



West Virginia

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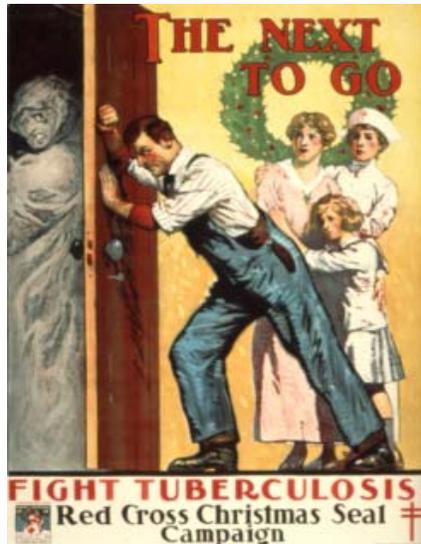
The light at the end of the tunnel Envisioning the end of tuberculosis

March 24, World TB Day, commemorates a most important date in 1882. On that date nearly 130 years ago Robert Koch discovered the tubercle bacilli, the germ responsible for tuberculosis. Dr. Koch's discovery provided hope that tuberculosis could be eliminated as one of the world's greatest scourges. Following this discovery hopes for tuberculosis elimination by immunization, patient isolation or drug treatment were largely disappointing.

Tuberculosis elimination in the United States has to deal with two important scientific facts: (1) Immunity to tuberculosis was very limited as demonstrated by the fact that the tuberculosis organisms never die in vivo but are carried to the grave in a viable state, binding their time for an opportunity to "break out" and create disease and, (2) The United States is not a geographic island and, therefore, not immune to the cross-currents of a worldwide explosion of tuberculosis.

Tuberculosis control appears to be a moving target for worldwide epidemics and can certainly reach beyond geographic boundaries. Despite these facts, in 1889 a strategic plan for elimination of tuberculosis in the United State was instituted. The hope was to eliminate tuberculosis by 2010.

(See *Tuberculosis*, page 6)



This vintage, pre-penicillin Red Cross poster illustrates the fear once commonly felt in the face of tuberculosis.

Statewide Disease Facts & Comparisons

A quarterly publication
of the West Virginia
Office of Epidemiology
& Prevention Services

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Joe Manchin III, Governor
Patsy A. Hardy, Secretary (DHHR)

West Virginia's immunization information system shows dramatic improvements in 2009

The West Virginia Statewide Immunization Information System (WVSIIIS) is an electronic immunization registry that has been in existence for 10 years and currently contains 7.5 million vaccination records on 1.2 million patients. State legislation mandates healthcare provider reporting of all vaccinations given to persons 18 years and under by providers within 2 weeks of administration (§64-7-6, "Other Reportable Events: Administration of Immunizations") to WVSIIIS. In 2003, WVSIIIS began web-based reporting, which made the system available to many more providers across the State; previously the system was used primarily by local health departments to record patient immunization data. As of September 1, 2009 there were 217 public providers and 282 private providers enrolled to report vaccinations to WVSIIIS. The H1N1 vaccination campaign, which was initiated in October 2009, led to the enrollment of an additional 406 provider sites.

Since the advent of web-based reporting of immunizations in West Virginia, no comprehensive effort has been made to measure usage of some of the useful vaccine-delivery features available in WVSIIIS for providers to use. Some of the helpful features WVSIIIS offers to providers includes automated vaccine forecasting, inventory management, a reminder/recall system to identify patients due/past due for recommended vaccinations, the ability to designate whether a patient is "active" or "inactive," and the ability to report and denote historical vaccinations (i.e., vaccinations given by another provider). During provider trainings, many of these features are only briefly covered since the bulk of training time is spent on the actual process of reporting administered vaccinations.

During 2009, an evaluation project was undertaken by the West Virginia Division of Immunization Services with a portion of WVSIIIS providers that are enrolled in the Vaccines for Children (VFC) program. The purpose of the

project was to supply a training opportunity for providers to learn more about how tools available in WVSIIIS can help improve WVSIIIS-derived coverage rates at the provider level and then measure changes in provider attitudes and practices from pre-intervention to post-intervention. A focus was placed on the use of WVSIIIS to assess vaccination coverage at the provider level due to recommendations from Centers for Disease Control and Prevention to use WVSIIIS data as the sole source of information when conducting provider immunization assessments—and provider-level immunization coverage in WVSIIIS is often

low. The primary project question was: Will training increase from baseline measurement use of WVSIIIS tools by participating providers?

A total of 62 sites were selected for inclusion in the evaluation project on the basis of the following criteria: presently enrolled in VFC, classified as mid- to high-volume (i.e., reporting >199 doses administered per year) reporting, and not reporting to WVSIIIS by paper. An approximate equal number of public and private sites were selected.

The evaluation process planned with sites included the following phases:

- 1) An initial visit by VFC field staff to administer a standardized pre-test on self-reported use (and intention of future use) of WVSIIIS features followed by a brief standardized presentation regarding ways to improve practice –based coverage rates in WVSIIIS using these features. VFC field staff informed the provider of the project and to expect a phone call from a WVSIIIS trainer within 30 days to schedule an on-site training.

- 2) A visit within 90 days of the VFC visit by WVSIIIS training staff to conduct a targeted training on the practice and use of WVSIIIS features to improve coverage rates. During this visit, WVSIIIS training staff also supplied a bar chart showing the provider's practice-based WVSIIIS vaccination coverage for children 19 – 35 months of age

(See *WVSIIIS*, page 3)



(WVSIIS, continued from page 2)

that are associated with the provider in WVSIIS and classified as active patients, compared with West Virginia’s National Immunization Survey (NIS) coverage rates for the same age group.

3) A standardized post-test administered via phone by the provider’s WVSIIS trainer to be completed within 60 days of the WVSIIS training visit.

The chart on this page depicts the overall results of pre- and post-test results. Nearly every indicator improved from baseline (pre-test) to follow-up (post-test), although many of the observed increases were ultimately not statistically significant due in part to sample size limitations. No significant change was measured at follow-up regarding the use of the ability to report historical vaccinations (3.6% improvement) in WVSIIS or any intention of doing so in the next 6 months (5.1% improvement).

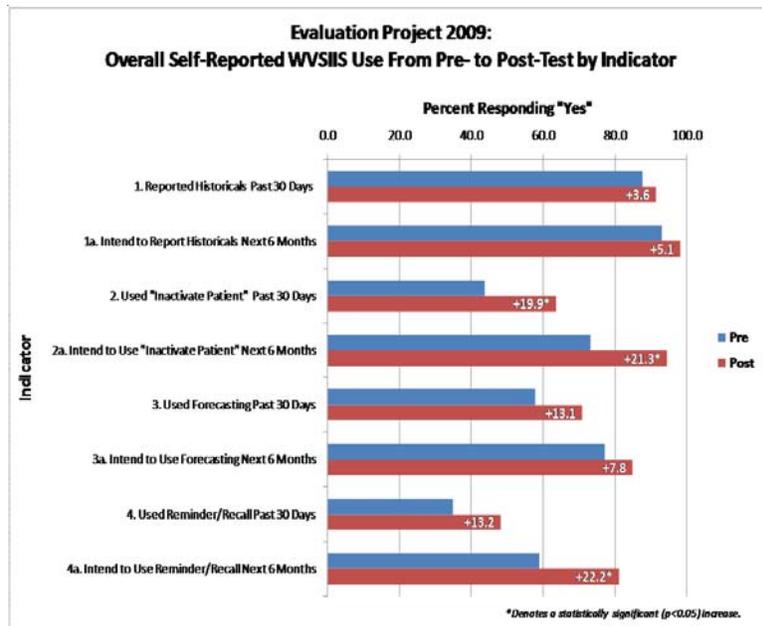
However, the percentage of providers indicating current use of this feature was high at baseline (>80%). Another WVSIIS feature assessed was provider use of the “patient inactive status” to manage patients in WVSIIS and denote which patients use the provider as their medical home. Current use of this feature measured low at baseline (43.8%). At follow-up, statistically significant increases were measured for both current use (19.9% improvement) and intention to use this feature (21.3% improvement). The remaining features included in the evaluation project included the use of automated WVSIIS vaccine forecasting and use of reminder/recall features. Both features measured low at baseline (57.8% for using WVSIIS forecasting and 35.0% for using WVSIIS reminder/recall) and improved slightly at follow-up (7.8% and 13.2%, respectively); however, neither improvement was found to be statistically significant. The percentage of providers expressing an intention to use either of these features over the next 6 months also

increased, but only intention to use reminder/recall increased by a statistically significant amount (22.2% improvement).

This project provided an excellent opportunity to measure WVSIIS feature utilization and determine if a targeted training on effective use of these features would change the way providers use WVSIIS. One of the most important findings from the project was that many providers had not previously been using patient management features in WVSIIS to “dis-own” patients that were no longer considered to be active patients. The problem with not managing patients in WVSIIS is that WVSIIS-derived vaccination coverage rates will be unnecessarily low due to the inclusion and of additional patients that are not currently active and potentially under-immunized. As a result of the project, providers appear to be more attentive to the issue of patient management. Another important finding from the project was that the majority of providers included in the project reported that they are reporting historical records to WVSIIS. This issue is very important, as missing data from previously administered but unreported vaccinations will obviously create “holes” in immunization information system (IIS) patient vaccination

records. Most providers (65%) reported they were not using WVSIIS reminder/recall features at baseline; therefore, an additional valuable finding from the project is the apparent intention of providers to begin utilizing reminder/recall features within WVSIIS over the next 6 months. Reminder/recall is noted to be directly linked to improvements in provider immunization rates and it will be important to determine if providers follow through with their intentions.

In conclusion, although many providers appear to be entering historical records into WVSIIS, increased provider use of patient management, forecasting and reminder/recall features will be necessary in order to reap the full benefits of what WVSIIS has to offer. ☒



West Virginia ranks 1st in the nation in incidence of hepatitis B and third in incidence of hepatitis C. Hepatitis virus is the leading blood borne pathogen in the United States. The hepatitis B virus is 100 times more infectious than the HIV virus, and hepatitis C is 10 times more infectious than the HIV virus. Hepatitis is the leading cause of liver cancer, cirrhosis and liver transplants. If you would like to learn more about hepatitis, consider attending the West Virginia Viral Hepatitis Summit, May 20 in South Charleston. See details below, plus more information and a registration form on page 5.



WEST VIRGINIA VIRAL HEPATITIS SUMMIT



DRAFT AGENDA

7:30 AM	Registration & Exhibits Open / Breakfast	
8:30 AM	Liver Health- Firing Up Prevention	Thelma King Thiel, RN, BA Hepatitis Foundation International
9:00 AM	Hepatitis B- Chronic? Carrier? When and How to Treat	Raymond Koff, MD University of Connecticut
10:00 AM	Break	
10:15 AM	Diagnosis and Treatment of Hepatitis C	Raymond Koff, MD University of Connecticut
11:15 AM	The Challenge of Addiction for Providers and Hepatitis Patients	Amy Smith, PA-C OASIS Clinic, CA
12:15 PM	Lunch	
1:00 PM	Sorting Out the Diagnostics	Edward Marino, PA-C Porter Adventist Hospital, CO
2:00 PM	Depression, Mental Health and HCV Infection	Andrew Angelino, MD Johns Hopkins Medical Center, MD
3:00 PM	Break	
3:15 PM	HCV/HIV Co-Infection	Speaker TBD
4:15 PM	Closing Remarks	
4:30 PM	Program Adjourned	



HEPATITIS FOUNDATION INTERNATIONAL
504 Blick Drive, Silver Spring, MD 20853
Phone#: 1-800-891-0707 Fax: 301-622-4702

(Tuberculosis, continued from page 1)

Despite not having reached this goal, a call to action for tuberculosis elimination in the United States was re-committed this year.

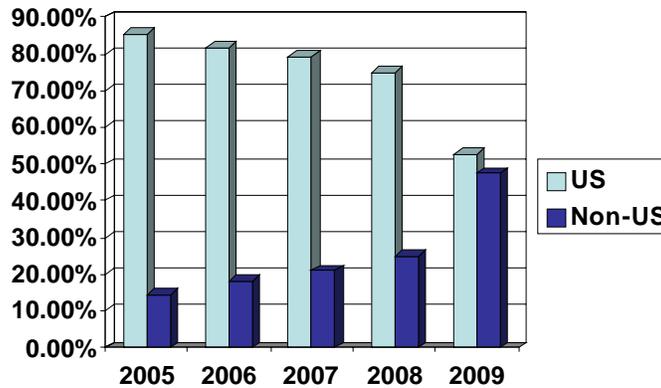
Interestingly, West Virginia reached an interim target of case reduction at 3.5 cases per 100,000 in 2000. However, since 2004 the tuberculosis rate of decline in West Virginia has been influenced greatly by non-US born immigration into West Virginia. Prior to 2004 West Virginia's latent reservoir of tuberculosis was, to a great extent, confined to the elderly and debilitated that acquired their initial infection decades previously. With the death of this reservoir generation tuberculosis would be expected to decline. However, since 2004 foreign-born immigration into West Virginia's timber industry, fruit and agricultural industry, and in our academic centers has increased quite significantly. As can be noted in the chart on this page, this immigrant source of active tuberculosis was in this group. It is noteworthy that this group, in

aggregate, has ten times the United States base rate for tuberculosis.

With the new demographics of "international" tuberculosis in the United States, the rate of decline of tuberculosis was reduced to only 3.8% per year. At this rate of tuberculosis decline, tuberculosis elimination would not occur for 100 years. However, surprisingly, in the year 2009 there was reported an 11.4% decrease in case rate when compared to the 3.8% in 2008. This surprising fall is currently being assessed to determine whether it is true decline or whether it represents under-diagnosis, surveillance or reporting error.

In any event, we must continue rigorous treatment protocols and surveillance to further diminish the tuberculous scourge. Advances in tuberculosis have been stagnant for many decades. We can hope for modern tools that will provide for rapid diagnosis, shortened treatment regime, and prevention of the disorder. In 2009 we became the Division of Tuberculosis Elimination. We hope to carry out this new designation. ☒

**COUNTRY OF ORIGIN
WV-TB**



CDC announces \$31.5 Million expansion of successful HIV testing initiative

Following the success of an initiative through which more than 1.4 million Americans have been tested for HIV, the Centers for Disease Control and Prevention announced today a new three-year, \$31.5 million expansion of the program. Funding for the new phase of the initiative is expected to total approximately \$142.5 million over the next three years, and will be provided to state and local health departments across the country to increase access to testing and early diagnosis of HIV.

The initiative, originally designed to increase testing and knowledge of HIV status primarily among African-American men and women, will now reach more U.S. jurisdictions and populations at risk. These include gay and bisexual men, as well as male and female Latinos and injec-

tion drug users. The new phase will build on the progress of the previous effort and ensure that many more Americans know their status.

"HIV testing is a crucial step in reducing new HIV infections, so that those infected with HIV can be linked to medical care and ongoing support to help them maintain safer behaviors," said Kevin Fenton, M.D., director of CDC's National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention. "This expansion will help ensure that more Americans have access to what could be life-saving information about their HIV status."

"Far too many Americans with HIV - more than 200,000 people - are unaware of their infection and may be unknowingly transmitting the virus to others," said Jonathan Mermin, M.D., director of CDC's Division of HIV/AIDS Prevention.

For more information, please visit the CDC website: <http://www.cdc.gov/hiv/topics/funding/PS10-10138/index.htm>. ☒

What Are They Testing For?

A Survey of Enteric Pathogen Testing at Laboratories in West Virginia

West Virginia suffers from under reporting of enteric illnesses as does much of the nation. In 2006, the Centers for Disease Control and Prevention (CDC) issued recommendations for laboratories regarding the identification of Shiga toxin-producing *Escherichia coli* (STEC) as an effort to enhance the surveillance and identification of these organisms. The complete recommendations are detailed in an MMWR article [55(38); 1042-1045] and can be found at <http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5538a3.htm>. The major recommendations were for laboratories to include STEC O157 in their routine bacterial enteric panel, and to screen all stool samples submitted for routine enteric bacterial panel for Shiga toxins using enzyme immunoassay or polymerase chain reaction.

In order to assess the implementation of these recommendations and gain an overall understanding of enteric pathogen testing by laboratories in West Virginia, the Division of Infectious Disease Epidemiology in conjunction with the Office of Laboratory Services (OLS) conducted a survey of the microbiology laboratory facilities in the state. The survey included questions regarding the testing practices and protocols at each facility, identified the pathogens that are included in the laboratory's routine enteric testing and which have to be specifically ordered by the physician, what

referrals laboratories are used throughout the state and method specific questions for Shiga toxin/*E.coli* testing.

The survey was sent to 67 facilities having microbiology laboratories in the state. Forty-seven surveys were returned for a response rate of 70%. Of the 47

responding laboratories, 45 (95.7%) report they accept stool specimens for testing, either in house or for forwarding to a referral laboratory.

Table 1 details responses regarding testing conducted "in

Table 1 – Location of Enteric Testing in WV Microbiology

Organism	Performed "in-house" (%)	Sent to referral lab (%)	Not accepted for testing (%)	Total Responses
<i>Salmonella</i>	25 (60)	17 (40)	0	42
<i>Shigella</i>	25 (60)	17 (40)	0	42
<i>Campylobacter</i>	20 (48)	22 (52)	0	42
<i>E.coli</i> O157 *	15 (38)	25 (62)	1(2)	40
Shiga toxin testing	8(19)	34 (81)	0	42
<i>Yersinia</i>	16 (38)	26 (62)	0	42
<i>C. diff</i> *	29 (69)	13 (31)	0	41
Enteric viruses	5 (12)	37 (88)	0	42
Ovum & Parasite	11 (26)	31 (74)	0	42

house" at the laboratory and those sent to a referral lab for processing. Of the 45 labs who accept stool specimens, roughly 42 answered questions regarding where testing is conducted. Percentages are based on the number of responses for each pathogen.

Of the 40 laboratories who report using a referral lab for some or all of their specimens, by far LabCorp is

Table 2 – Referral Labs Used by WV Microbiology Laboratories,

Name of Laboratory	Facilities Using Laboratory
Labcorp	23
Charleston Area Medical Center (CAMC)	7
Quest Diagnostics	4
Other hospitals	4
ARUP	2

used most frequently. Fifty-eight percent of labs send specimens to LabCorp for various types of testing. The referral labs and the number of facilities that report using them are detailed in Table 2.

Since LabCorp was the reference lab used most frequently, and the corporation

has a physical laboratory location within West Virginia, the survey was sent to them as well. The responses from LabCorp are included in all data in this report.

(See *Testing*, page 8)

(Testing, continued from page 7)

Figure 1 details responses regarding the testing practices of each facility. Percentages are based on the number of laboratories that report testing for the particular pathogen “in-house”. Facilities that send specimens to a referral lab for the particular pathogen were excluded.

Specific questions regarding methods for Shiga toxin/*E.coli* testing were asked. Of the 15 laboratories who do *E.coli* or Shiga toxin testing, 3 laboratories report using Sorbitol Maconkey (SMAC) agar, selecting sorbitol negative colonies and referring them to OLS.

Five laboratories report using SMAC agar and an O157 agglutination test, selecting sorbitol negative and O157 positive colonies and referring them to OLS, and 1 laboratory reports using an EIA test and refers Shiga toxin producing isolates to OLS. Five laboratories report using

an EIA test and refer Shiga toxin positive broths to OLS for speciation.

Twenty three (51%) of the 45 facilities who test stool specimens follow the recommendations of testing stool specimens for *Salmonella*, *Shigella*, *Campylobacter*

and screen for Shiga toxins or culture for STEC O157. For those laboratories doing STEC O157 testing and Shiga toxin screening “in-house,” the overall submission of those specimens to OLS for confirmation and serotyping / identification is very good. All labs doing STEC O157 testing and 10 of the 15 doing Shiga toxin screening report forwarding those specimens to OLS, however, the lack

of laboratories who have implemented the testing recommendations stands in stark contrast. Without more widespread implementation of the recommendations and therefore more pervasive testing for these organisms, the potential for under diagnosis and reporting continues. ☒

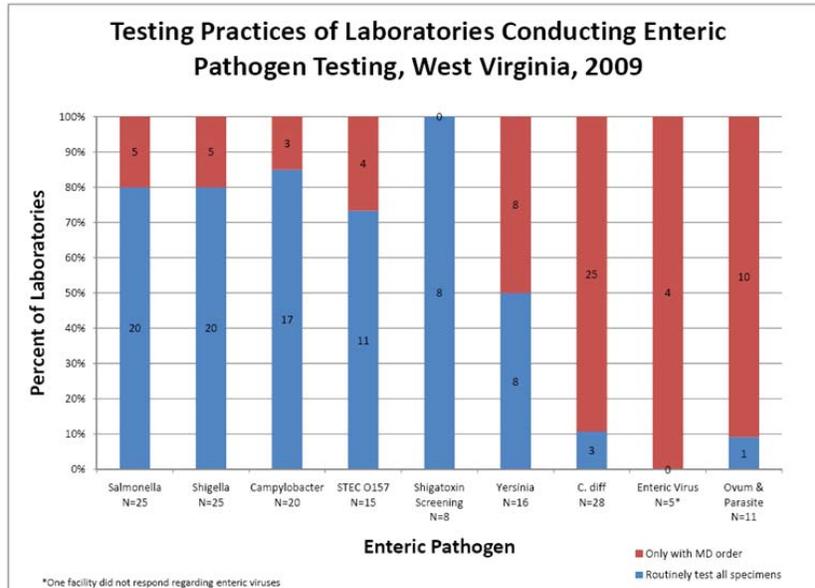


Figure 1

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 Anziulewicz. 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, or if you have suggested ideas you would like to contribute for a future issue.