



Centers for Disease Control
and Prevention (CDC)
Atlanta GA 30333

TB Notes
No. 4, 2011

Dear Colleague:

This end-of-year letter provides an opportunity to reflect on the remarkable advances made in TB control this year. In [Global Tuberculosis Control 2011](#), the World Health Organization (WHO) reports that the number of people with TB dropped to 8.8 million in 2010, after peaking at 9 million in 2005; TB deaths fell to 1.4 million in 2010, after reaching 1.8 million in 2003. Here in the United States, our state and local TB control partners reported a continued reduction in TB cases: 11,182 new cases in 2010, a reduction of 3.1% from 2009 (see [Reported Tuberculosis in the United States, 2010](#)). This steady achievement, despite insufficient resources, is evidence of their expertise and dedication—they are true public health heroes!

CDC's Division of Tuberculosis Elimination (DTBE) and its academic and public health partners had several noteworthy achievements, as well. The TB Trials Consortium (TBTC) concluded Study 26, which showed the efficacy of a new regimen of isoniazid and rifapentine for latent TB infection (LTBI) that is completed in 12 doses, rather than 270 doses of isoniazid. The findings were published in the December 8, 2011, issue of the *New England Journal of Medicine*. Also this year, DTBE began its laboratory service to state health departments for the molecular detection of drug resistance, shortening time to results from 42 to 2 days. Collaborative teams provided outbreak investigation assistance and program support in Arizona; Puerto Rico; Kane County, Illinois; and the Republic of the Marshall Islands. Other collaboration resulted in the development and implementation of the *Quality Assurance for TB Surveillance Data Training*. DTBE staff and colleagues published clinical trial results demonstrating that 36 months of isoniazid is superior to 6 months of therapy for LTBI in HIV-infected persons. This study, together with a previously published study that successfully evaluated a screening algorithm in Southeast Asia to detect TB in HIV-infected persons, informed and led to updated WHO policy recommendations. The *Core Curriculum on Tuberculosis: What the Clinician Should Know* was rigorously reviewed, updated, and published. We also celebrated the conclusion of the first 10 years of the TB Epidemiologic Studies Consortium (TBESC), and the selection of the sites for the new TBESC. These are remarkable accomplishments!

As we wrap up this year, it's not too soon to begin thinking about World TB Day—March 24, 2012. CDC has adopted the WHO 2012 World TB slogan, *Stop TB in my lifetime*. In the next few months, DTBE will be developing posters and other communication products to assist you in your own World TB Day efforts. We will keep you updated on planned activities and links that may be helpful.

We note with sadness the unexpected death in July of Phyllis Cunningham. Phyllis had served as the supervisor of the Mycobacteriology Laboratory at the Wadsworth Center, New York State Department of Health, and was a valued member of the Division of Infectious Diseases. Please see the Personnel Notes section of this issue to read more.

As I mentioned above, the TBTC has completed Study 26, a 10-year, 8,000-patient trial of ultra short-course treatment of LTBI, using a once-weekly 12-dose regimen of isoniazid and rifapentine, compared to standard 9-month daily therapy with isoniazid. We are pleased to report that on December 9, CDC published [guidelines](#) in the *Morbidity and Mortality Weekly Report (MMWR)* on the use of the new LTBI treatment regimen, based on the published results of Study 26 and two other recent studies. This issue includes an article summarizing the new *MMWR* guidance. Please read it, but be sure to refer to the guidelines themselves for specific regimen details.

In July 2011, the Tuberculosis Epidemiologic Studies Consortium (TBESC) held its 19th and last semi-annual meeting of its first 10-year cycle; that meeting is described in this issue. In September, I announced the results of the re-competition for the TBESC. This was a highly competitive process, and we received many strong applications; unfortunately, resources were insufficient to fund all proposals. After a thorough evaluation process, 10 sites were selected to be part of the new TBESC: the California Department of Public Health, the Denver Health and Hospitals Authority, Duke University, Emory University, Hawaii Department of Health, Maricopa County Department of Public Health, Maryland Department of Public Health, Public Health Seattle-King County, University of Florida Board of Trustees, and the University of North Texas Health Science Center. On December 8, 2011, the newly constituted TBESC met in Atlanta to discuss protocol development for the long-term follow-up of contacts with latent TB infection.

CDC staff successfully planned and carried out the 11th annual conference of the TB Education and Training Network and the 3rd annual conference of the TB Program Evaluation Network, held jointly in Atlanta September 20–22, 2011. This year's theme was *Waves of Change, Oceans of Opportunity*. Plenary topics included health literacy, partnerships with federally qualified health centers (FQHC), cohort review, and new technology tools for TB health education, training, and evaluation. Please read more about these conferences in this issue.

The 42nd Union World Conference on Lung Health was held in Lille, France, October 26–30. The conference theme this year was “Partnerships for Scaling-up and Care,” which highlighted the importance of collaboration in our common efforts to address the conditions affecting lung health. A small contingent of CDC staff attended to share the results of their important work.

The final 2011 meeting of the Advisory Council for the Elimination of Tuberculosis (ACET) was held December 6–7, 2011. After Center and division reports, we heard other CDC updates on Division of Global Migration and Quarantine (DGMQ) overseas screening activities and on program collaboration and service integration (PCSI), followed by ACET reports on TB elimination and on the drug shortage situation. ACET

workgroups then reported on the feasibility of TB elimination and on proposals for revising the structure of the National TB Program, in light of current reduced funding. These were followed by discussions about the future direction for TB control and elimination in the United States, with perspectives and options offered by several presenters. Resolutions were not finalized by the end of the meeting. We will provide more information on this critical issue as it becomes available.

As I review this year's accomplishments by DTBE staff and partners, I am once again proud and deeply impressed by the depth and breadth of our work. You have all worked hard this year. Here and globally, people affected by TB will likely be touched in some way by the work you have done. I hope you will take time to rest this holiday season, to reconnect with the persons and traditions that bring meaning to your lives, and to recharge for the challenges of next year!

Kenneth G. Castro, MD
Assistant Surgeon General, USPHS, &
Commanding Flag Officer
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No. 4, 2011

HIGHLIGHTS FROM STATE AND LOCAL PROGRAMS

New England Public Health Law Project – Partnering for Specialty Care at a Regional TB Referral Unit

Background

In many parts of the country, some patients might benefit from a specialized TB treatment unit. In such a unit, patients with complex disease or comorbidities can be treated, patient nonadherence issues can be addressed, and contagious patients can be isolated, involuntarily if necessary. Transferring care to a regional referral hospital through a legal agreement with the states is one way to provide comprehensive in-patient TB care where there are insufficient resources available at the local level.

Phase I: Defining the Problem

In 2007, the New England TB Consortium (NETBC) expressed the need for a specialized TB center to care for complicated and/or contagious patients who may require in-patient isolation. This concept evolved into a “National Call to Action on TB Isolation” adopted unanimously at the 2007 Northeast TB Conference which stated,

“This assembly requests that the National TB Controllers Association (NTCA)...bring together a working group of experts and stakeholders to establish the minimum legal standards and best practices for the use of enforcement powers including the isolation of infectious TB patients.”

The Call coincided with a national initiative—to which the NETBC contributed through the NTCA—resulting in a TB handbook for public

health and legal practitioners

(<http://tbcontrollers.org/docs/TBLawResources/TBControlLawsHandbook10012009.pdf>).

The conceptual framework for regionalization of TB care consisted of the following:

1. Assure equity of care (e.g., using the least restrictive means to ensure TB cure),
2. Define contagiousness (variable definitions used in each state),
3. Enforce public health protective measures,
4. Ensure patient rights and due process, and
5. Create an Agreement allowing interstate transfer of patients to the Shattuck Hospital.

Phase II: Creating a Regional Starting Point for Action

At the end of 2008, the NETBC decided to explore the legal basis for TB control in the region. TB program staff formed “The New England Public Health Law Project.” * This committee was championed by the staff and program managers from the Massachusetts, Connecticut, and Vermont TB Programs; the Harvard MPH/JD Program; the TB medical director at Shattuck Hospital; and DTBE.

The principal objectives of this project were to review TB laws in each state and to draft an Agreement to use the Shattuck Hospital as a regional comprehensive inpatient TB treatment facility. The Agreement would include provisions for due process, patient rights, and protection of the general public. During this phase, a law professor at the Western New England College School of Law, Katherine Van Tassel, researched and compiled the legal basis for TB control and isolation laws in the New England states and created a matrix modeled after one created by CDC’s Public Law Office.

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<http://www.cdc.gov/tb>,
 for other publications, information, and
 resources available from DTBE.

Phase III: Reaching an Agreement between States and the Shattuck Hospital

At the end of 2009, a student from the Harvard MPH/JD program, Sarah Sorscher, undertook a review of case law concerning involuntary isolation and began drafting an Agreement. After input from the Massachusetts public health attorney, Steve Chilian, and from staff at the Shattuck Hospital, the document was circulated for comments from attorneys representing the other states. This process required coordination among the programs and the departmental attorneys, and was supported by Lisa Thombley, who until recently served as DTBE's legal expert.

After review by the state attorneys, useful suggestions regarding services and fees were made by the contracts specialist and by the TB medical director, Lynn Sosa, in the Connecticut Department of Health. At the end of 2010, the Massachusetts TB controller, Sue Etkind, consulted with the state health commissioner,

John Auerbach, which led to a call with the New England public health commissioners. On that call, it was proposed that the respective state attorneys be convened to explore a consensus position.

In December 2010, the first call with attorneys identified new concerns. A major point of discussion involved jurisdictional issues and whether the court in the patient's home state would be willing to issue a final order suspending its jurisdiction while the patient was at the Shattuck Hospital or would require its own continuing judicial review. Similar questions arose regarding the jurisdiction of officials involved in interstate transport.

A second phone call with the state attorneys was held in February 2011. On that call it was decided to create two separate Agreements, one for voluntary admissions and one for involuntary admissions.

Future plans

The Agreements are now with the individual states where review may be required by the attorney general's office as well as the state health commissioner. In at least one state that does not have statutory power to enter into contracts with another state, legislative action is necessary.

Impact and Lessons Learned

Partner building: One key to success was the partnership formed between the region's TB programs and other entities. The TB programs were able to provide a clear statement of purpose that allowed for the state health commissioners to support the vision in practical ways. Likewise, building consensus among stakeholders made it easier to engage partners such as the Harvard MPH/JD program.

Consensus building: Stakeholders include several public health departments (i.e., Commissioners, TB programs, department attorneys, and contracts officials), the hospital, patients, and the state legislatures. Consensus

was reached by finding common ground among the TB programs, seeking out other stakeholders, engaging partners in a dialogue, and incorporating differing perspectives.

The long haul: Retrospectively, we could have condensed the process and focused on an Agreement with the Shattuck facility thereby completing that goal in less time. However, we would have lost the review of present laws and the deeper understanding of the strengths and gaps found in the existing legal basis for TB control.

—Submitted by Sue Etkind, Director, MA Division of TB Prevention and Control;
Heidi Jenkins, CT TB Control Program Manager;
Susan Schoenfeld, VT TB Control Program Manager;
Mark Lobato, New England TB Consultant, DTBE

* *New England Public Health Law Project:* Connecticut (Heidi Jenkins, Lynn Sosa), Maine (Kathy Gensheimer, Adriene Rister), Massachusetts (Sue Etkind, Linda Singleton, Steve Chilian), New Hampshire (Jill Fournier), Rhode Island (Michael Gomsciminski), Vermont (Susan Schoenfeld), Shattuck Hospital (Maria Tricarico, Marie Turner), Harvard MPH/JD Program (Katharine Van Tassel, Sarah Sorscher), Public Health Law Network (Dan Stier), and DTBE (Lisa Thombly, Mark Lobato)

Engaging Community Stakeholders to Control a Homeless Shelter TB Outbreak in Indiana

Background

Since March 2009, one of Indiana's largest counties has been working diligently to control a TB outbreak among the homeless population; this report provides an update as of October 2011. There have been 23 cases (22 males and 1 female) associated with this TB outbreak. Among the 23 cases, 22 were part of the same genotype cluster that is unique to the state of Indiana (except for one case that was counted by another state), while 1 clinical case was

epidemiologically linked to the cluster. One of the cases was diagnosed with TB at death; the remaining 22 (96%) started treatment. Eighteen (82%) of the 22 cases who started treatment have successfully completed treatment; two died shortly after TB diagnosis and treatment initiation: two currently remain on treatment (completion status of out-of-state case patient is unknown). All of the cases who successfully completed treatment are known to have received directly observed therapy (DOT) for the duration of their treatment.

Purpose

The county health department's TB program had to overcome many challenges in order to gain control of the outbreak. Within 1 month of the homeless outbreak, the county realized that the associated cases were not being cooperative in providing real names of close contacts. Many of the cases were only familiar with their close contacts by nicknames or on a first-name basis, which made it difficult to find them. Furthermore, this population is transient, so the community health workers would be unable to locate the few contacts who were identified. The county health department also recognized that some of the contacts with latent TB infection (LTBI) and cases were not motivated to complete treatment despite monthly monetary incentives. Many of the cases have other social risk factors (i.e., excessive alcohol and drug use) and medical conditions (such as HIV, diabetes mellitus, and others) that interfered with their adherence to treatment. With limited resources, the local health department realized the need to collaborate with other local agencies in order to overcome this population's barriers to treatment adherence and to gain control of the outbreak.

Community Collaboration Activities

Outbreak Response Meetings -- In October 2009, the county health department began having biweekly outbreak response team meetings to discuss the status of each TB case as well as identify solutions to the challenges in controlling this outbreak. After the county health department

had better control of the outbreak, the outbreak response team changed to meeting on a monthly basis. The participants included the County TB Program Coordinator, the County TB Medical Director, the County Epidemiologists, the County Lab Coordinator, the Outbreak Nurse Case Manager, the County Jail Nurse, the Outbreak Community Health Worker, the directors of the three homeless shelters that had been identified as sites of transmission, the County Social Worker, a non-profit homeless outreach organization, and the Indiana State TB Control Program (CDC Public Health Advisor). During the meetings, the status of each TB case was discussed and solutions were proposed for overcoming the challenges of the outbreak.

Cluster-Buster Meetings -- The county health department has four district clinics, thus most of the TB cases were managed by different public health nurses. With the patients not identifying their close contacts, the county health department had to strongly rely on common settings to be able to find and evaluate contacts. With the public health nurses being in various clinics located throughout the county, another challenge was gathering and sharing the necessary information regarding the common locations of the case patients. The county began having biweekly cluster-buster meetings to allow the public health nurses and community health workers to gather and discuss common factors among the frequented locations. Based on new findings in each meeting, the public health nurses and community health workers were given more specific questions to ask their patients before the next meeting. As a result, several new sites of possible transmission were identified and visited for targeted testing and for locating contacts who were lost to follow-up.

Letters of Understanding -- In order to overcome the challenge of identifying contacts to infectious cases, the county health department worked with their legal advisors and community agencies to develop letters of understanding. These documents allowed the county health

departments to share names of missing or lost infected contacts with agencies that agreed to adhere to confidentiality laws. The county health department was able to establish letters of understanding with three prominent men's homeless shelters, a well known non-profit agency serving the homeless, social service agencies, community health centers, and a hospital that the homeless population frequented. The health department was able to collaborate with a prominent hospital and all of its health affiliated clinics in order to routinely post a list of lost/missing infected contacts, using their electronic medical system. Therefore, when someone from the list presented to the emergency room or any of the health affiliated clinics, the medical system would alert the hospital staff that the person needed to be evaluated for TB and the county health department needed to be notified immediately.

Large Targeted Testing Events -- In summer 2009, the county health department conducted targeted TB testing in three prominent local homeless shelters for men. The health department chose to administer interferon gamma release assays (IGRAs) to avoid the possibility of losing individuals before they returned to have their TB skin test read. However, the health department still faced many challenges with finding those with positive IGRA results in order for them to get chest x-rays and medical examinations and to start treatment.

In early spring 2010, the county health department participated in an annual event popular with the homeless population that provides a series of health, social, and legal services to homeless individuals. During this event, the health department offered free IGRA testing and HIV testing to homeless individuals. In order to avoid losing track of individuals with positive IGRA results, the health department provided the individuals who received an IGRA test with a card printed with instructions to return on the following Saturday to a specific location. The chosen location was popular with the

homeless population on Saturdays because other agencies routinely visited there and provided them with free food and services on that day. The individuals who returned for their results received an incentive, and transportation was immediately provided for those with positive results so that they could receive chest x-rays, get medically examined, and start treatment. Those who went to get medically examined also received another incentive. During their medical examination, it was established where each individual would meet the community health worker for DOT. The county health department provided the same testing services at the same event that was held in spring 2011.

Weekly Testing in Homeless Shelters – In order to control the TB outbreak and prevent more cases in the future, in September 2010 the county health department began working with one of the prominent local homeless shelters to provide IGRA testing, twice a week, to new guests. As a result of this effort, the county local health department found the clinical case associated with the cluster. The county health department also provided funding to one of the prominent homeless day shelters for a nurse to provide directly observed preventive therapy (DOPT) to infected contacts and TB testing of new shelter guests.

Targeted Testing on the Streets – In collaboration with a local non-profit homeless outreach organization, the county health also performed targeted testing on the streets in order to screen some of the homeless individuals who did not frequent the local homeless shelters.

Environmental Control Measures – With some CDC funding and collaboration with the Indiana State Department of Health TB/Refugee Health Division, the county health department worked with the largest local homeless shelter to implement and maintain ventilation control measures (e.g., UV lighting, HEPA filters) before the influx of homeless individuals in the winter months of early 2011.

Results of Testing Activities -- Since beginning targeted testing in summer 2009, the county health department has done 1,421 TB tests (some individuals may have been tested more than once). There have been 185 (13%) individuals with positive TB test results (+QFN, TSPOT.TB, or TST); 158 (85%) of the 185 individuals with positive TB tests were fully evaluated with chest x-rays; and 132 (71%) individuals started treatment for LTBI. Of those who started LTBI treatment, 84 (64%) have completed and 33 (25%) currently remain on LTBI treatment.

Lessons Learned -- It would have been advantageous for the county health department to have had an established TB outbreak response plan. During the outbreak, the county's TB coordinator changed positions, which left the management of the outbreak to staff members who had other job priorities and staff who normally did not perform TB control duties. A written plan would have assisted the staff in managing the outbreak more effectively while in its early stages. Secondly, the county health department realized the importance of constant community input and collaboration. The local community homeless shelters and agencies offered invaluable resources and knowledge regarding the most effective means of finding, screening, and treating the homeless population. Lastly, the county health department recognized the need to have a TB nurse and community health worker designated to routinely work with the homeless shelters in order to maintain control of this outbreak and prevent any future outbreaks among this vulnerable population.

Future Plans -- The health department continues to provide testing services in the prominent local homeless shelters. The health department is also working with different shelters to develop written TB screening policies that incorporate cough logs, routine TB screenings for all new shelter guests, and routine education for staff and guests. The TB homeless outbreak response team continues to meet on a monthly basis and

has begun the planning for future shelter health fairs that will offer services beyond TB testing and HIV testing (e.g., flu vaccines).

—Reported by Shanica Alexander
CDC/DTBE PHA, Washington, DC

Class B Immigrants and Refugees, New Jersey, 2008–2009

Introduction

New Jersey (NJ) ranked fifth highest in the nation in percentage of foreign-born residents during 1990, 2000, 2007, 2008, and 2009, according to the American Community Survey, an ongoing statistical survey by the U.S. Census Bureau. During the last 10 years, the NJ TB program has consistently reported a higher morbidity among foreign-born residents than among U.S.-born residents. In 2009, 77% of its active TB cases were among foreign-born persons, many of whom originally came from countries with a high incidence of TB.

This report presents an analysis of data on immigrants and refugees referred to the TB Program for medical follow-up through the Electronic Disease Notification (EDN) system by the CDC Division of Global Migration and Quarantine (DGMQ) in 2008 and 2009.

Methods

To be admitted to the United States, immigrants and refugees are required to be screened for TB and other diseases that place the public health at risk. Applicants for U.S. immigration are screened in their country of origin by panel physicians. Refugees, persons who have crossed an international border and have a well-founded fear of persecution, are also screened overseas before being admitted to the United States.

Screening for tuberculosis according to the 2007 Tuberculosis Technical Instructions, includes sputum smears and cultures for tuberculosis suspects. It also includes testing for tuberculosis

infection (via tuberculin skin testing (TST) or interferon gamma release assay [IGRA]) for applicants 2-14 years of age being examined in a country in which the World Health Organization estimated tuberculosis incidence rate is ≥ 20 per 100,000. Upon diagnosing a TB condition and assigning a TB classification, the screening physician is required to complete four Department of State (DOS) forms, which applicants must have with them while traveling. At the port of entry, these forms are collected by the Customs and Border Protection (CBP) of the Department of Homeland Security, forwarded to Quarantine Stations, and then sent to the Electronic Disease Notification System (EDN) data entry center in Atlanta, Georgia.

The current TB classifications under the 2007 TB Technical Instructions (TB TIs) assigned to immigrants or refugees identified overseas with a TB condition are as follows:

A – Infectious TB disease: sputum smears and/or cultures are positive; requires waiver to enter the U.S.

B1 – Noninfectious TB disease: includes active, noninfectious pulmonary TB (i.e., abnormal X-ray, but sputum smears and/or cultures negative); inactive pulmonary TB; extrapulmonary TB; previously treated TB; old healed TB.

B2 – Latent TB infection (LTBI), needing evaluation

B3 – Recent contact to a known TB case

The EDN system contains data on all refugees admitted to the United States and immigrants admitted with certain medical conditions of public health importance. CDC personnel scan the forms into EDN. The system generates automatic electronic notifications to state health departments and provides access to scanned overseas medical records, examination forms, and addresses in the United States. In NJ, the TB program immediately updates the MS Excel spreadsheet and prepares a formal TB investigation form with all the documentation received via EDN. It is mailed overnight to the

chest clinic that will be providing services to the immigrant or refugee.

Persons with an overseas chest radiograph consistent with TB are required to have a medical evaluation in NJ within 30 days after receiving a referral from the TB chest clinic. The medical evaluation, including disposition, diagnosis, and treatment recommendations, should be completed within 90 days. All immigrants and refugees with TB conditions referred by EDN are located, evaluated, and treated free of charge.

After follow-up efforts at the local chest clinic have been completed, the TB investigation report follow-up form is updated by the nurse case manager and faxed to the TB Program. The MS Excel spreadsheet is updated and the TB follow-up worksheet is sent electronically to EDN.

Findings

Summary of data for persons with B1 TB classifications during 2009

- Of 382 B1 notifications received in NJ, 286 or 75% were fully evaluated and 96 or 25% were lost, relocated, or refused.
- Of the 286 persons fully evaluated, 1 was diagnosed with TB disease, 25 had inactive TB, and 105 had LTBI, for a total of 131 or 46% with a TB condition.
- Of the 131 with a diagnosed TB condition, 111 or 85% started treatment and 49 or 46% completed treatment; the patient with TB disease was among those completing treatment.

Summary of data for persons with B2 classifications during 2009

- Of 413 B2 notifications sent to NJ, 302 or 73% were fully evaluated and 111 or 27% were lost, relocated, refused, or died.
- Of the 302 fully evaluated, 2 were diagnosed with TB disease, 12 had inactive TB and 150 had LTBI, for a total of 164 (54%) with a TB condition.

- Of the 164 with a diagnosed TB condition, 146 or 89% started treatment and 65 or 44% completed treatment. Of the 2 patients diagnosed with TB disease, 1 completed treatment. The other returned to Bangladesh, taking with him a 1-month supply of medication. The patient also took a copy of his medical records to give his doctor. In addition, the NJ TB program sent an official international form notifying the physician of the diagnosis and treatment of the patient.

Comparison of 2009 to 2008

In 2009, New Jersey had 795 recent immigrants and refugees with B classifications referred to the state by DGMQ for medical follow-up, compared to 420 referrals in 2008, an increase of 89%. Despite the significantly increased burden of referrals, the percentage of those medically evaluated dropped by only 2%, from 76% in 2008 to 74% in 2009.

For these labor intensive and time consuming activities, the percentage yield of persons evaluated who were found to have a TB condition dropped from 57% (181/319) in 2008 to 50% (296/588) in 2009. New Jersey did see a reduction in importation of active disease: in 2008, the TB case yield was 5 cases; in 2009, the yield of these activities was 3 cases.

In 2009, New Jersey experienced an increase in the number of referrals received in 14 of its 21 counties. Hudson County was the most affected with a 215% increase in referrals, from 40 in 2008 to 126 in 2009. The other 7 counties with more than 50 referrals in 2009 were: Middlesex (116), Camden (74), Passaic (66), Essex (65), Atlantic (63), Bergen (61), and Union (58).

Data regarding treatment initiation or completion was not collected for the 2008 cohort, so a comparison to performance with the 2009 cohort could not be made.

Summary of the Workload and Outcomes, 2009										
Category	Total	B1	B2	Evaluated	TB	Inactive TB	LTBI	No TB	Start TX	Comp TX
Immigrants	692	311 45%	381 55%	514 74%	3 0.6%	37 7%	210 41%	264 51%	214 86%	103 48%
Refugees	103	71 69%	32 31%	74 72%	0	0	45 61%	29 39%	43 96%	11 26%
Total	795	382 48%	413 52%	588 74%	3 0.5%	37 6%	255 43%	293 50%	257 87%	114 44%

Conclusions

It was anticipated that the revised TB TIs would increase the number of referrals for medical follow-up, due to the introduction of screening for LTBI overseas among children in high incidence countries. In fact, such a foreign-based targeted testing program was welcomed by NJ. What was not anticipated was that 46% of Class B2 referrals with a reported positive Mantoux tuberculin skin test (TST) overseas would be TST negative in the United States. If the TST was not required to be repeated for persons with a B2 classification as a standard protocol during the evaluation process in 2009, regardless of existing documentation, many of these patients would have been misdiagnosed with LTBI and prescribed unnecessary treatment. The quality of the overseas screening must be improved so that the revised TB TIs can realize the intended benefit without unnecessarily taxing limited public health resources in the United States. Such improvement is likely since 2009 was the first year screening for LTBI was done as part of the overseas assessment. In addition, 27% of NJ's Class B2 referrals were from the Dominican Republic and issues had been reported by DGMQ regarding the PPD being used to TST in that country in 2009.

NJ anticipates the percentage of referrals with a B2 classification found to have no TB condition will increase even more significantly in the future due to the implementation of QuantiFERON® TB-Gold (QFT) testing in 2010 in New Jersey. This outcome is highly likely so long as the TST

is the predominate test used by panel physicians to screen for LTBI overseas.

The NJ public health community working in TB clinics involved in activities surrounding Class B referrals are commended for stable performance in the proportion of referrals for which an evaluation was completed in 2009 compared to 2008 (76% and 74%, respectively), despite a significant increase in the total number of referrals (89%). This objective was achieved through increased productivity of existing staff, not by adding staff. No detrimental effects of this increased workload were observed in performance towards national and state objectives, despite the fact that the five counties in NJ with the highest number of Class B referrals in 2009 were also the counties reporting the highest TB morbidity that year. The introduction of QFT in 2010 and the resulting decline in the number of contacts and Class B referrals requiring treatment will allow additional productivity gains in the future.

Of the 296 referrals evaluated as having TB conditions in 2009, a total of 257 persons or 87% started treatment, but a 44% completion rate must be improved to have a significant long-term impact on TB incidence in NJ. Improving performance, however, will be difficult in this highly mobile population.

—Reported by Mildred Perez
PHA, New Jersey TB Control Program

News from the Division of Tuberculosis Elimination

Guidelines Released on New, Shorter Regimen for LTBI

These are exciting times in TB control! Global resource-sharing partnerships are speeding up progress; new technologies are providing faster and more accurate diagnoses; and better drugs are making their way into the research pipeline. And while finding and curing TB is the first goal of TB control, preventing TB by treating latent TB infection (LTBI) is also a cornerstone of the U.S. TB elimination strategy. The Division of Tuberculosis Elimination is pleased to announce the December 2011 release of [guidelines](#) for using a new two-drug, 12-dose regimen for preventing TB disease. The guidelines are based on three randomized controlled trials, especially a 10-year, 8,000-patient study that was carried out by CDC's TB Trials Consortium (TBTC), "TBTC Study 26, PREVENT TB." The recommendations are available in CDC's *Morbidity and Mortality Weekly Report (MMWR)* dated Dec. 9, 2011.¹

The New LTBI Recommendation

The treatment trials showed that a regimen of isoniazid (INH) and rifapentine (RPT) taken once weekly for 12 weeks as directly observed therapy (DOT) is well tolerated, is as effective in preventing TB as other regimens, and has greater completion rates than 9 months of INH given without DOT. CDC recommends this regimen as an equal option for most persons diagnosed with LTBI who are at least 12 years old, with caveats listed below. The weekly dose is 900 mg INH and 900 mg RPT for persons weighing at least 50 mg (110 pounds). Please refer to the *MMWR* [guidelines](#) for specifics before prescribing the new regimen or making any programmatic changes.

Examples of settings in which the regimen offers advantages:

- Correctional settings
- Clinics for recent immigrants
- Homeless shelters

Persons for whom the regimen is not recommended:

- Children younger than 2 yrs
- HIV-infected persons taking antiretroviral therapy
- Women who are pregnant or expect to become pregnant during treatment
- Persons with LTBI with presumed INH- or RIF-resistant organisms.

Important things to keep in mind

- RPT induces or speeds up the metabolism of many drugs.
- Missed doses and other regimen alterations could lessen effectiveness or cause adverse effects: use DOT.
- Patients should receive clinical evaluations at least monthly.
- Patients should be educated about adverse events and asked about symptoms at each DOT encounter and at clinical evaluation visits.
- Patients with the following conditions should undergo baseline blood tests, and then follow-up tests as clinically indicated:
 - HIV infection
 - Liver disorders
 - Regular alcohol usage

What About Previous LTBI Recommendations?

CDC's previous recommendations for LTBI treatment regimens are unchanged. The recommendations for the new regimen do not replace the guidance for using 9 months of isoniazid; rather, they give clinicians another option for treating LTBI. The standard 9-month regimen has been shown to prevent TB in most groups, including children and HIV-infected persons, and is highly efficacious. The 9-mo INH regimen can still be used; however, the long treatment duration and rare but serious cases of liver injury have been long-time barriers to its use. When INH cannot be used, a daily, 4-month

regimen of rifampin (6 months for children) is still recommended.² The RIF/PZA regimen² is not recommended.

The new regimen was well tolerated in trials, and the most notable adverse effects were episodes of reversible hypotension, possibly indicating hypersensitivity. Adverse effects leading to hospital admission or death should be reported to local or state health departments for inclusion in this system (e-mail: LTBldrugevents@cdc.gov). Adverse events or medication errors also should be reported to FDA MedWatch at www.fda.gov/medwatch, by submitting a MedWatch Form 3500 (available at http://www.fda.gov/medwatch/safety/FDA-3500_fillable.pdf) or by calling 1-800-FDA-1088.

—Reported by John Jereb, Krista Powell, Stefan Goldberg, M. Elsa Villarino, and Philip LoBue
Div of TB Elimination

References

1. CDC. Guidelines for a combination regimen of isoniazid and rifapentine in 12 once-weekly doses under direct observation for treating latent *Mycobacterium tuberculosis* infection. *MMWR* 2011 Dec. 9; 60 (RR-#).
2. CDC. Targeted tuberculin testing and treatment of latent tuberculosis infection. *MMWR* 2000; 49 (RR-6).

DTBE Training Course on Quality Assurance for Tuberculosis Surveillance Data

Background

During the past several years, an interdisciplinary team at DTBE has been conducting training on the definitions and instructions for the Report of Verified Case of Tuberculosis (RVCT) data collection form.^{1,2} As a logical follow-up to the RVCT training, the RVCT training team submitted a proposal that was funded by DTBE to conduct a quality assurance (QA) training course for the 60 reporting areas of the National Tuberculosis Surveillance System (NTSS).

The team used the systematic health education process³ to develop the QA course. This five-step process includes

- Needs assessment
- Development
- Pilot test
- Implementation
- Outcome/impact evaluation



Needs Assessment

During 2010–2011, the RVCT QA training team conducted a comprehensive needs assessment to guide the design and development of the RVCT QA training course. The needs assessment included

- Collaborating with TB program staff from low, medium, and high TB-burden jurisdictions to prioritize QA components; determine a QA process; and collect existing tools used for QA. The team obtained information via site visits and conference calls;
- Meeting with surveillance staff from other CDC divisions such as the Division of STD Prevention, the Division of HIV/AIDS Prevention, and the Division of Viral Hepatitis to gather available QA materials;
- Reviewing published QA materials from various agencies;
- Reviewing the CDC TB cooperative agreement (CoAg), as well as reviewing the progress reports from the funded sites; and
- Prioritizing components and tools to include in the training.

The needs assessment identified five major QA components to cover in the course

- Case detection
- Data accuracy
- Data timeliness
- Data completeness
- Data security and confidentiality



Development

The RVCT QA training team used the results of the needs assessment and collaborated with other DTBE faculty (subject matter experts) to develop the content for each of the five components of the QA process. The course format included the following activities:

- Presentations from faculty
 - Slides
 - Handouts
- Exercises to apply the content
- Discussions to share experiences and expertise on the QA components
- Tools for jurisdictions to use and adapt to their setting
- End-of-course evaluation to obtain feedback from participants about the course

Presentations from faculty

Presentations were developed by the faculty for their assigned section of the course, including the QA process, sample studies, and recommendations. The following materials were also developed:

Slides

PowerPoint slides emphasized key points and provided visuals to explain the concepts.

Handouts for the presentations

The handouts included printed copies of the slides, exercises, and other relevant materials. These will be used in the future to develop the QA manual.

Exercises

Various exercises were designed to help course participants apply the content to life-like situations by solving case studies, identifying problems with data, and calculating timing issues.



Discussions

The team designed discussion sessions to provide an interactive course where participants could share their expertise and experiences. This would create an engaging environment conducive to learning and networking. In addition to asking questions to clarify content, participants would have the opportunity to describe how they conduct QA at their jurisdictions and provide examples of QA challenges they encounter.

Tools

An important part of the training curriculum was the 47 QA tools that jurisdictions can adapt to their settings. The tools include tables, charts, graphs, templates, and processes that are in commonly used electronic formats. They were

developed by staff from CDC and individuals from various jurisdictions including Jason Cummins (TN), Sheanne Allen (WA), Jill Fournier (NH), Eyal Oren (Seattle/King County, WA), Janice Westenhouse (CA), and Gayle Wainwright (OR). One of the main tools is a template developed by the RVCT QA training team to help jurisdictions write a QA protocol that is required in the CoAg.

Pilot Test

In July 2011, the team facilitated a pilot test of the QA Course. Eleven participants from various state and local health departments were involved in the pilot test. Many of the participants were also involved in the needs assessment. The course was presented and participants provided suggestions on what went well, as well as how to improve the materials, the presentations, and the schedule and flow of the course. The evaluation included end-of-section and end-of-course evaluations, as well as observations by course faculty. The course was revised based on the analysis of the evaluation results.

Implementation

The RVCT QA training team (Lilia Manangan, Elvin Magee, and Cheryl Tryon) and other faculty members conducted four 2-day trainings in Atlanta, GA, between July and September 2011. A total of 75 staff from 35 (58%) of 60 jurisdictions were trained. Eleven of the participants were involved in the pilot test.

Other faculty included Roque Miramontes (Introduction/QA), Sandy Price/Stacey Parker (Data Flow and System QA Reports), Bob Pratt (Data Accuracy), Lori Armstrong (Data Validation Pilot Project), Carla Jeffries (Missing and Unknown Report), Beverly Metchock/Angela Starks (Laboratory), Glenda Newell (Case Count Timeliness), Kai Young (National TB Indicators Project), Rachel Yelk-Woodruff (RVCT Completeness Study), and Juliana Grant/Sandy Althomsons/Brian Baker (TB GIMS).

Course Evaluation

Participants from the four trainings completed an end-of-course evaluation form consisting of objective and non-objective questions. Results of the evaluations indicated that participants learned about the QA process and liked sharing information on how other jurisdictions implement the QA components. They also valued the QA tools and are looking forward to using them in their setting. Participants stated that some of the most important things they learned were the five QA components and how they relate to the requirements in the CoAg and the written QA protocol. Most of the participants appreciated the thought and hard work that went into implementing the course and want this to continue. Selected participant comments include

- “I learned a great deal from this pilot. This course will be valuable to the states and will lead to great discussions and changes in the way QA is performed. This will therefore lead to great improvement in the quality of the data.”
- “Very informative – lots of info I can actually use and apply to day-to-day activities (i.e., tools)”
- “Identified a number of good suggestions on how to improve my state’s level of accuracy with new tools provided by different topic speakers.”
- “Great job! Please continue this class. It was very informative and I learned a lot.”

Future activities

Develop a QA manual -- A QA manual will be developed that can be used as a reference guide and training manual. It will include many of the handouts developed for the course, exercises to apply the content, glossary, and examples of the tools. A CD will provide the tools so that jurisdictions can use them and adapt them to their setting. The print version of the manual will be available in 2012 and will also be available for downloading from the CDC DTBE website.

Possibly provide a few additional trainings and webinars -- Course participants have requested that the QA course be repeated in the future and

a series of webinars be developed. These will provide learning opportunities for others who could not attend this year. The QA training team is determining the feasibility for conducting these additional activities.

—Reported by DTBE's RVCT QA Training Team:
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(emagee@cdc.gov), Cheryl Tryon (ctryon@cdc.gov)
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References

1. CDC. DTBE's Comprehensive and Innovative Training Program on the Revised RVCT. TB Notes Newsletter, No. 3, 2009.
2. Magee E, Tryon C, Forbes A, Heath B, Manangan L. The National Tuberculosis Surveillance System Training Program to Ensure Accuracy of Tuberculosis Surveillance Data. *J Public Health Management Practice*, 2011, 17(5), 427–430.
3. National Institutes of Health. *The Pink Book - Making Health Communication Programs Work*; National Cancer Institute; U.S. National Institutes of Health; Available at <http://www.cancer.gov/cancertopics/cancerlibrary/pinkbook/page1>

TB EDUCATION AND TRAINING NETWORK UPDATES

Eleventh Annual TB ETN Conference and Third Annual TB PEN Conference

The TB Education and Training Network (TB ETN) held its eleventh annual conference September 20–22, 2011, in Atlanta, Georgia, in conjunction with the third annual TB Program Evaluation Network (TB PEN) Conference. Participants numbered 175 and represented state and local TB programs, nonprofit organizations, and academia, from the United States as well as from many other countries.

This year's theme, *Waves of Change, Oceans of Opportunity*, inspired exciting presentations and activities throughout the 2 1/2-day conference. Plenary topics included health literacy,

partnerships with federally qualified health centers (FQHCs), cohort review, and new technology tools for TB health education, training, and evaluation. Presenters from TB program areas spoke on a variety of topics, including assessment of TB knowledge, attitudes, and practices of persons living with HIV in San Diego County; the development of culturally appropriate messages for the Navajo Nation; the evaluation of a hospital discharge requirement for infectious TB patients in New York City; and the challenges associated with decentralizing the entry of TB surveillance data.

In addition to the plenary sessions, there were a variety of engaging and useful breakout sessions held throughout the conference. Session topics included cultural competency, social media, writing for the web, webinars 101, basic evaluation data analysis, and moving forward from evaluation findings.

A roundtable session was held for TB ETN and TB PEN members who were interested in course development, cultural competency, and Web development. The roundtable sessions provided an opportunity for participants to network, discuss topic challenges, and share common experiences.

This conference marked the second year for the TB Educator of the Year Award and the Project Excellence Award. These awards were established in 2010 to recognize excellence in TB health education and training by TB ETN members around the world.

The TB Educator of the Year award recognizes an individual who has shown dedication and leadership in the field of TB education and training. The recipient of the 2011 TB Educator of the Year Award was Debra Stephens. Debra is the Southern Illinois TB nurse consultant and has been the Illinois TB Education and Training Focal Point for the past 8 years. One of Debra's major contributions to the TB program has been her collaborative work with the American Lung Association (ALA) of Illinois to develop and

implement the Illinois TB 101 course. This course has been conducted twice annually since 2005. Debra has expanded the training offered in Illinois through her service as TB Focal Point by coordinating and hosting Heartland National TB Center–sponsored courses, including the Advanced Nurse Case Managers course in 2005 and 2010, the TB Intensive for Physicians in 2007, the TB on College Campuses course in 2008, the TB Control in Correctional Settings course in 2009, and the TB and Substance Abuse course in 2011.

The Project Excellence Award recognizes an exceptional health education and training product or activity developed within the past 2 years. The recipient of the 2011 Project Excellence Award was the video, *TB: The Timeless Disease*. It was developed by Shawna Buccholz, clinical TB Nurse Educator for the British Columbia Centre for Disease Control, with team members Maria MacDougall, Nash Dhalla, and April MacNaughton, nurses who work specifically with Aboriginal communities. This video brings historical knowledge and cultural understanding about TB to health care professionals working with these communities; it was developed with the permission of the Aboriginal communities. Because the video was made with Aboriginal involvement, its appeal, cultural relevance, and acceptance by Aboriginal communities is enormous. The video includes personal experiences and narratives provided by Aboriginal people who had TB and/or experienced the TB sanatorium era, and highlights the need to prioritize and address social determinants of health.

Learning and networking continued outside of formal plenary and breakout sessions. Participants viewed posters submitted by their colleagues and visited exhibits featuring TB education and training resources from DTBE, the Regional Training and Medical Consultation Centers, and state and local TB programs, among others. Tuesday evening's social event

gave attendees a chance to catch up with old friends and make new ones.

—Reported by Peri Hopkins, MPH,
and Sarah Segerlind, MPH
Div of TB Elimination

TB ETN Member Highlight:

2011 TB Educator of the Year

In this issue we highlight Debra Stephens, RN, BSN, MPH, TB Nurse Consultant with the Illinois Department of Public Health, who won the 2011 TB Educator of the Year Award. This honor was announced on September 20 at the 2011 TB Education and Training Network annual conference, which is held in Atlanta.

Debra was assigned to be the TB Education Focal Point for the Illinois Department of Public Health (IDPH) TB Prevention and Control Program in 2005, and this is when she became a member of TB ETN. She is responsible for overseeing and implementing Illinois' TB Training and Human Resources Development Plan and providing consultation on TB case management for 48 county local TB control authorities. Debra earned her MPH at Saint Louis University School of Public Health, St. Louis, MO, and her BSN from Maryville University, St. Louis, MO.

Debra's program, IDPH, partnered with Heartland National TB Center and the American Lung Association (ALA) of Illinois to present a 1-day Substance Abuse and TB course in Springfield, IL, in April 2011. Other trainings with this group of partners has included the TB Nurse Case Managers course in 2010, the TB in the Correctional Setting course in 2009, the TB on College Campuses course in 2008, the TB Intensive course in 2007, and the TB Nurse Case Managers course in 2006.

Debra integrates TB training into other programs by participating in conference planning committees for Illinois statewide trainings; this

includes Immunization/Communicable Diseases, HIV/AIDS/STD/Hepatitis, Bi-State Infectious Disease (Missouri/Illinois), Bi-State TB Elimination, and most recently, USDA initiatives considering disease transmission between animals and humans.

Debra collaborated with the Illinois ALA to develop and implement the Illinois TB 101 course, which is designed for new nurses from rural, low-incidence counties. In 2005, Debra worked closely with Diane Meyer of the Illinois ALA to evaluate the needs assessment and develop the TB 101 course. The course includes 10 modules for training, with a corresponding 12-module binder provided to each participant and updated as the course changes. The training consists of PowerPoint presentations, lectures, hands-on exercises, a CDC skin test training video, and an interactive contact investigation activity. Each participant completes a pretest and posttest to evaluate the effectiveness of the training. There is also an overall course evaluation and 3-month post evaluation to provide feedback so that the course can be changed to meet the needs of the attendees. To date, there are only seven counties in the state of Illinois whose staff have not attended this training.

Debra has served in the U.S. Air Force Reserve since 1992. She was a flight nurse on the C-9 aircraft and held that position during 1992–2005 at Scott Air Force Base, IL. In 2003 she was mobilized and deployed to the Middle East in support of two operations, Iraqi Freedom and Enduring Freedom, working aerovac* on the C-130 aircraft transporting wounded soldiers to hospitals based throughout the Middle East; she later became Chief Nurse for the region. In 2005, she was assigned to work as a biosurveillance analyst in the Surgeon General's office at US NORTHCOM, Peterson Air Force Base, CO. In 2006, she was promoted to the rank of Colonel. She continues to serve as a reservist in this capacity and plans to retire from the military in 2012.

Debra has always enjoyed teaching, so her role as TB educator allows her to provide education in various settings with the strong support of her supervisor, Michael Arbisi, and the two other Illinois nurse consultants, Elaine Darnall and Carrie Storrs. "I always like to provide TB education on topics that are unique, to keep interest active and provide local TB program staff with information that can also be used in other program activities, since staff usually work in more programs than just TB." One example that Debra cites involved collaborating with the Illinois state police to provide education for nurses about methamphetamine (meth) users. At each of three state regional meetings for local TB public health nurses, she provided information about the unique challenges of working with this population, and her state police colleagues described clues in or around the home that suggest a person is using meth, or that meth is "cooked" in the home. This information was especially important for those nurses who travel to rural areas to provide DOT. The training has been a huge success, as evidenced by 100% of evaluations rating this presentation the best in all areas—including content, presentation style, objectives met, and useful information to take back to the job—and has been repeated at other state TB meetings. Debra has also provided education at regional TB meetings about human trafficking. "Many of these individuals are foreign-born people from countries with a high incidence of TB," Debra notes.

Debra nicely summarized TB ETN's value to TB educators: "TB ETN provides the opportunity to network with peers and also to learn of new technology venues to provide education. This is going to be vital for the future of TB education as budgets continue to shrink. TB ETN is providing me with the tools to continue to provide TB education in the State of Illinois."

*Aerovac refers to specialized medical transportation units in the U.S. Air Force.

Tuberculosis Video Wins TB ETN Project Excellence Award for 2011

A training resource video on TB, created in cooperation with the British Columbia (BC) Centre for Disease Control (BCCDC), has been awarded the prestigious Project Excellence Award by TB ETN. This international award recognizes exceptional health education and training products or activities created within the past 2 years.

The winning video, entitled *TB: The Timeless Disease*, was produced by the Community Health Associates of BC, a BC First Nations non-profit organization, in conjunction with the TB Services for Aboriginal Communities Program at the BCCDC and Health Canada's First Nations and Inuit Health (FNIH) TB Programme, BC Region. Funding was provided by Health Canada.

The video was created to bring historical context and cultural understanding about TB to health care professionals working in Aboriginal communities. It provides an overview of TB services and serves as an education resource that can be used to increase clinical nursing competencies. BCCDC nursing staff involved in the project included Shawna Buchholz, Nash Dhalla, and Maria MacDougall, and April MacNaughton from FNIH. In addition, Dr. Victoria Cook (BCCDC) and Dr. Marcus Lem (FNIH) were acknowledged for their guidance. The TB video team is pictured here.



The video was first screened in February 2011 at the International Union Against Tuberculosis and Lung Disease North American Region Conference in Vancouver. It has since been distributed to Aboriginal communities across Canada, and requests for copies have come from as far away as Greenland. The announcement of this award was made on Sept. 20 at the CDC-sponsored Tuberculosis Education and Training Network Conference in Atlanta, GA.

The video is available on the BCCDC website at <http://www.bccdc.ca/dis-cond/az/t/Tuberculosis/TBVideos/default.htm>

Doing More with Less: New Budget Realities and Implications for TB Education, Training, and Evaluation

Tough economic times often translate into tighter public health budgets and reduced spending for education, training, and evaluation. With this in mind, one of the many sessions offered to attendees of the 2011 TB ETN-TB PEN Annual Conference was aimed at providing information on innovative ways to maintain and possibly even enhance these critical program components in an era of diminishing resources.

During an energetic and engaging presentation, Virginia's TB Control and Prevention Program Director, Jane Moore, and Southeastern National TB Center Director of Education/Training, Karen Simpson, shared a wealth of knowledge and experience, and reminded us of many excellent existing resources and sources of resources for TB education, training, and program evaluation, including

- CDC TB website <http://www.cdc.gov/tb>
- CDC Publications and products <http://www.cdc.gov/tb/publications/default.htm>
- CDC product order form <http://wwwn.cdc.gov/pubs/tb.aspx>
- CDC TB Calendar <http://www.cdc.gov/tb/events/default.htm>
- Find TB Resources <http://www.findtbresources.org/>

- RTMCC products
<http://snct.medicine.ufl.edu/RTMCCProducts.aspx>
- SNTC's archived webinars
<http://snct.medicine.ufl.edu/Webinars.aspx>
- Global TB Institute Archives:
<http://www.umdni.edu/globaltb/audioarchives.htm>
- Curry's archived web-based training:
http://www.currytbcenter.ucsf.edu/training/arch_webtrain.cfm
- Heartland's archived training:
<http://www.heartlandntbc.org/trngarchives.asp>
- NPIN E-newsletter
<https://www.cdcnpin.org/framework/ui/register.aspx>
- Stop TB USA e-newsletter email to add
jseggerson@tbcoalition.com
- TB Research
<http://www.cdc.gov/tb/topic/research/default.htm>

Participants were encouraged and inspired to think “outside of the box” to do the best they can with what is available to them. For example, when scheduling education and training events, beginning events later in the morning could reduce per diem costs and cut down on the number of out-of-town participants requiring accommodation the night before. Similarly, requiring participants to complete prerequisite activities or reading can reduce the amount of time needed for the event. Leveraging existing state or local resources such as video or teleconferencing equipment for training events can also substantially reduce costs and expand access.

If you would like to learn more about how the Virginia State TB Control and Prevention Program and SNTC are doing the best they can with what they have, please contact jane.moore@vdh.virginia.gov or Karen.simpson@medicine.ufl.edu.

Suggestions on doing more with less will be featured in upcoming editions of *TB Notes*. If you have suggestions or examples you would like us to share, please email them to tbetn@cdc.gov.

—Reported by Linette McElroy, Jane Moore,
and Karen Simpson
TB Education and Training Network

TED Talks: Ideas Worth Spreading!

TED, an acronym devolved from technology, entertainment, and design, started out in 1984 as a conference. In 2007, under the moniker “ideas worth spreading,” TED.com was launched, providing free online access to archived TED conference presentations. Today, the popularity of TED conferences and online viewing of TED Talks continue to skyrocket as the TED Talk topics become even more diverse.

The TED.com website describes TED as a global community welcoming people from every discipline and culture who seek a deeper understanding of the world. Indeed, there are hundreds of TED Talks available at TED.com, ranging from 3 to 18 minutes in length, covering almost any subject imaginable. New Ted Talks are added every day.

A quick search of the site for TED Talks on TB brought up these interesting clips:

- James Nachtwey's photo essay on XDR TB
- Bart Weetjen's work using rats to detect *M. tuberculosis* in laboratory samples

As a testament to the range of TED Talk topics, here are a few other TED Talks I have enjoyed recently:

- Hans Rosling: *Let My Dataset Change your Mindset*
- Elizabeth Gilbert on nurturing creativity
- Abraham Verghese: *A Doctor's Touch*
- Jake Shimabukuro plays “Bohemian Rhapsody”

If you are interested in learning more on a particular topic, hearing what someone you admire has to say about something, or want to start an interesting conversation at dinner or the water cooler, visit Ted.com. You won't be disappointed.

—Reported by Linette McElroy
TB Education and Training Network

TB PROGRAM EVALUATION NETWORK UPDATES

Highlights from the 2011 TB PEN Conference and Program Evaluation Focal Point Meeting

For a third year, the TB Program Evaluation Network (TB PEN) joined forces with the TB Education and Training Network (TB ETN) to conduct a joint TB ETN/TB PEN Conference. The TB PEN Training Team collaborated with the TB PEN Conference Planning Committee to develop the first TB PEN New Member Orientation. The New Member Orientation preceded the conference opening session and provided attendees with an introduction to TB PEN, defined the role of the focal point, presented resources for program evaluation, and provided an overview of the TB PEN Conference sessions. Conference activities also included joint plenary sessions, skill-building sessions, expert consultation, and a poster session. The conference social at the end of the first day brought TB PEN and TB ETN members together for an excellent evening of networking.

TB PEN participants were able to attend TB PEN skill-building sessions which combined theory with practical application and provided a variety of speakers representing both CDC and state and local TB programs. Evaluation session topics included evaluation 101, basic data analysis / statistics 101, moving forward from evaluation findings, program evaluation plan assessment, and a panel with selected programs on four program evaluation focus areas. TB PEN

plenary sessions focused on cohort review and CDC guidance on developing an evaluation plan and interim and annual reports.

As a direct result of previous conference evaluations, the expert consultation sessions were redesigned this year to provide participants with an opportunity to interact one-on-one or in small groups with their respective program consultant or program evaluation representative. This was structured to assist focal points with gaining a better understanding of program evaluation expectations and effectively addressing specific requirements pertaining to their cooperative agreement.

Another change this year saw the TB program evaluation (PE) focal point meeting incorporated into the conference as a breakout session. Approximately 46 individuals who serve as the assigned points of contact for TB program evaluation within their respective agencies were in attendance. The focal point meeting provided updates on TB PEN activities, incorporated a skill building session on survey design / designing questionnaires, and included a focal point feedback session. The focal point feedback session was an opportunity for PE focal points to brainstorm challenges and solutions to program evaluation in their respective jurisdictions and to provide the TB PEN Steering Committee and DTBE feedback on their needs for program evaluation guidance and technical assistance.

Attendees also participated in the poster session featuring 34 posters, 14 of which represented TB program evaluation. Two of the posters representing TB PEN were selected for oral presentation. The posters, titled: *Challenges Associated with Decentralizing the Entry of Tuberculosis*; and *Evaluation of a New Health Code Requirement for Discharging Infectious Tuberculosis (TB) Patients from New York City Hospitals* were presented respectively by Sandra Matus from Maryland and Michelle Macaraig from New York City during the local presentations plenary session.

Overall attendance at the TB PEN breakout sessions averaged 65 participants. TB PEN focal point meeting evaluations indicated that the majority felt it was useful to attend the TB PEN focal point meeting (88%), thought the focal point feedback discussion was engaging (83%), and agreed that the survey design session was informative (95%). Focal points also indicated that they prefer to attend the TB PEN Conference on an annual basis (70%) in the month of September (61%).

Suggestions for the 2012 TB PEN Conference include:

- Designing sessions to be more participatory and how-to;
- Providing more subject matter sessions, such as data analysis and evaluation plans; and
- Offering more practical examples and sharing from program areas.

The TB PEN Conference Planning Committee convened again in November 2011 and will begin planning for the 2012 TB ETN & TB PEN Conference in January 2012. Please contact the TB PEN Conference Planning Committee at topen@cdc.gov if you have further suggestions for next year's conference or would like to participate on the planning committee.

—Reported by Brandy L. Peterson, MPH, MCHES
Div of TB Elimination

TB PEN Focal Point Needs Assessment: Preliminary Results

Introduction. With the increasing emphasis on program evaluation activities within TB prevention and control programs and the introduction of the National TB Indicators Project (NTIP), the leadership at CDC's Division of Tuberculosis Elimination (DTBE) determined the value in having a designated individual responsible for evaluation activities. Initiated by DTBE in 2009, a designated individual at each of

the 68 federally funded TB prevention and control programs was to serve as the evaluation focal point for their program. Together, these individual focal points formed a TB Program Evaluation Network (TB PEN). The role of the TB PEN and the evaluation focal point was designed to parallel the TB Education and Training Network (TB ETN), in existence since 2001, along with the designated focal point for training and education.

In addition, DTBE convened a TB PEN steering committee in recognition that the newly formed network would benefit from the guidance of a diverse group of TB and evaluation professionals representative of the TB PEN membership. The Steering Committee includes representatives from state and local/city TB programs, the Regional Training and Medical Consultation Centers, National TB Controller's Association, TB ETN, TB Epidemiologic Studies Consortium, TB Trials Consortium, and DTBE. The Steering Committee guides TB PEN by reviewing and assessing applicability of program findings; advising DTBE on national evaluation focus; and identifying needs for evaluation training, technical assistance, and tools.

The TB PEN steering committee decided to assess the training needs of the evaluation focal points to gain greater clarity about the individuals serving in the role, as well as the additional training and support that might be required for the focal points and the programs to be successful in the evaluation activities expected of them. This preliminary report focuses on the results obtained in several areas of greatest interest to the TB PEN steering committee: 1) the characteristics of those individuals assigned the role of TB PEN focal point, including their previous program evaluation experience; 2) the current program evaluation activities conducted in the state TB programs; and 3) additional training identified by the respondents that would increase their success in evaluation activities.

Methods. Members of the TB PEN steering committee developed the assessment which

targeted several areas: 1) the role of TB PEN focal point; 2) program evaluation activities of the program, including the NTIP indicators selected by the programs for initial emphasis; 3) previous evaluation experience; 4) training needed in general, and 5) additional training specifically focused on cohort review and evaluation tools.

The on-line assessment tool was launched on April 18, 2011, using Qualtrics Survey Software. The assessment was distributed to the individuals listed as the program TB PEN focal point. The assessment remained open for 4 weeks, and two follow-up reminders were sent to the study universe after the initial invitation to participate in the assessment was distributed.

Results. A total of 88 individuals were invited to participate in the survey. Although 66 surveys were initiated, there are complete data for 50 respondents (57% response rate). Response rates vary from question to question; the number of respondents (N) is reported for each question.

Description of the individuals who serve as TB PEN Focal Points. The TB PEN Focal Points who completed the needs assessment represent diverse roles within their respective state TB Prevention and Control Programs (Table 1). Almost one quarter of the respondents (24%) were Program Managers; however, Epidemiologists (22%), TB Controllers (20%), and Nurse Consultants (19%) were also heavily represented among the respondents. Those indicating "other" roles included public health advisors (PHAs), IT/Data Analysts, and other TB coordinating roles.

Table 1. Respondents' Role within State TB Program.

Role	Number	Percent
TB Controller	12	20
Program Manager	14	24
Health Educator	2	3
Epidemiologist	13	22
Nurse Consultant	12	21
Other	10	10

The majority of the respondents reported working in TB prevention and control for more than 5 years (62%).

The majority (69%) did not have a dual role as both the designated TB ETN and TB PEN focal point, and had been the designated TB-PEN focal point for more than 1 year (61%). Three quarters (74%) indicated that they had less than 50% for their time allocated to TB program evaluation activities; however, almost half (48%) indicated that they had less than 25% of their time allocated to evaluation. Nevertheless, 52% of all respondents indicated that the time allocated was sufficient to carry out TB program evaluation activities.

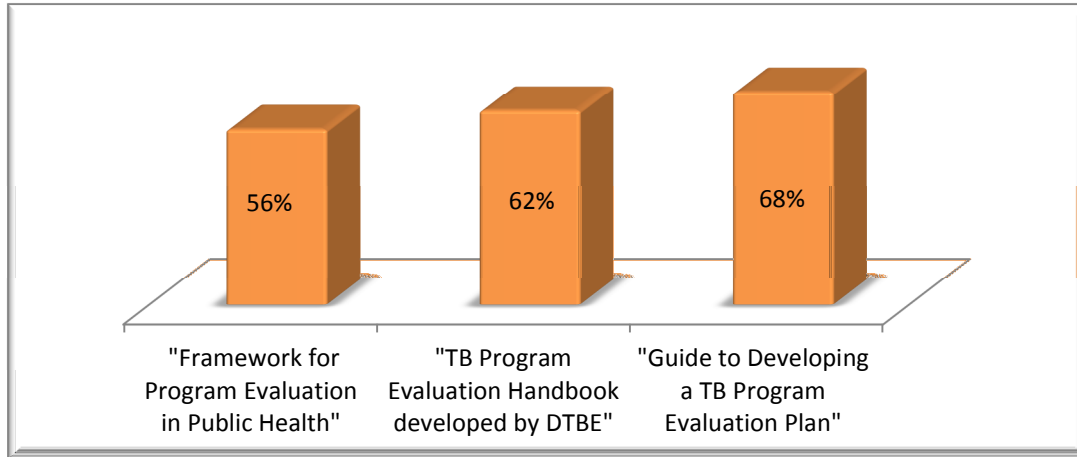
Seven (12%) respondents stated that they were exclusively responsible for evaluation; however, 6 of the 7 (86%) stated that they did not feel supported in this role. Self-identified barriers included competing priorities both for themselves and their staff members, as well as a need for evaluation skills training for themselves or adding staff members trained in evaluation.

Evaluation experience. When asked about their evaluation experience, 39 (75%) of the respondents reported having received formal training in program evaluation. The most common forms of training described were from an academic setting, usually as part of a graduate program. Trainings provided by CDC or TB PEN were also often cited. In addition, respondents mentioned evaluation training provided via webinars and other conferences. Over half of the respondents (52%) reported having been involved in program evaluation activities prior to the DTBE requirement for program evaluation activities; data collection (96%) and data analysis (92%) activities were reported by the greatest percentage of respondents who were engaged in evaluation activities prior to the establishment of the requirement.

Several evaluation documents have been developed by CDC, and respondents were asked to identify which of these resources they had read or consulted in their role as the evaluation

focal point. The majority of respondents reported that they have used/read the different documents available to them (Graph 1).

Graph 1. Percentage of respondents who have accessed existing evaluation documents

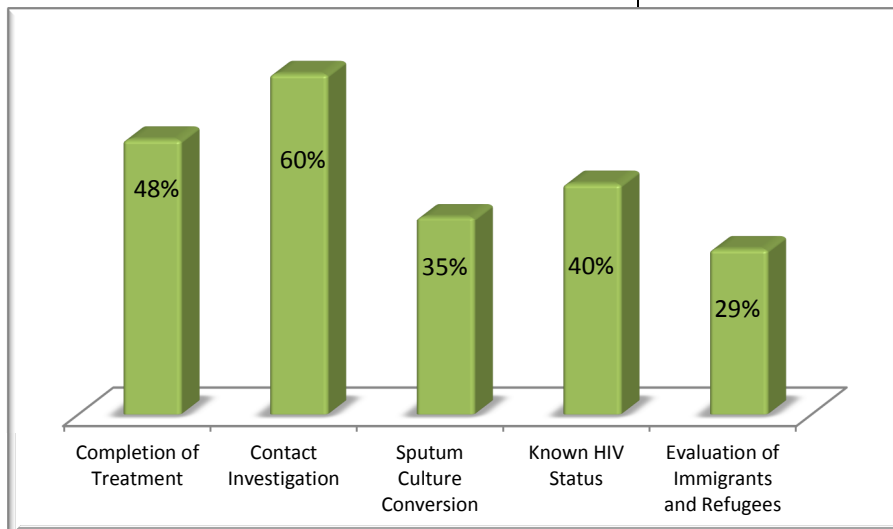


Program evaluation activities

When asked about program evaluation activities in their state, 77% indicated that the TB program had developed clear and achievable goals for program evaluation, and 90% of those programs had developed specific and measurable objectives to achieve these goals. Almost three quarters (70%) had developed an action plan for evaluation; 83% of those with an action plan reported having a timeline for completion of activities for each objective.

Respondents were asked to indicate the National TB Objectives/Performance targets identified as a focus for their state's evaluation plan (Graph 2). The top five most frequently cited targets were contact investigation (60%), completion of treatment (48%), known HIV status (40%), sputum culture conversion (35%), and evaluation of immigrants and refugees (29%). Additional targets cited by more than one quarter of the respondents included data reporting (27%), program evaluation (27%), and universal genotyping (25%).

Graph 2. Reported National TB Objectives/Performance Targets



Training Needed by the TB PEN Focal Points

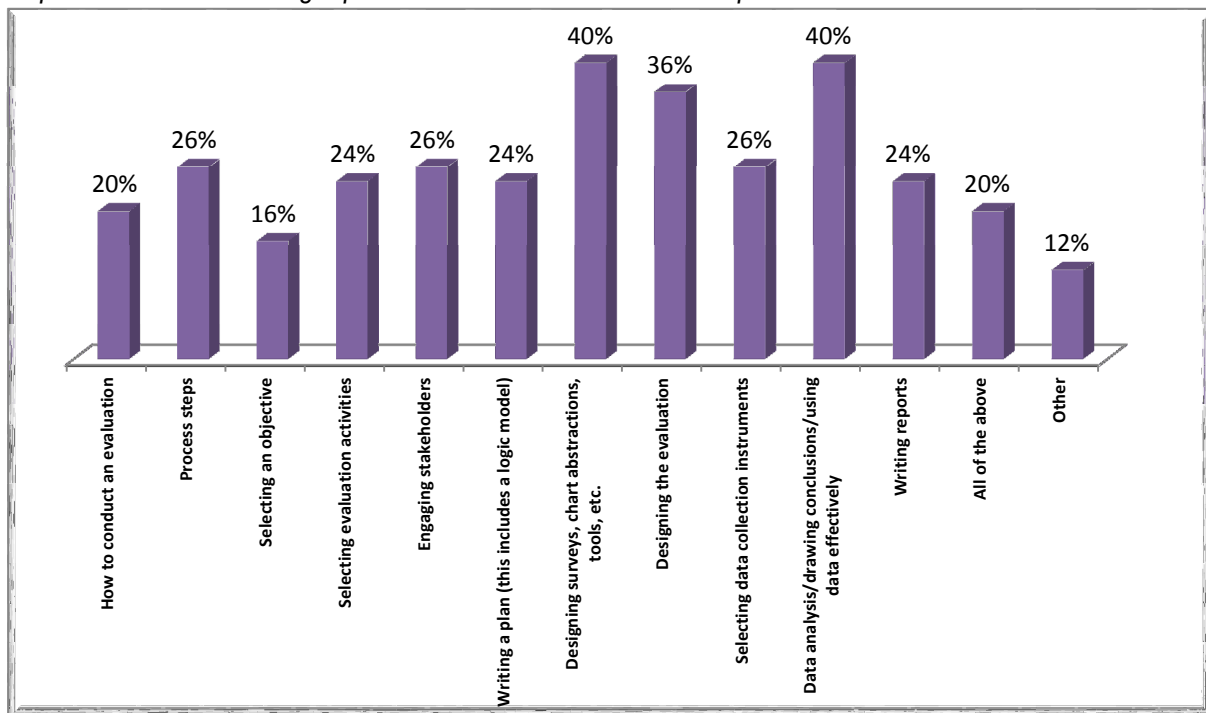
The assessment was designed to determine the additional training required for focal points to feel confident in their role and to be successful in guiding the evaluation activities of their TB program. A list of potential training topics was provided for ease; however, the respondents were also able to identify

topics not included in the list. The percentages of respondents identifying the additional training topics are reported on Graph 3. Although all of the topics for additional training were identified as important to their success by 25% of the respondents, the most frequently cited additional training was the development of various types of evaluation tools (survey design, chart abstraction) and data analysis (both cited by 51% of the respondents). Approximately half of the

respondents (46%) also indicated that additional training in the overall design of the evaluation would be beneficial to their success.

The “other” training responses referenced the need for additional time or funding to perform the evaluation activities rather than having more training or training in time management to balance the competing claims on their time.

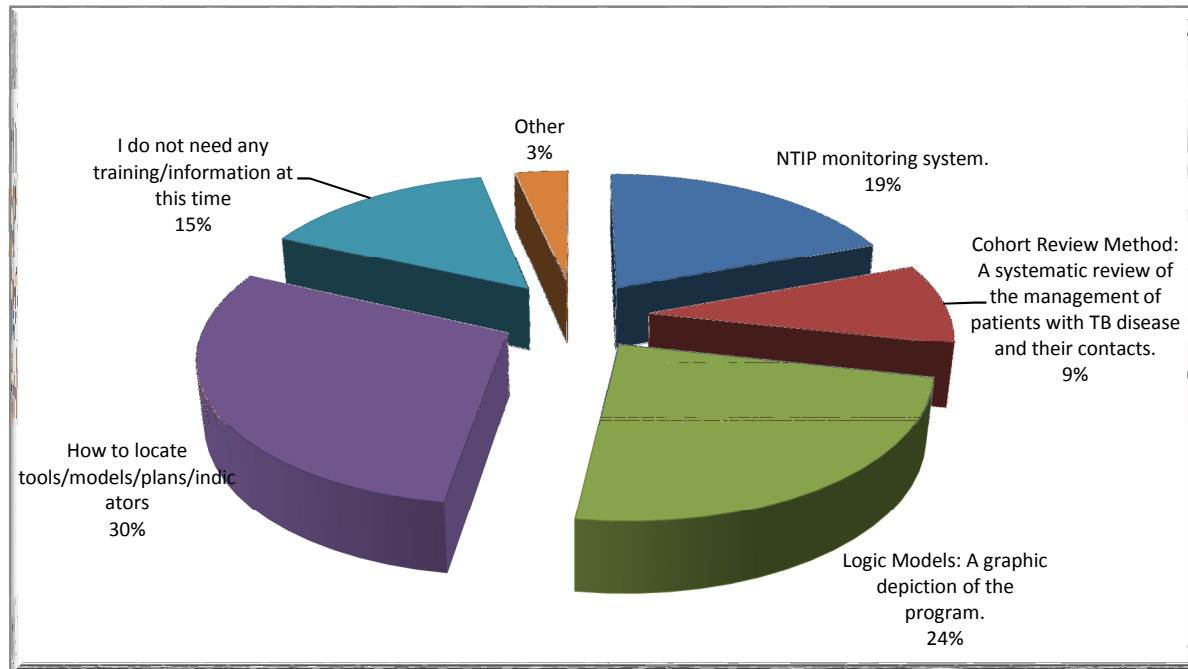
Graph 3. Additional training topics identified for evaluation focal points



Respondents were asked to identify additional training or information needs related to specific program evaluation tools (Graph 4). The most frequently requested training/information were assistance related to locating tools, models, or plans for evaluation (52%); logic models (42%); NTIP (34%); and Cohort Review (16%). One quarter (26%) of the respondents indicated they did not need any additional training or information at this time.

A question about the type of training format which would best fit the needs of the focal points revealed that 56% of the respondents preferred live web-based seminars, or webinars. Interactive on-line courses were identified by 50% of the respondents, and in-person training and archived webinars were both identified as formats meeting their needs by 48% of the respondents. Self-study module formats were also identified by 46% of the respondents as a format best meeting their training needs.

Graph 4. Tools identified by respondents as those that require more training or information



Conclusions

These preliminary results indicate that the current cohort of evaluation focal points have numerous years of TB experience and represent diverse roles within a TB program. The majority of focal points are assigned exclusively to this role and do not also have responsibilities as the education and training focal point. Three quarters of the focal points have had formal evaluation training, most commonly at a university. The amount of time allocated to evaluation responsibilities varied, although over half of the respondents believed that the time allocated for evaluation activities was appropriate and sufficient.

Three quarters of the respondents indicated the need for additional training to adequately and successfully fulfill their evaluation role. The additional areas of training identified included assistance related to locating the appropriate tools, models, or evaluation plans; and an understanding of how to use logic models, NTIP, and Cohort Review. The preferred formats for these trainings included webinars, interactive online courses, and stand-up trainings. Slightly

fewer respondents indicated that archived webinars and self-study modules were desirable formats for learning.

These preliminary results will be used by the TB PEN steering committee as the foundation for future activities and trainings aimed at supporting these individuals in their roles as evaluation focal point.

—Reported by Paula Hamsho-Diaz, MD, MA,
Ellen Murray, RN, BSN, Donna Hope Wegener, MA,
Southeastern National TB Center;
Brandy Peterson, MPH, CDC/DTBE; and
Stephen Hughes, PhD, NY State TB Control Program

CLINICAL RESEARCH BRANCH UPDATES

Rifapentine and Isoniazid for LTBI: 12-Dose DOT Regimen

The TBTC Study 26 (PREVENT TB) manuscript was published in December 2011. This article reports the main outcome of this decade-long,

8,000-patient, international study conducted by the CDC-sponsored Tuberculosis Trials Consortium. This and other recent studies support the publication of guidelines in CDC's *MMWR* for use of this 12-dose regimen for treatment of latent TB infection (LTBI). Details are in the article, "Guidelines Released on New, Shorter Regimen for LTBI," which can be found in the News from the Division of Tuberculosis Elimination section of this issue.

Rifapentine for Pulmonary TB: Finding the Right Dose

On November 2, 2011, TBTC Study 29X started to enroll patients at sites in the United States (11 sites), Brazil, Hong Kong, Kenya, Peru, South Africa (2 sites), Spain, Uganda, and Vietnam. This phase 2 study will evaluate the safety and bioavailability of three different doses of daily (7 days/week) rifapentine as a substitute for rifampin, given with food, and administered with isoniazid, pyrazinamide, and ethambutol during intensive phase treatment of sputum smear-positive pulmonary TB. Patients and investigators are blinded to rifapentine dose by using matching placebo tablets. Study 29X will enroll 80 patients in each of four arms: rifampin, rifapentine 10 mg/kg, rifapentine 15 mg/kg, and rifapentine 20 mg/kg. It is an extension of TBTC Study 29, which evaluated a single dose (10mg/kg) given only 5 days per week and without food (food augments rifapentine absorption). The goal of these studies is to confirm in humans the very promising results seen in murine studies, suggesting that high-dose daily rifapentine could provide a basis for substantial shortening of TB treatment, and thus provide the rationale for proceeding to a phase 3 trial of a treatment-shortening regimen for drug-sensitive TB.

—Reported by Stefan Goldberg, MD
Div of TB Elimination

INTERNATIONAL RESEARCH AND PROGRAMS BRANCH UPDATES

U.S. - Mexico Collaboration

A U.S.- Mexico TB summit was held in June 2010 with participation from both countries and other organizations including CDC, the U.S. Dept. of Health and Human Services, the State Department, and nongovernmental organizations (NGOs). This summit helped to identify research and programmatic needs and integrate work that has been done in the area of TB between the two countries and the 10 associated U.S. and Mexico border states. As a result, a memorandum of understanding (MOU) between CDC/DTBE and Mexico is under development to establish regular communication, cooperation, and technical assistance between both countries in the area of TB. Some of the areas of action in the MOU include 1) working jointly to improve care for migrant TB patients, 2) detection of TB in legal and undocumented migrants, 3) referral and counter-referral systems between both countries, and 4) the elimination of barriers to continuation and completion of TB retreatment without regard to legal status. The second U.S.-Mexico TB summit was planned for 2011 to follow up on the action items from the 2010 summit.

CDC/DTBE worked in collaboration with U.S. Immigration and Customs Enforcement (ICE) to organize a U.S. Government (USG) transnational TB case management meeting, which was held in April 2011. The meeting attendees discussed completion of treatment and notification of all patients with confirmed or suspected TB among ICE detainees from all facility types, including ICE servicing processing centers; contract detention facilities and local detention facilities that house ICE detainees through intergovernmental service agreements; and follow up after release from hospital, among other topics. The objectives for the meeting included the following:

1. Gain a unified understanding of the challenges and proposed solutions among USG agencies
2. Develop concrete interagency solutions to transnational TB control issues
3. Develop a proposal for a binational U.S.-Mexico meeting to address cross-border TB control issues

DTBE is also part of U.S. Binational Technical Workgroup that is improving collaboration in the area of all infectious diseases including TB, HIV, STD, dengue, and others. The group is working to draft a Binational Notifiable list and to develop communication pathway protocols.

All these ongoing interagency efforts and DTBE initiatives have been key to developing a DTBE strategy on TB among foreign-born persons on the U.S.-Mexico border.

*—Reported by Germania Pinheiro
Div of TB Elimination*

Controlling Drug-Resistant TB Where It Is Most Prevalent

The global emergence of new strains of TB that are resistant to conventional TB drugs is a serious threat to the goal of TB elimination. One of the regions with the highest incidence of drug-resistant TB is Central Asia. In Kazakhstan, which is in Central Asia, about 20% of new cases of TB are multidrug-resistant TB, or MDR TB, defined as TB that is resistant to the two main TB drugs, isoniazid and rifampin. In the United States, this rate is currently about 1%, but will increase if drug resistance rates continue to rise abroad. In Kazakhstan, MDR TB rates have increased steadily since 1997. In the United States, several recent MDR TB patients had contracted the disease in Central Asia.

MDR TB mostly develops as the result of doctors giving inappropriate treatment, or from patients missing doses or failing to complete a course of treatment. After the fall of the Soviet Union,

health systems in former Soviet states such as Kazakhstan fell apart, and TB patients received partial and inappropriate antibiotic treatment. This current epidemic is the result of a fragmented TB system that lasted at least a decade starting with the 1991 dissolution of the Soviet Union. We are working to help rebuild this system.

DTBE projects in Kazakhstan, developed at the request and in collaboration with the Kazakhstan National TB program, include the following:

1. An evaluation of the Kazakhstan Electronic National TB Registry (ETR), which was submitted as a report to the Ministry of Health by Drs. Matt Willis and Tim Holtz. Key findings included a lack of awareness among local TB controllers of the ETR functions designed for their local use, such as automated region-specific reports that track trends over time. Also, there was a lack of centralized epidemiologic, managerial, and information technology (IT) personnel for managing the large nationwide electronic surveillance network. The main recommendations related to enhanced training of peripheral TB controllers in ETR relevance for local application and strengthening central support for the ETR system as whole.
2. An assessment of the risk factors for primary MDR TB, which was presented as a oral presentation at the UNION International meeting in Berlin November 2010; this is being written up as a manuscript by Drs. Matt Willis and Patrick Moonan. In the setting of limited lab capacity to perform drug-susceptibility testing (DST) for every TB case, this analysis was intended to offer recommendations for targeting those patients most likely to have MDR TB for available DST testing. We found that the prevalence of primary MDR TB is very high, with about 40% of all new cases showing resistance to at least one of the 4 first-line

drugs. There are few criteria that differentiated high-risk from low-risk patients—essentially the whole population of new TB patients must be considered at high risk for MDR TB. Thus, we recommended scale up toward universal DST in Kazakhstan rather than a targeted approach.

3. Describing the epidemiology of TB/HIV in Kazakhstan was delivered as an oral presentation at the annual EIS conference in Atlanta in 2010; it is being written up as a manuscript by Drs. Matt Willis, Tim Holtz, and Patrick Moonan. HIV prevalence among TB patients in Kazakhstan is low, at 2%. However, the incidence is rising. This is especially concerning because of the high background incidence of MDR TB. We found patients with the combination of MDR TB/HIV had 37 times the mortality of those with TB alone. We found that the TB/HIV population remains relatively confined to a distinct group of male intravenous drug users in urban centers clustered along the heroin transit routes through northeast Kazakhstan. This description offers an opportunity for aggressive intervention toward this group to detect, treat, and control further spread of HIV within TB patients.
4. We conducted Atlanta-based training of 10 TB controllers from Eastern Kazakhstan Oblast, the area with the highest rates of MDR TB, in developing and implementing an action plan to address the spread of drug-resistant TB locally (Drs. Matt Willis and Patrick Moonan).

Other DTBE work in Central Asian countries:

1. Nationally representative anti-tuberculosis drug-resistance survey (DRS), Kyrgyzstan, 2010–2011 (Dr. Patrick Moonan)
2. Nationally representative DRS, Tajikistan, 2010–2011 (Dr. Patrick Moonan)

3. Nationally representative DRS, Ukraine, 2012–2013 (Dr. Patrick Moonan).

*Reported by Matt Willis, MD, MPH
and Patrick Moonan, PhD
Div of TB Elimination*

LABORATORY BRANCH UPDATE

Advisory Panel Recommends Reclassification of Diagnostics for Tuberculosis

On June 29, 2011, the Food and Drug Administration (FDA) held a public meeting of the Microbiology Devices Panel of the Medical Devices Advisory Committee. The purpose of the meeting was to discuss and make recommendations regarding the possible reclassification of molecular diagnostics for the rapid detection of *M. tuberculosis* complex and genetic mutations associated with antibiotic resistance, and for immunologically based tests such as interferon gamma release assays (IGRAs) that are intended for the detection of latent TB infection (LTBI) by indirect means.

The first nucleic acid amplification test (NAAT) for the detection of TB was approved in 1995; no additional applications have been submitted to FDA since 1994. The current class III designation requiring the most stringent regulatory controls has been seen as a deterrent by some experts for the development of new diagnostics for TB owing to additional regulatory requirements and greater oversight. After 15 years' experience with molecular diagnostics for TB and substantial advances in technology, with CDC's encouragement, FDA convened the meeting to hear discussion and receive recommendations to assess whether special controls could be written to mitigate the risks of an inaccurate test results.

The Microbiology Devices Panel consisted of six voting members, eight non-voting members, and one representative each for patients, industry,

and consumers. Dr. Steven Gitterman of FDA explained the reclassification process and current regulations for in vitro diagnostics for TB. Dr. William Burman of the Denver Public Health Department discussed “Current Tuberculosis Diagnostics: The Role of Diagnostic Tests for Latent and Active Tuberculosis.” RADM. Kenneth Castro, USPHS, CDC, presented the “Public Health Implications for Reclassification.” After the presentations, an open public hearing was conducted in which five statements were made by members of industry, the Association of Public Health Laboratories, the American Society of Microbiology, and a trade advocacy group.

The FDA presented the Panel with the question, What is the appropriate classification of 1) NAAT tests for the detection of *M. tuberculosis* complex directly from patient specimens, 2) indirect tests of tuberculosis infection, and 3) tests for the rapid detection of *M. tuberculosis* complex resistance mutations by nucleic-acid amplification directly from patient specimens? After discussion and careful deliberation, the Panel recommended reclassification from class III to class II for each of the three categories of diagnostic tests.

If the FDA acts on the recommendations of the Panel, FDA will publish a notice of the Panel’s recommendation and propose a new regulation in a docket for public comment. Following public review and comments, FDA may then publish a Federal Register Notice to propose reclassification with Special Controls Guidance (referred to as the proposed rule). FDA will receive and review comments to the proposed rule and render a final decision. If and when reclassification occurs, final actions will be published as a Federal Register Notice, and FDA will publish the related Special Controls Guidance. DTBE encourages state and local health departments and relevant sectors in academia to follow this issue and exercise their role in making public comment.

Complete FDA meeting materials of the microbiology devices panel can be found at

<http://www.fda.gov/AdvisoryCommittees/CommitteesMeetingMaterials/MedicalDevices/MedicalDevicesAdvisoryCommittee/MicrobiologyDevicesPanel/ucm260517.htm>

—Submitted by Michael Iademarco, Chief,
Laboratory Branch
Div of TB Elimination

SURVEILLANCE, EPIDEMIOLOGY, AND OUTBREAK INVESTIGATIONS BRANCH UPDATES

19th Semiannual Meeting of the Tuberculosis Epidemiologic Studies Consortium (TBESC)

The legacy of the Tuberculosis Epidemiologic Studies Consortium’s (TBESC) first decade is not only the body of scientific and epidemiologic research produced by its members, but also the awareness that TB research can improve the ability to perform TB control, according to Bob Horsburgh, MD, TBESC co-chair. This, the 19th Semiannual Meeting, was marked not only by scientific sessions to discuss current research, but also by a look-back at important findings over the lifetime of the consortium. Approximately 150 principal investigators, project coordinators, and other TBESC personnel attended the meeting July 20–21, 2011, in Chicago. Meeting participants focused on the steps needed to bring current projects to completion, and on lessons learned over the last 10 years. The Chicago meeting was the final meeting of the first TBESC; members discussed both the past 10 years, as well as the future of TB and LTBI research.

Day one’s scientific sessions featured presentations of current TBESC study results. One highlight of the first day’s presentation was new data from the study “Integration of *Mycobacterium tuberculosis* genotyping into routine TB program practice: Testing and refinement of a method to prioritize clusters for

investigation.” This study was performed to determine the best way to prioritize investigation of two or more TB patients with identical genotypes, or clusters. Determining the best method of cluster prioritization is important in order to determine which clusters likely represent recent transmission and the potential for a larger outbreak, and which ones are unlikely to pose an increased risk for transmission. Wendy Cronin, PhD, reported that of 44 clusters randomly selected among three sites for investigation, 164 epidemiologically linked TB case pairs were identified. In 11 clusters, there were no identified epidemiological links between patients. Of identified epidemiologically linked pairs, 45% occurred in congregate settings, 20% in close social settings, 18% in nonresidential areas, and 17% in household settings. Next steps for the study include evaluating whether the time between cluster cases plays a role in the priority assigned to the cluster.

A study to assess the performance and agreement between the tuberculin skin test (TST) and interferon gamma release assays (IGRAs) in 2- to 14-year-old children immigrating from Vietnam, Mexico, and the Philippines found that 26% of children applying for immigration tested positive by TST, compared to only 6% testing positive by QuantiFERON Gold In-Tube (QFT). Meredith Howley, project coordinator for the study, reported that agreement between the two tests was 74%; positive results increased with age for both tests. Future analysis for this study includes evaluation of the association between the TB status of the family, and the child’s QFT and TST results.

At the end of day one of the conference, participants attended a welcome reception, as they had after the first day of previous TBESC meetings. However, the welcome reception for the final TBESC meeting featured the ukulele, played by Hawaii Field Medical Officer Dick Brostrom; the flute, played by CDC Medical Officer John Jereb; a trivia contest; and a mashed potato bar. A good time was had by all.

On the second day of the conference, presenters provided a retrospective of TBESC findings over the previous 10 years. Paul Colson, PhD, discussed “Improving LTBI Treatment Outcomes.” He stated that a TBESC research intervention to increase the knowledge of physicians in the importance of LTBI treatment was valuable in teaching them the risk of LTBI progression in HIV-infected persons, the interpretation of the TST, and the appropriateness of isoniazid (INH) in all age groups. Another study, performed at all TBESC sites, was designed to find factors associated with acceptance and completion of LTBI treatment. Phase Two of the study found that about 53% of all patients failed to complete treatment; factors associated with failure to complete treatment included a 9-month INH regimen, and being a healthcare worker. Phase Three of the study found that persons who reported that the clinic schedule was not inconvenient, or only slightly inconvenient, were more likely to accept LTBI treatment than persons who reported the schedule was a major inconvenience. Persons with stable housing were 1.7 times more likely to complete LTBI treatment than person who did not report stable housing.

Randall Reves, MD, presented TBESC findings pertaining to TB elimination in the foreign-born and U.S.-born African Americans. He reported that a TBESC study designed to identify missed TB prevention opportunities in the foreign born found that over 85% of foreign-born persons diagnosed in the first year after U.S. entry were diagnosed as a result of screening due to TB symptoms or immigration screening. Of those diagnosed in the first 3 months after U.S. entry, immigration screening was the most likely source of diagnosis. Conversely, in a TBESC study, “National Study of Determinants of Early Diagnosis, Prevention, and Treatment of TB in the African-American Community,” Dr. Reves stated that diagnosis of TB in African Americans occurred due to routine care, screening, or treatment for a comorbid condition, or as a result of a contact investigation.

Other highlights from the second day of the conference included updates from the Publications and Presentations Committee, the Translating Research into Practice Workgroup, and the External Relations Committee.

—*Reported by Suzanne Beavers, MD,
and Dolly Katz, PhD
Div of TB Elimination*

Steps to Ensure Genotyping Success for TB Programs

Genotyping of culture-positive TB isolates can provide valuable information to state TB programs with regard to TB epidemiology within local populations, TB transmission, multi-jurisdictional clustering, and identification of false-positive specimens. This information can assist in defining program priorities for surveillance, case management, and education and training at state and local levels.

In 1996, the Maryland Center for Tuberculosis Control and Prevention (CTBCP) initiated genotyping of culture-positive TB patients, with a goal that every resident with culture-positive TB would have an isolate genotyped. In 2009 and 2010, the goal was reached and 100% of all Maryland TB culture-positive isolates were genotyped. How this goal was accomplished, and how other states can meet this same goal, is demonstrated below.

Success is dependent upon fostering good, sustainable working relationships among the State Mycobacteriology Laboratory, CTBCP, and private sector hospitals and laboratories. The guiding principle of these relationships was a commitment to improve the public health of all Maryland residents who have contracted TB, through testing, diagnosis, and treatment. Maryland maintains and fosters these relationships through frequent communication both by telephone and fax with all partners, including private providers, hospital laboratories,

public laboratories, and county health department staff.

The State Genotyping Coordinator is based within the CTBCP. The State Genotyping Coordinator maintains the database with all the genotyping test results, clusters, and pertinent patient information. The State Mycobacteriology Laboratory has identified a coordinator, who maintains the isolates on all genotyped patients and collects isolates from private laboratories on Maryland residents. Each coordinator has his or her specific roles and tools to use, and these individuals work closely together.

The State Laboratory Coordinator prepares and sends isolates to the reference genotyping laboratory in Michigan monthly, and provides a list of outgoing isolates to the State Genotyping Coordinator. The State Genotyping Coordinator enters the names and other pertinent data into the local genotyping database. Both coordinators have access to TB GIMS. Genotyping reports are received by both the laboratory and program coordinators, and results entered into the local database. The genotyping coordinator then assumes primary responsibility for contacting and consulting with local health departments regarding potential links within clusters. Any suspicions of or questions arising from possible multi-jurisdictional clusters are referred to the CTBCP program chief. Suspected laboratory contaminations are referred by the program genotyping coordinator to both the local health department and the CTBCP program chief for follow-up.

Genotyping begins with the CTBCP surveillance staff generating a list of all culture-positive TB cases for the current year. The list is updated monthly and sent to both the Genotyping Coordinator and the Mycobacteriology Laboratory Coordinator. This list contains the patient's name, county of residence, and date of culture identification, and indicates if the culture was identified as TB at the state or other laboratory. Other laboratories include private

hospitals, commercial or university laboratories, and other public laboratories in other states. The genotyping and laboratory coordinators regularly discuss which isolates have not been received from other laboratories, and determine who will take responsibility for requesting individual isolates from which laboratories to be sent to the State Mycobacteriology Laboratory.

For those isolates not already received at the State Laboratory, the Genotyping Coordinator contacts the local health department(s) to obtain a copy of the laboratory report form for the patient's TB positive culture. This form provides the name of the laboratory that processed the specimen, the patient's name and date of birth, the healthcare provider or center that requested the test, the laboratory accession number for the specimen, and the date the specimen was processed.

Several tools have been developed to request specimens from other laboratories. The first tool is a directory that contains the names and contact information of all private and public laboratories that have processed Maryland TB case specimens, the name of each laboratory supervisor or contact person, and their direct telephone and fax numbers. The directory is amended as new laboratories, hospitals, or other institutions are identified that collect or process specimens for Maryland TB cases.

The second tool is a standardized isolate requisition form used for requesting isolates from other laboratories. It contains the patient's name and date of birth, specimen type and date of specimen collection, and laboratory accession number to help identify the correct specimen needed from the laboratory. The request form also contains space for the laboratory name, address, contact person and their numbers. Lastly the form has the State Mycobacteriology Laboratory Chief's name, and mailing address for shipping purposes.

For example, when a positive TB isolate needs to be retrieved from a private laboratory, a coordinator calls the facility contact person directly. Once the location of the specimen is confirmed, a requisition form is faxed to the contact person so that the isolate is shipped to the Maryland State Mycobacteriology Laboratory. Sometimes the private laboratory is unaware that the patient is a Maryland resident, or may have sent the isolate to another laboratory instead. The time spent building relationships with the specific contact personnel working in outside laboratories ultimately saves time and avoids confusion. These relationships have proven very helpful when false-positive results are suspected. Regular contact makes communication much easier.

Tracking down positive TB cultures processed in other laboratories across the United States is a time-consuming process. Since 1996, isolates have been obtained from more than 75 laboratories. In October 2008, Maryland regulators eased the TB isolate tracking process by changing Maryland state regulations. This third tool, the revised Maryland code (COMAR) 10.06.01.03 C, states that a positive TB culture from a Maryland resident must automatically be sent to the Maryland State Mycobacteriology Laboratory for testing and processing. This regulation has decreased the number of requests made to larger laboratories, but smaller ones still need reminding.

In 2010, only 93 (57%) isolates from 162 culture positive cases were processed in the State Mycobacteriology Laboratory. The other 69 specimens were processed at private Maryland hospitals, out-of-state hospitals, and commercial or out-of-state laboratories. Using the system described enabled the Maryland State Mycobacteriology Laboratory to retrieve all 162 isolates for genotyping.

The success of Maryland's Genotyping Program is a direct result of 17 years spent fostering strong, collaborative working relationships with

local health departments, public and private laboratories, and hospitals nationwide. The development and implementation of a protocol that provides routine access to a surveillance list of culture-positive cases, the laboratory directory, an isolate request form, and the 2008 regulations has provided tools that Maryland has relied on for continued success in the genotyping program. The national TB GIMS program is another communication resource that provides names and contact information from other public laboratories. The utility of TB GIMS will ensure continued success for Maryland's Genotyping Program in the future.

—Submitted by Heather Rutz, MCRP, MHS
and Rachel A. Vaden
MD Department of Health and Mental Hygiene

NEW CDC PUBLICATIONS

Barnes RFW, Moore ML, Garfein RS, Brodine S, Strathdee SA, and Rodwell TC. Trends in mortality of tuberculosis patients in the United States: the long-term perspective. *Annals of Epidemiology* 2011 Oct; 21 (10): 791-795.

Bloss E, Newbill K, Peto H, Rice MJ, Ainsworth G, Travnick R, Holcombe M, Haddad MB, and Oeltmann JE. Challenges and opportunities in a tuberculosis outbreak investigation in southern Mississippi, 2005 – 2007. *Southern Med J*. 2011 Nov; 104(11): 731-5.

Castro KG, Cohn DL, Burman WJ, Reves RR, Iseman MD. John A. Sbarbaro, 1936–2011. [Obituary.] *IJTLD* 2011 Nov; 15 (11): 1562.

Cavanaugh J, Genga K, Marigu I, Laserson K, Ackers M, Cain K. Tuberculosis among children in Kenya: epidemiology and impact of HIV in two provinces. *J Trop Pediatr* 2011 Dec 5. [Epub ahead of print.]

Chaisson LH, Kass NE, Chengeta B, Mathebula U, Samandari T. Repeated assessments of

informed consent comprehension among HIV-infected participants of a three-year clinical trial in Botswana. *PLoS ONE* 2011; 6(10): e22696. doi:10.1371/journal.pone.0022696.

Davidson CS, Green CF, Gibbs SG, Panlilio AL, Jensen PA, Jin Y, Scarpino PV. Feasibility of selected prophylactic barriers in arresstance of airborne bacterial vegetative cells and endospores. *Am J Infect Control* 2011; 39: 581-6.

Davidson C, Green CF, Panlilio AL, Jensen PA, Stover BH, Roselle G, Gibbs SG, and Scarpino PV. Method for evaluating the relative efficiency of selected N95 respirators and surgical masks to prevent the inhalation of airborne vegetative cells by healthcare personnel. *Indoor and Built Environment* 2011 Apr; 20 (2): 265-277.

Dharmadhikari AS, Basaraba RJ, Van Der Walt ML, Weyer K, Mphahlele M, Venter K, Jensen PA, First MW, Parsons S, McMurray DN, Orme IM, and Nardell EA. Natural infection of guinea pigs exposed to patients with highly drug-resistant tuberculosis. *Tuberculosis* 2011 Jul; 91 (4): 329-338.

Factor SH, Sackoff JE, Raj-Singh S, Wu Y, Monserrate J, Munsiff S, and Vlahov D. Street-outreach improves detection but not referral for drug users with latent tuberculosis, New York City. *Journal: Substance Use & Misuse* 2011; 46 (14): 1711-1715.

Gammino VM, Taylor AB, Rich ML, Bayona J, Becerra MC, Bonilla C, Gelmanova I, Hollo V, Jaramillo E, Keshavjee S, Leimane V, Mitnick CD, Quelapio MID, Riektsina V, Tupasi TE, Wells CD, Zignol M, Cegielski JP. Bacteriologic monitoring of multidrug-resistant tuberculosis patients in five DOTS-Plus pilot projects. *Int J Tuberc Lung Dis* 2011; 15(10):1315–1322.

Ghosh S, Moonan PK, Cowan L, Grant J, Kammerer S, Navin T. Tuberculosis Genotyping Information Management System: Enhancing tuberculosis surveillance in the United States.

Infection, Genetics, and Evolution 2011; doi: 10.1016/j.meegid.2011.10.013.

Grinsdale JA, Ho CS, Banouvong H, Kawamura LM. Programmatic impact of using QuantiFERON®-TB Gold in routine contact investigation activities. *Int J Tuberc Lung Dis* 2011 Dec; 15(12):1614–1619.

He GX, Wang HY, Borgdorff MW, van Soolingen D, van der Werf MJ, Liu ZM, Li XZ, Guo H, Zhao YL, Varma JK, Tostado CP, van den Hof S. Multidrug-resistant tuberculosis, People's Republic of China, 2007–2009. *Emerg Infect Dis* [serial on the Internet]. 2011 Oct.

Heilig CM, Chia D, El-Sadr WM, Hirsch-Moverman Y, Mac Kenzie WR, Saukkonen S, Villarino ME, and Padayatchi N. Justifying research risks in a clinical trial for treatment of multidrug-resistant tuberculosis. *IRB: Ethics & Human Research* 2011 Jul-Aug; 33 (4): 10-17.

Kellar KL, Gehrke J, Weis SE, Mahmutovic-Mayhew A, Davila B, Zajdowicz MJ, Scarborough R, LoBue PA, Lardizabal AA, Daley CL, Reyes RR, Bernardo J, Campbell BH, Whitworth WC, Mazurek GH. Multiple cytokines are released when blood from patients with tuberculosis is stimulated with Mycobacterium tuberculosis antigens. *PLoS ONE* 2011; 6(11): e26545. doi:10.1371/journal.pone.0026545

Lee LM, Heilig CM, White A. Ethical justification for conducting public health surveillance without patient consent. *Am J Public Health* 2011 Nov 17; e1-e7. Published online ahead of print; doi: 10.2105/AJPH.2011.300297.

Lin H, Shin S, Blaya JA, Zhang Z, Cegielski P, Contreras C, Asencios L, Bonilla C, Bayona J, Paciorek CJ, and Cohen T. Assessing spatiotemporal patterns of multidrug-resistant and drug-sensitive tuberculosis in a South American setting. *Epidemiology and Infection* 2011 Nov; 139 (11): 1784-1793.

Lowther SA, Miramontes R, Navara B, Sabuwala N, Brueshaber M, Solarz S, Haddad MB, Sodt D, Lynfield R. Outbreak of tuberculosis among Guatemalan immigrants in rural Minnesota, 2008. *Public Health Rep* 2011 Sept-Oct; 126:726-732.

Macintyre K and Bloss E. Alcohol brewing and the African tuberculosis epidemic. *Med Anthropol* 2011 Mar; 30 (2): 126-35.

Magee M, Bloss E, Shin S, Contreras C, Huaman HA, Ticona JC, Bayona J, Bonilla JC, Yagui M, Jave O, and Cegielski P. Factors associated with drug-resistant tuberculosis (DRTB) among patients with tuberculosis (TB) and diabetes mellitus (DM) in Peru. *American Journal of Epidemiology* 2011 Jun 1; 173: S182-S182.

Napier RJ, Rafi W, Cheruvu M, Powell KR, Zaunbrecher MA, Bornmann W, Salgame P, Shinnick TM, Kalman D. Imatinib-sensitive tyrosine kinases regulate mycobacterial pathogenesis and represent therapeutic targets against tuberculosis. *Cell Host & Microbe* 2011 Nov 17; 10: 475-485.

Pevzner ES, Vandebriel G, Lowrance DW, Gasana M, and Finlay A. Evaluation of the rapid scale-up of collaborative TB/HIV activities in TB facilities in Rwanda, 2005-2009. *BMC Public Health* 2011 July; 11: 550.

Powell K, Han D, Hung NV, Vu T, Sy DN, Trinh TT, Le TC, Do K, Oeltmann JE, Whitehead S. Prevalence and risk factors for tuberculosis infection among personnel in two hospitals in Viet Nam. *IJTL D* 2011; 15(12):1643–1648.

Powell RD III, Whitworth WC, Bernardo J, Moonan PK, Mazurek GH. Unusual interferon gamma measurements with QuantiFERON-TB Gold and QuantiFERON-TB Gold In-Tube tests. *PLoS ONE* 2011; 6(6): e20061. doi:10.1371/journal.pone.0020061

Ricks PM, Cain KP, Oeltmann JE, Kammerer JS, Moonan PK. Estimating the burden of

tuberculosis among foreign-born persons acquired prior to entering the U.S., 2005–2009. *PLoS ONE* 2011; 6(11): e27405. doi:10.1371/journal.pone.0027405

Sable SB, Cheruvu M, Nandakumar S, Sharma S, Bandyopadhyay K, Kellar KL, Posey JE, Plikaytis BB, Amara RR, and Shinnick TM. Cellular immune responses to nine *Mycobacterium tuberculosis* vaccine candidates following intranasal vaccination. *PLoS ONE* 2011; 6(7): e22718; doi:10.1371/journal.pone.0022718.

Saito H, Iwamoto T, Ohkusu K, Otsuka Y, Akiyama Y, Sato S, Taguchi O, Sueyasu Y, Kawabe Y, Fujimoto H, Ezaki T, and Butler R. *Mycobacterium shinjukuense* sp. Nov., a slowly growing, non-chromogenic species isolated from human clinical specimens. *IJSEM*. V61; 1927-1932, 2011. DOI 10.1099/ijms.0.025478-0

Samandari T, Moeti T, Talbot E, Agizew T, Nyirenda S. Author's reply. [Correspondence.] *The Lancet* 2011 Oct 1; 378; 1216.

Simmon, Keith E., Barbara A. Brown-Elliott, Perry G. Ridge, Jacob D. Durtschi, Linda B. Mann, E. Susan Slechta, Arnold G. Steigerwalt, Benjamin D. Moser, Anne M. Whitney, June M. Brown, Karl V. Voelkerding, Karin L. McGowan, Anne F. Reilly, Thomas J. Kim, W. Ray Butler, Paul H. Edelstein, Richard J. Wallace, and Cathy A Petti. *Mycobacterium chelonae-abscessus* complex associated with sinopulmonary disease, northeastern USA. *EID*. V17, #9, Sep. 2011. ISSN 1080-6059

Smith SE, Kurbatova EV, Cavanaugh JS, Cegielski JP. Global isoniazid resistance patterns in rifampin-resistant and rifampin-susceptible tuberculosis. [Short communication.] *Int J Tuberc Lung Dis* e-publication ahead of print 2 December 2011; available at <http://dx.doi.org/10.5588/ijtld.11.0445>.

Sow FB, Nandakumar S, Velu V, Kellar KL, Schlesinger LS, Amara RR, Lafuse WP, Shinnick TM, Sable SB. *Mycobacterium tuberculosis* components stimulate production of the antimicrobial peptide hepcidin. *Tuberculosis* 2011 July; 91 (4): 314-321.

Sterling TR, Villarino ME, Borisov AS, Shang N, Gordin F, Bliven-Sizemore E, Hackman J, Dukes Hamilton C, Menzies D, Kerrigan A, Weis SE, Weiner M, Wing D, Conde MB, Bozeman L, Horsburgh CR, Jr., Chaisson RE, for the TB Trials Consortium PREVENT TB Study Team. Three months of rifapentine and isoniazid for latent tuberculosis infection. *N Engl J Med* 2011; 365:2155-66.

Thamthitiwat S, Marin N, Baggett HC, Peruski LF, Kiatkulwiwat W, Panumatrasmee V, Varma JK, Nateniyom S, Akarasewi P, Maloney SA. *Mycobacterium bovis* (bacille Calmette-Guerin) bacteremia in immunocompetent neonates following vaccination. [Short communication.] *Vaccine* 2011; 29: 1727-1730.

Weisenberg SA, Gibson AL, Huard RC, Kurepina N, Bang H, Lazzarini LCO, Chiu Y, Li J, Ahuja S, Driscoll J, Kreiswirth BN. Distinct clinical and epidemiological features of tuberculosis in New York City caused by the RD^{Rio} *Mycobacterium tuberculosis* sublineage. *Infection, Genetics, and Evolution* 2011; doi: 10.1016/j.meegid.2011.07.018.

Winston CA, Navin TR, Becerra JE, Chen MP, Armstrong LR, Jeffries C, Woodruff RSY, Wing J, Starks AM, Hales CM, Kammerer JS, MacKenzie WR, Mitruka K, Miner MC, Price S, Scavotto J, Cronin AM, Griffin P, LoBue PA and Castro KG. Unexpected decline in tuberculosis cases coincident with economic recession – United States, 2009. *BMC Public Health* 2011; 11:846; doi:10.1186/1471-2458-11-846.

PERSONNEL NOTES

Jamala Best is the newest addition to the Communications, Education, and Behavioral Studies Branch (CEBSB) Web Team, joining Jesse Bradley as a webmaster for DTBE. A contractor with Northrup-Grumman, Jamala comes to CEBSB/DTBE with over 9 years of experience creating and developing material for websites. She received her undergraduate degree (BFA) in Multimedia/Web Design from the Art Institute of Atlanta. In an initial position she held with CDC (2001–2004), she was responsible for a wide variety of administrative and design projects. She has also worked in a freelance capacity as a Creative Design Consultant, creating a wealth of web design and web development products. This involved projects such as designing print projects, websites, and logos for small businesses; using e-marketing techniques to create successful web products; providing copywriting, art production, design consultation, and information architecture documentation; and an array of additional projects. She returned to CDC as a contractor in 2009, serving as a Senior Web Specialist with responsibility for management of the CDC Radiation Emergencies website, in conjunction with the main CDC website on Emergency Preparedness and Response. From 2010 to 2011 she served as a Web Content Administrator with the Division of Cancer Prevention and Control providing web development and content editing support. More recently, she served as a Web Content Administrator in the CDC Office of the Associate Director for Science, providing a variety of high-level website support for that office. We are pleased to have such a creative and versatile person join the branch and division! Welcome, Jamala!

Willard “Ray” Butler is retiring from CDC after 40 years of distinguished federal service. Ray began his federal career with the U.S. Air Force. He came to CDC in 1976 from the University of Georgia Public Safety Division, where he had served as the Laboratory Safety Officer. His first

CDC assignment was as a microbiologist in the Mycobacteriology Laboratory, located at the Chamblee Campus. He was initially assigned to work in the drug program, where he was first to report on the adverse effects of enrichment supplements on the growth of *Mycobacterium tuberculosis*. Eventually he became associated with identification methods for the genus. During this time he attended Georgia State University and earned a master’s degree.

Ray became an expert in taxonomy and classification methods for nontuberculous mycobacteria (NTM). His development of the novel high-performance liquid chromatography (HPLC) method for identification of mycobacteria in the late 1980s initiated a new era in the field. The rapid method replaced biochemical identification techniques that had been in place at CDC since the 1960s. HPLC quickly became the gold standard for U.S. state public health laboratories for identification of NTM, and in the 1990s a grass roots movement resulted in formation of the HPLC Users Group. Ray was recognized in 1996 by the Association of State and Territorial Public Health Laboratory Directors for his work with the HPLC Users Group for “contributions to the rapid identification of mycobacteria.” As a research microbiologist, Ray was an instrumental contributor to meetings and participated in many studies, resulting in 150 presentations and publications. He was responsible for characterization and naming of 17 new species of mycobacteria and 1 novel genus within the mycolata category with 2 new species.

Over the last several years, as the laboratory branch transitioned from the Division of AIDS, STD, and TB Laboratory Research within the National Center for Infectious Diseases, first as a division re-organized into the National Center for HIV/AIDS, STD, and TB Prevention, and then to the Center’s Division of Tuberculosis Elimination (DTBE), Ray’s contributions have been invaluable. His experience and expertise have consistently influenced the laboratory’s journey in maintaining a state-of-the-art focus on

programmatically relevant, applied public health research. In addition to his scientific contributions, he has continually provided managerial leadership in operational and laboratory systems improvements, including the design and use of building 17 facilities for the laboratory branch. He has co-directed the DTBE laboratory safety program and helped to implement a comprehensive safety infrastructure resulting in CDC-wide recognition. Ray was individually recognized with the CDC and ATSDR Honor Award in 2006 for "exemplary service as Branch Safety Officer." Ray will retire after 35 years tenure from the laboratory December 31, 2011. Please feel free to call or drop by to visit and wish him well in his retirement.

Dr. Ken Castro, Director of DTBE, was profiled in a recent issue of the journal *Lancet*. Entitled, "Kenneth Castro: a public health hero," the profile describes Dr. Castro's career, from his early years as an EIS officer to his current position as an international leader in TB control. Joining CDC in 1983 in CDC's AIDS Division, he made important contributions to understanding how HIV is transmitted. Through that work he learned about TB, eventually deciding to move into that field. He was one of the founding members of the Stop TB Partnership, and has been a leader in other health initiatives as well. "Kenneth Castro: a public health hero." *The Lancet* 2011; 378 (9801): 1456.

William Ford has joined the International Research and Programs Branch (IRPB) as an Emory work-study student. He went to East Carolina University for a year, then moved back to his home state of Virginia to attend James Madison University, where he was an honors student. He majored in international affairs and Spanish language and graduated in August 2011. He is currently pursuing an MPH degree at Emory, studying global health and concentrating in infectious diseases. William is new to public health, so his interests are many and varied. Among them are general interests in inequality, socioeconomic determinants of health, and Latin

American public health issues. He is also really enjoying his courses in biology and epidemiology. He enjoys spending his free time exploring Atlanta and watching his favorite sport, rugby.

Gloria Gambale is retiring from federal service. Gloria started her federal career in 1987, when she began working for the IRS in the area of administrative support and quality assurance. One of her accomplishments at IRS involved working on the IRS Y2K project. In 1998, she joined CDC and provided administrative support in the Division of Oral Health, where she worked on both the Healthy People 2000 and Healthy People 2010 projects.

In 2000, she came to work in the Division of Tuberculosis Elimination as a Program Operations Assistant (and later Management and Program Analyst) in the Data Management and Statistics Branch. Gloria provided critical support for our transition from the DTBE LAN model to ITSO's centralized model. In 2009, she moved to the OD in her current position with the Resource Management Team.

Gloria has been our "go-to" person for many things, including processing the paperwork for guest researchers and fellows, invoicing, inventory, the peer review process, and Commissioned Corps personnel issues. But the role she will be happiest to leave behind is that of Division "Blackberry coordinator" and the never-ending challenges that have come along with it. She plans to spend her retirement Blackberry-free. Gloria's plans for retirement include travel, working on "tons of hobbies," doing some renovation, and spending time with her 10 grandchildren. Her last day with CDC will be December 31, 2011. She will be missed by all; we wish her well!

Linda Leary is retiring after serving 40 years with the federal government. Linda started her federal career in 1969 in Washington, DC, in several secretarial positions. While in Washington, she

worked for GSA, NASA, and ACTION (now AmeriCorps VISTA). Linda moved to Atlanta to accept a position as personal assistant to the Regional Director of ACTION in the Atlanta Regional Office. Eventually, Linda left ACTION and found her way to CDC, where she first worked for the Branch Chief of the Metabolic Biochemistry Branch, National Center for Environmental Health. In 1983, Linda discovered the Division of Tuberculosis Elimination. Since then she has served in various positions in the tuberculosis division, such as health technician, data manager, and public health analyst, working on numerous research projects. One such project was the 1989 DTBE national initiative, the HIV-Related TB Project (HRTP), which recognized the lethal co-infection of TB and HIV.

In 1990, Linda left TB to accept a position in the Special Studies Section, Surveillance Branch, Division of HIV/AIDS, as a data manager, only to wander (thankfully) back to TB in 1993. On her return, she came to work in the Field Services Branch. One of her major activities over the years, which involved her working closely with our state partners, was collecting DTBE national aggregate data for persons on TB preventive therapy. She was the program consultants' "go-to" person for analysis of this data, and she would eagerly inform a consultant if a program was tardy in submitting its reports on time.

Over the past couple of years Linda took on a new role that allowed her to focus on DTBE field staff, both medical officers and public health advisors. She served in the important role of keeping field staff connected to CDC/Atlanta by ensuring they were up to date on all new initiatives within DTBE as well as in our National Center and CDC overall. She was a wizard at guiding our field staff through the mazes of training courses, required and elective, and regularly reminding all of us of due dates. Every year, Linda has done a superb job of orchestrating the Field Staff meeting at the annual National TB Conference and ensuring esprit de corps among all of us.

Linda took great pride in her association with the CDC Chapter of Blacks in Government, and in 2010 she ably served as the chapter's president. Under her guidance, the chapter was involved in numerous activities, including working on a Habitat for Humanity project, sponsoring several lunch-and-learn sessions, providing recommendations to CDC management officials regarding disparities in agency performance rating results, and serving as a sponsor for the TB Awareness Walk.

Linda will be truly missed in many, many ways, but unquestionably for her positive outlook on everything, and certainly for how she always found an opportunity to mentor many of us along in our careers ... sometimes just telling us what we needed to do. We wish her great enjoyment in her retirement, and most of all, we wish her days filled with fond memories, happiness, and laughter.

David Montgomery joined DTBE as a Public Health Prevention Service Program Fellow on October 11, 2011. He has been assigned to the Field Services and Evaluation Branch (FSEB) under the supervision of Andy Heetderks. Over the past 5 years, David has worked in the field of public health both domestically and internationally. During that time he helped to develop local public health care systems in Southern Sudan, reduce substance abuse within Asian and Pacific Islander communities in Chicago, and develop local language behavior change communication programs to reduce the spread of HIV in rural Zambia. As David's career progresses, he hopes to be able to design and implement complex national and international health initiatives. While not at work, David likes to be in the great outdoors, constantly learning and enjoying the company of friends and family. Welcome, David!

Vanessa Sweeney, MPH, CHES, has joined FSEB as a Public Health and Prevention Service (PHPS) fellow. Her first 6-month rotation is with the Program Evaluation Team in FSEB. She

received her MPH degree from Tulane School of Public Health and Tropical Medicine in 2008. Her past work experience includes serving as a program manager at state-run behavioral health clinics in New Orleans, LA. While there, she worked as a coordinator of emergency preparedness and substance abuse prevention activities. Vanessa also supervised employees in recovery from addiction and/or mental illness. She was also a member of the agency-wide electronic health record implementation team. Her primary interest is in applying public health principles while working with indigent populations and communities where mental illness and chemical addictions are prevalent. She has presented at various national conferences and was the recipient of the National Council for Community Behavioral Healthcare's 2009 "Emerging Leader" award. Welcome, Vanessa!

Deanna Tollefson has joined IRPB as an Emory work-study student. She is a second-year MPH student at Emory's Rollins School of Public Health focusing on global environmental health. Deanna chose this concentration because of her interest in alleviating health disparities that stem from social inequity and that are manifested through poor living environments (natural or built). Deanna is interested in strategies that reduce the infectious disease burden in vulnerable populations, and had the opportunity to focus on related projects while working at CARE last year. Deanna first became interested in TB when she spent a few months in rural south India helping a community hospital assess follow-up on the health of treated TB patients. Besides public health, Deanna enjoys long-distance running, biking, and hiking in the Rockies; exploring new places, especially in Asia; and finding opportunities to practice her Chinese.

Vic Tomlinson is retiring from CDC after 30 years of dedicated service. Vic started his public health career in 1970 with the Virginia Department of Health, working as a TB investigator in the eastern part of Virginia. In 1972, he was hired by CDC as a public health advisor in the Sexually

Transmitted Disease (STD) program in Washington, D.C. In 1975, he joined DTBE and served in his first federal assignment as a TB public health advisor in Norristown, PA, followed by an assignment to Boston, MA, in 1977. In the latter assignment, Vic was assigned to the City of Boston, and also served as a liaison to the state TB program, which was located in another part of Boston. Vic then accepted a position as a project officer with the Bureau of Community Health Services in the Regional Office in Philadelphia, 1977–1981. Vic left federal service in 1981 and returned to the State of Virginia, working first in the state's Certificate of Need program and then in local government as a budget analyst, before returning to CDC, DTBE, in January 1990. During 1990–1992, he was assigned to Missouri's state health department and served as the program manager for the statewide TB control program. During 1992–1996, Vic had assignments in the Texas Department of Health's TB control program and in the Louisiana Department of Health in New Orleans. In 1996, he accepted a transfer back to Missouri and again served in the role of the program manager for TB control for most of his tenure there (1996–2003). In addition to his work with TB control, Vic was also asked to accept the dual role of managing the Immunization program and the TB program in Missouri from 1998 to 2003.

In May 2003, Vic came to DTBE headquarters in Atlanta and served as a program consultant in the Field Services and Evaluation Branch (FSEB), working with the Midwestern states initially, and then with the states of Texas, New Mexico, Arizona, Oklahoma, and Kansas, plus Puerto Rico and the Virgin Islands. On March 23, 2008, Vic accepted the Senior PHA position (Deputy Chief) in the Clinical and Health Systems Research Branch, and then in May 2009, Vic once again took over the reins as a Program Consultant for the Mid-Atlantic States—North Carolina, West Virginia, Virginia, DC, Maryland, Baltimore, Pennsylvania, Philadelphia, Delaware.

During his years at headquarters Vic acquired a number of titles, but none were more fitting, affectionate, and well-deserved than “the Mayor.” This honorary title reflects his excellent talent for getting folks in FSEB and the division motivated and excited about any number of issues from the world of TB control or his own personnel passions. We first became aware of this talent on a very quiet day on the 24th of March 2004. Vic brought in a cake in observance of World TB Day; he took the stage and pontificated and expounded on the accomplishments of TB control over the past decades, and scolded us for not taking the time to celebrate this occasion every year. Hence, his next step was to create the TB Awareness Walk, and as we all know, the rest is history. Thus we want to especially recognize Vic as the founder of the TB Awareness Walk in Atlanta, and all its numerous offspring across the country, and especially for raising the public’s awareness, knowledge, and understanding of tuberculosis; and reminding all of us in DTBE of the great work we do for the Nation. It has always been Vic’s nature and talent to bring people together for a common cause, to inspire enthusiasm, and to recognize others’ contributions. His friendship and wisdom will be deeply missed by all of us.

Vic will be truly missed not only by all his friends and colleagues here at DTBE, but also most certainly by the staff of all the state and big city projects he has closely worked with over the years. He has been an all-encompassing mentor to many over the years, and because of his enthusiasm — his esprit de corps — he has made our world an exciting place to be. We wish him “fair winds and following seas” on his retirement, and a great many thanks for a job well done.

Dr. Thuy Trinh has joined IRPB as a Guest Researcher. She previously worked in the CDC-Vietnam office in Hanoi as the Team Leader for the TB/HIV program and a Medical Research Scientist for the Care and Treatment Division. In collaboration with the Vietnamese Ministry of

Health, she was involved in the development of several new programs, including new TB/HIV programs promoting provider-initiated testing and counseling (PITC) for TB patients, TB screening for HIV patients, infection control in health care settings, capacity building for TB diagnosis among HIV patients, pilot-testing of isoniazid preventive therapy (IPT) for HIV-infected persons, and the provision of antiretroviral therapy (ART) in TB clinics.

Emily Wong has joined IRPB as an Emory work-study student. She is a graduate student of epidemiology at Emory’s Rollins School of Public Health. She was born in Memphis, TN, where she also earned her bachelor’s degree in biology at Christian Brothers University. Following graduation, she worked as a research assistant at the National Sun Yat-Sen University in Kaohsiung, Taiwan. Since beginning at Emory, Emily has worked as a graduate research assistant in the RSPH Department of Epidemiology and as a summer intern at the Health Research Capacity Strengthening Initiative in Lilongwe, Malawi.

In Memoriam

Phyllis Cunningham, a laboratorian in the New York State Department of Health, died on July 29, 2011. Phyllis served as the supervisor of the Mycobacteriology Laboratory at the Wadsworth Center (the New York State public health laboratory), and had been a valued member of the Division of Infectious Diseases since joining the Wadsworth Center in 2002. She had an impressive clinical microbiology background and made important contributions in the bacteriology, biodefense, and mycobacteriology laboratories.

Phyllis was born in Canada in 1959 and received a BS degree in Laboratory Sciences from the University of Edmonton. She had worked in hospitals in Edmonton; Riyadh, Saudi Arabia; Amsterdam, New York; and the Wadsworth Center, New York. In addition to her valuable contributions at the Wadsworth Center, she gave

her time and energy to a number of worthy causes, including traveling to Haiti to assist with laboratory procedures there.

One of her life aims had been to study for the ministry and, in the summer of 2011, she had taken a leave of absence to attend a ministry-related program in Halifax, Nova Scotia; she died in her sleep on July 28. She will be greatly missed by her friends and colleagues.

§

The death of Dr. David Sencer was noted previously (TB Notes No. 2, 2011). We also direct readers to the following item by Dr. Jeff Koplan, former director of CDC. He has provided a wonderfully detailed account of Dr. Sencer's life, character, and achievements, published in the journal *Emerging Infectious Diseases*:

http://wwwnc.cdc.gov/eid/article/17/11/im-1711_article.htm

CALENDAR OF EVENTS

January 6–7, 2012

1st International Conference on Drug Therapy in TB Infection

Edinburgh, United Kingdom
Africa Health Research Organization

January 12–15, 2012

3rd Global Symposium on IGRAs

Waikoloa, HI
[Global Symposium on IGRAs](#)

February 22–25, 2012

American College Preventive Medicine 2012

Orlando, FL
[American College of Preventive Medicine \(ACPM\)](#)

February 23–25, 2012

IUATLD North American Region (NAR) 16th Annual Conference

San Antonio, TX
[International Union Against TB and Lung Disease \(IUATLD\)](#)

April 11–14, 2012

The Denver TB Course

Denver, Colorado
National Jewish Health