy.

**West Virginia Department of Health and Human Resources -
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