DEPARTMENT OF HEALTH & HUMAN SERVICES Public Health Service

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

TB Notes
No. 1, 2013

Dear Colleague:

One of the most important annual events for people working in TB control is World TB Day. On that day, March 24, and the days leading up to it, CDC and many others take advantage of the attention and press coverage to speak out about successes in TB prevention and control, as well as to speak of the challenges that hinder our progress. I hope all of you had a chance to plan or take part in your own World TB Day activities. Staff of CDC's Division of Tuberculosis Elimination (DTBE) organized a number of events; please read about them in this issue.

In December 2012, DTBE first reported on a shortage of isoniazid (INH) in the Morbidity and Mortality Weekly Report (MMWR): www.cdc.gov/mmwr/preview/mmwrhtml/mm6150a4.htm). Unfortunately, shortages of INH are continuing and there will likely be a limited supply of INH for several months. CDC and the National TB Controllers Association (NTCA) have been working closely with the Food and Drug Administration (FDA) and drug manufacturers to assess the INH supply and determine how to ensure that the highest-risk patients receive this medication.

CDC published a health advisory via the Health Alert Notification (HAN) on January 28, 2013 (http://emergency.cdc.gov/HAN/han00340.asp) which suggests the following priorities for allocation of INH:

- Patients being treated for active TB disease
- Patients being treated for latent TB infection if they belong to any of the following categories:
  a) Were diagnosed during a contact tracing of a patient with contagious TB,
  b) Are immunocompromised (e.g., persons with HIV infection, or receiving immunomodulating medications), or
  c) Are less than 5 years of age.

There is also a temporary supply interruption for Tubersol. Please see the CDC Health Alert, "Nationwide Shortage of Tuberculin Skin Test Antigens: CDC Recommendations for Patient Care and Public Health Practice," for information about the shortage: http://emergency.cdc.gov/HAN/han00345.asp.

FDA continues to update its website with the most recent information (www.fda.gov/drugs/drugsafety/drugshortages/ucm050792.htm). DTBE will continue to provide updates on the status of the drug shortage as new information becomes available. DTBE Program Consultants will be checking in with TB programs regularly to assess drug needs. Please be prepared to update your area's Program Consultant on stock levels, as this will help inform additional steps that DTBE can take.

In other news, after serving as the Director of the National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention (NCHHSTP) for 7 years, Dr. Kevin Fenton has returned to the United Kingdom to serve as Director for Health Improvement and Population Health for Public Health England. Kevin's dedication to the health and welfare of the populations served by the divisions in our Center has been exemplary and inspirational, and his friendly and gracious demeanor will be missed by all. We wish him much success in his new position. In the interim, as his replacement is sought, Rima Khabbaz, MD, CDC's Director of the Office of Infectious Diseases, has been serving as Acting Director of our Center.

On December 4–5, 2012, the Advisory Council for the Elimination of Tuberculosis (ACET) met in Atlanta; I will touch on a few of the numerous updates provided at the meeting. In my report, I related that five TB Regional Training and Medical Consultation Centers (RTMCCs) were selected for 2013–2018. In addition to the current four centers (Curry International TB Center in San Francisco, Heartland National TB Center in San Antonio, New Jersey Medical School Global TB Institute in Newark, and Southeastern National TB Center in Gainesville), the group now includes the Mayo Center for TB in Rochester. I also reported that the new TB Epidemiologic Studies Consortium, which focuses on latent TB infection, conducted a pilot study of its Task Order 1 during July–September 2012. Based on the results, the protocol for the task order was amended, and active recruitment for the task order started in fall 2012. In the clinical research arena, I shared that Study 33 (3HP self-administered vs. DOT) is enrolling participants, as is Study 34 (study of Gene Xpert in the United States).

Ms. Ann Cronin reported that the Food and Drug Administration (FDA) approved bedaquiline for treatment of multidrug-resistant (MDR) TB; CDC is working with other agencies to develop a plan for use of bedaquiline in this country (please see the article in this issue about the subsequent expert consultation convened by CDC in January 2013). Also, as described above, shortages of TB drugs are being reported in several states. As one potential solution, DTBE has submitted for IRB approval an Investigational New Drug (IND) protocol for clofazimine, which has a history of safe and effective use for leprosy and MDR TB. The protocol would provide access to clofazimine for patients who have limited other options, i.e., persons with MDR TB, persons with XDR TB, and persons who have had adverse events with other medications. CDC will be responsible for the institutional review board approved IND protocol that programs can rely on, but TB programs will still need to submit a single IND form for each patient to the FDA. TB controllers may contact their Program Consultant for more information on this topic.

The second ACET meeting of 2013 was held March 5, and was conducted as a brief webinar that focused primarily on ACET's report to the Secretary of Health and Human Services. The webinar consisted of three discussion topics: 1) the ACET Chair's report to the Secretary, which entailed a wide-ranging discussion of recommendations, 2) the roles and responsibilities of Federal advisory committees, and 3) topics for the next ACET meeting. The next ACET meeting will be held in Atlanta June 4–5, 2013, and will be conducted as a regular meeting.

The 2013 National TB Conference will be held June 11–13, 2013, at the Crowne Plaza Atlanta Perimeter at Ravinia Hotel. The theme for the 2013 conference is *"TB at the Crossroads: Reasons for Optimism."* This important meeting brings together state, local, territorial, and other TB control professionals with colleagues from CDC to discuss a wide array of TB issues. DTBE considers this to be the most important meeting of the year and requires representatives from all 68 TB Cooperative Agreement recipient sites to attend. As in the past, the conference will be preceded with special meetings on Monday, June 10, and there will be post meetings on Thursday, June 13 and Friday, June 14. I look forward to seeing you there!

Kenneth G. Castro, MD
Assistant Surgeon General, USPHS, &
Commanding Flag Officer
CDC/ATSDR Commissioned Corps
Director, Division of Tuberculosis Elimination
National Center for HIV/AIDS, Viral Hepatitis,
STD, and TB Prevention

In This Issue

TB Notes

Centers for Disease Control and Prevention
Atlanta, Georgia 30333
Division of Tuberculosis Elimination ♦
National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention

HIGHLIGHTS FROM STATE AND LOCAL PROGRAMS

Celebrating Ann Tyree's Contributions to Public Health in Texas (1945-2013)

Do you know anyone able to-

- Cite the Texas Health and Safety Code regarding a notifiable condition?
- Quote a standard delegation order related to TB prevention and control measures in Texas?
- Answer an Institutional Review Board (IRB) related question?
- Name a genotype cluster of *Mycobacterium tuberculosis* related to an outbreak?

As her colleagues can attest, that would be Ms. Ann Tyree. Sadly, Ann passed away unexpectedly on January 6, 2013, at the age of 67.

For more than 20 years, Ann worked at the Texas Department of State Health Services (DSHS), and made substantial contributions to the field of TB care and prevention.

As a Program Specialist, she was responsible for assessing the quality of TB services implemented by the 55 local health departments in Texas. Ann served as the focal point for Texas' TB Program Evaluation Network and was an active participant in several state and national workgroups for program evaluation.

Ann was an effective mentor for the University of Texas' Disease Detective Program. As such, she shared her passion for translating public health in action with several college students, encouraging their pursuit of a career in public health.

She was also an active member of DSHS Outbreak Response Team. She served as the state's "resident expert" for complex TB contact investigations and TB outbreak detection, investigation, and response.

As a curious learner, Ann took an acute interest in TB genotyping. She bridged a gap while the Texas genotype coordinator position was vacant.

Her excellent writing, editing, presentation, and communication skills were evident in many tasks and responsibilities. A few examples include the preparation of annual reports, her annual drafting of the cooperative agreements, and the development of policy and procedure documents for legislative or administrative purposes.

She would always go over and beyond her call of duty graciously without ever complaining and will always be remembered as one of the most responsible, dependable, trustworthy, and reliable employees at the Texas Department of State Health. Her professionalism and genuinely giving nature are qualities for us all to embrace and emulate. She will be remembered very dearly and her legacy will surely continue for future TB control efforts in Texas.

—Submitted by Smita Ghosh, MS,
Div of TB Elimination, and
Charles Wallace, PhD,
Texas Dept. of State Health Services

TB Notes is a quarterly publication of the Division of TB Elimination (DTBE) of the National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention (NCHHSTP), Centers for Disease Control and Prevention (CDC). This material is in the public domain, and duplication is encouraged. For information, contact

TB Notes Editor
CDC/NCHHSTP/DTBE, Mailstop E10
1600 Clifton Road, NE
Atlanta, GA 30333
Fax: (404) 639-8960

DIRECTOR, DTBE
Kenneth G. Castro, MD

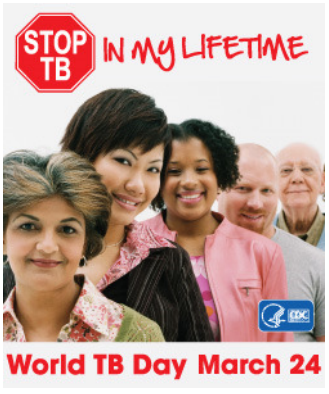
EDITORIAL REVIEW BOARD
Ann Lanner, Managing Editor
Ije Agulefo, MPH
Sandy Althomsons, MA, MHS
Beverly DeVoe-Payton
Michael Fraser
Philip LoBue, MD, FACP, FCCP
Kawi Mailutha
Mary Naughton, MD, MPH
Frances Tyrrell, MPH, MT (ASCP), SM

Visit DTBE's Internet home page, http://www.cdc.gov/tb, for other publications, information, and resources available from DTBE.

2013 World TB Day Events in Atlanta

CDC's 2013 World TB Day Observance

World TB Day is commemorated across the globe with diverse activities and events. It presents an



opportunity for CDC, our partners in state and local TB control programs, and others to raise awareness about TB by educating the public about the disease, sharing TB control successes, and highlighting ongoing barriers to TB control efforts. To educate and raise awareness about TB, CDC's Division of Tuberculosis Elimination (DTBE) and others plan events each year for World TB Day, March 24.

For the second year, CDC joined the global Stop TB Partnership in adopting the slogan "Stop TB in My Lifetime," which goes with the theme of calling for a world free of TB.

On March 22, CDC held its annual World TB Day observance. Dr. Kenneth Castro, Director, DTBE, provided introductory remarks and served as master of ceremonies for the event. Dr. Terrence Lo, Epidemic Intelligence Service Officer, DTBE, presented 2012 provisional TB surveillance data for the United States. Please see Trends in Tuberculosis -- United States, 2012 (CDC. *Morbidity and Mortality Weekly Report* 2013 March 22; 62[11]:201-205) for these provisional data. Dr. Wanda Walton, Chief, Communications, Education, and Behavioral Studies Branch, DTBE, discussed the launch of the TB Personal Stories project; please see the article below for a description of that project.

The keynote speaker was Dr. Susan Ray, Professor at Emory University School of Medicine. She is also a medical consultant for the Georgia Department of Public Health TB Program and a hospital epidemiologist at Grady Memorial Hospital in Atlanta. Her outstanding presentation, titled "It takes a village…stories from the front lines and behind the scenes," was well received. In her remarks, she told the amazing stories of several public health workers in Georgia who went the extra mile to ensure their patients finished their TB treatment; this often involved patients with difficult circumstances (or personalities) that made completion of treatment challenging and complicated.

The event, which was held at CDC's Global Communication Center, was available for CDC staff to attend in person or view online. It was also webcast and viewed by 47 partner sites outside of CDC.

—Reported by Ije Agulefo, MPH
Div of TB Elimination

"C" is for Cookie … Decorated Like TB!

World TB Day (WTD) won't be a celebration until the disease is eliminated. However, March 24 is a day to draw attention to the challenges that must be overcome in order to stop this disease. It is also a time to commemorate achievements, as well as an occasion to thank the people who work daily to combat tuberculosis (TB).

As a small token of appreciation for their DTBE colleagues, Joan Mangan and Cheryl Tryon in DTBE's Communications, Education, and Behavioral Studies Branch baked TB-themed cookies.

Joan's laboratory background came through in the cookies' designs! She and Cheryl decorated the cookies to resemble two laboratory tests used to

diagnose TB. Round cookies were designed to look like a sputum smear showing acid-fast bacilli under the microscope, with Ziehl-Neelsen stain. Covered with white icing, red jimmies were sprinkled on to resemble the TB bacilli. Blue food coloring was then used to hand paint squamous epithelial cells and some stain artifact. Other cookies were cut into the shape of test tubes and decorated to look like *M. tuberculosis* cultures growing on Lowenstein-Jensen agar slants. White and green icing was used to depict the glass and agar, and topped with candy "pearls" to create TB colonies.

Joan (L) and Cheryl with the TB cookies

The cookies were then packaged in little bags, and tied up with ribbon and a note of thanks that incorporated this year's WTD theme, "Stop TB in My Lifetime!" The cookies drew quite a few laughs. While some recipients enjoyed their cookie with their morning coffee, others saved their cookie to show family members.

Unfortunately some colleagues were not in the office when the cookies were passed out, so Joan and Cheryl promise to put their baking skills to work again soon!

—Submitted by CEBSB
Div of TB Elimination

TB Personal Stories Project

To educate and raise awareness about tuberculosis (TB) and put a face on the disease, the Communications, Education, and Behavioral Studies Branch (CEBSB) of DTBE embarked on a project to highlight TB in our country through the stories of TB patients. CEBSB wanted to let people know that TB is still a problem in this country, that it can happen to anyone, and that public health TB control programs provide the essential services needed to prevent, detect, and treat this frightening disease.

The project features patients who have been successfully treated and cured of TB disease, or were given treatment to prevent latent TB infection (LTBI) from progressing to TB disease. It also includes stories about children who were cured of TB, as told by their parents. Potential participants had to be willing to be featured on CDC websites, other public health partner websites, and on social media sites such as YouTube, Facebook, and Twitter.

Results to date include the following:

- Eight TB personal stories were posted to the TB website.
- The TB story of one patient, Kenni, was posted as a CDC.gov feature the week of March 18.
- On March 22, a pilot video montage debuted at CDC's World TB Day observance.

Nicole (L) and Ann with Deo, one of the video participants.

CEBSB's Nicole Richardson-Smith, MA, and Ann Lanner took the lead for the TB Personal Story Project, with CDC's 2013 World TB Day observance as the target for its debut. Nicole and Ann spoke to the leadership of DTBE, the National TB Controllers Association, and other groups to ask for help in getting the word out to state and local TB control programs about the project. The request for possible candidates for the project was met with interest, and in the following days and weeks, they received leads regarding possible participants.

Stories from Texas to South Carolina to Georgia were gathered, written, and posted on the TB website; stories of working mothers, children, health care workers, and others who faced a TB diagnosis and were cured, or found they had LTBI and completed treatment. In addition, three young men in the Atlanta area, Tri, Santos, and Deo, agreed to tell their stories both in print and in video formats. The staff at their county health clinics graciously allowed the broadcast crew and CEBSB staff to take over their conference rooms for a few hours with lights, cameras, make-up, and microphones for the videotaping. A video montage was then produced, with expert commentary provided by Kenneth Castro, MD, Director, DTBE.

Many thanks go out to the TB controllers across the country who made these videos possible by connecting us with the people in their communities -- people who were helped and who regained their health through the work of the TB programs.

The CEBSB team also thanks CDC's broadcast staff. This included Larry Thomas, Broadcast Services Branch, Office of the Associate Director for Communication, who worked closely with CEBSB to set up the videotape sessions. The crew responsible for videotaping and editing consisted of Todd Jordan, Videographer; Susy Mercado, Television Production Specialist; and Cassandra Butler, Telecommunications Specialist.

Finally, Ann and Nicole thank all the participants for being willing to come forward and talk about their experiences. Because of their generosity, others can learn about TB and LTBI, and about the role of public health TB control programs in helping successfully diagnose and treat persons with TB infection and TB disease.

—By Ann Lanner and Nicole Richardson-Smith, MA
Div of TB Elimination

2013 TB Awareness Walk

On Saturday morning, March 23, 2013, members of CDC's Division of Tuberculosis Elimination (DTBE), with a few friends, colleagues, and family members, gathered in Atlanta's Grant Park for the 7th annual TB Awareness Walk. Before the scheduled TB walk event, at least 400 people had registered online.

However, by 9 a.m. on the morning of the walk, a small fraction of that number showed up for the actual walk. Rain – heavy rain – was the culprit.

The TB Awareness Walk has been held every year since 2007 — in connection with World TB Day — to educate the public and raise awareness about TB. And every year the weather has cooperated, often chilly but mostly sunny, with evidence of spring in the air. This year, our luck ran out.

The National TB Controllers Association (NTCA) is the primary sponsor and organizer for the Atlanta event. The group had the task of planning and organizing the event, which is a 4- to 5-month long

process and involves the work of a large cadre of hard-working volunteers. A number of other local government organizations and businesses have supported the TB Walk as well over the years.

Dr. Kenneth Castro, Director, DTBE, remarked later, "I am in awe of all of you who showed up to the 2013 TB Awareness Walk in Grant Park, in spite of thundering and rain! … I am grateful to Eva Forest of NTCA for her key role in the organization of this year's event and to all other stalwart volunteers and potential walkers who showed up ready to walk in the rain to continue to raise awareness on behalf of those suffering of this disease. Your dedication is exemplary and characteristic of the tenacity embodied by those working to prevent and control TB around the country — very much needed and appreciated skills!"

The group waited for the weather to abate, which it did not. Then they cheerfully went off and shared a good breakfast. Some of the refreshment items that had been provided for the walk were delivered to homeless shelters.

—Reported by Ann Lanner and Elvin Magee, MPH, MS
Div of TB Elimination

State and National TB Programs Collaborate to Assess Implementation of 12-dose Weekly Isoniazid and Rifapentine

Results of a clinical trial for latent tuberculosis infection (LTBI) therapy released at the end of 2011 showed the effectiveness of a 12-dose regimen of weekly isoniazid (INH) and rifapentine (RPT) to be equal to the standard 9 month regimen of daily isoniazid. While effectiveness between regimens was similar, the completion rate for those using the directly observed INH-RPT was much higher than those using self-administered INH. CDC recommendations were released shortly thereafter, offering this regimen as an equal alternative for persons age 12 years and older, not pregnant, or not HIV-infected on antiretroviral therapy.

A short, easily tolerated regimen for treating LTBI could provide a game changer for TB control programs, allowing effective treatment of people with LTBI who might otherwise not finish a 9 month course of treatment. However, along with hope and enthusiasm for this new regimen comes caution gained from the previous experience of a short-course regimen using 2 months of rifampin and pyrazinamide. The prior recommendation was reversed when higher rates of hepatotoxicity, sometimes leading to liver transplant or death, became evident.

CDC's DTBE is partnering with TB programs across the country in order to closely monitor the safety of this new 12-dose regimen and to determine completion rates under program conditions. The enhanced surveillance will allow CDC and programs to respond quickly and appropriately if serious adverse events do occur. Sites participating in the post-marketing surveillance project are those that plan on using the regimen and that can monitor patients for symptoms at each dose and report any adverse events to CDC quickly. In addition, the surveillance will capture completion rates, as well as rates of discontinuation due to adverse events, and whether these are associated with particular settings, demographics, or medical risk factors.

Twenty-one state or local health programs are participating in the CDC project; the Bureau of Prisons is collaborating as well. Newly arrived refugees and immigrants; contacts in homeless, outbreak, or incarcerated settings; health care workers with new TB test conversions; and foreign born college students represent some of the people who are being treated for LTBI using the new 12 dose regimen. The sites estimate that 4,000 patients will be started on this new regimen before the end of

2013. To date, 17 of the sites and the Bureau of Prisons have started using the regimen and share experiences with each other through monthly calls.

Participating Sites
New York State HD
Georgia State HD
Kane County HD, Illinois
Bureau of Prisons
Oregon State HD
Virginia State HD
Columbus Ohio HD
Mississippi State HD
Arkansas State HD
South Carolina State HD
North Dakota State HD
New Mexico State HD
Kansas State HD
Nevada State HD
King County, Washington HD
California State HD
Wisconsin State HD
Tennessee State HD
Pima County Arizona HD
Hennepin Co., Minnesota HD
Hawaii State HD
Connecticut State HD

As of October 2012, a total of 1,102 patients had started the treatment, 63 stopped due to symptomatic adverse events, and 8 patients were hospitalized while taking INH-RPT. No deaths were reported. These preliminary findings were shared at the 2012 World Lung Conference in Kuala Lumpur, Malaysia.

—Reported by Christine S. Ho, MD, MPH
Div of TB Elimination

Summary of Expert Consultation on Bedaquiline

On December 31, 2012, the Food and Drug Administration (FDA) announced the approval of bedaquiline (BDQ) for the treatment of multidrug-resistant (MDR) and extensively drug-resistant (XDR) pulmonary TB. The manufacturer, Janssen, expects BDQ to be commercially available in the second quarter of this year. Bedaquiline is a diarylquinoline antimycobacterial drug that inhibits an enzyme necessary for energy production by *Mycobacterium tuberculosis.*

On January 15-16, 2013, CDC convened a multi-agency expert consultancy on BDQ. Participants included 27 external consultants consisting of representatives from state and local TB control offices, the FDA, the Treatment Action Group (TAG), and other national TB experts. In addition, there were Center-level participants and several invited speakers from DTBE. CDC gathered these experts and stakeholders to hear the evidence-based data on the new TB drug BDQ for pulmonary MDR TB; to determine whether efficacy and safety have been shown; and if so, to provide recommendations that will inform CDC guidelines for rollout and monitoring of use of the drug in the United States.

Following introductions and review of administrative matters, the group was given its charge. Questions to the consultancy were reviewed and discussed. The questions were as follows:

1. In regard to its efficacy and safety, should BDQ be used for the treatment of MDR/XDR TB in the United States?
2. If so, what are the indications for its use and what criteria will determine who is a candidate (inclusion and exclusion criteria); in what subpopulations should the drug not be used (may be the basis for an Investigational New Drug application [IND])?
3. How long should patients be treated with BDQ (may be the basis for an IND)?
4. How do we test *M. tuberculosis* for drug resistance to BDQ?
    a. Agar? MGIT? Molecular results?
    b. What labs should be involved with testing?
5. What type of monitoring (for adverse events and response) should be performed for patients being treated with BDQ and at what intervals?
6. What platform should be used for tracking and monitoring patient outcomes/other variables?
    a. Web-based system (probably the best way)
    b. Include patient identifiers?
    c. Who owns the data?
    d. Can the company host programs and then transfer data to CDC?
7. What multidrug regimens should include BDQ?

The group heard presentations from two FDA experts. Ariel Porcalla, MD, MPH, presented an overview of the efficacy and safety of BDQ based on clinical trials data. Dakshina M. Chilukuri, PhD, provided information on the clinical pharmacology and pharmacokinetics of BDQ. These talks were followed by questions from participants.

A working lunch included a moderated discussion of the efficacy and safety of BDQ.

Topics for the afternoon sessions included the following:

- Global epidemiology of MDR/XDR TB
- Epidemiology of MDR/XDR TB in the United States
- Challenges in the treatment and management of MDR/XDR TB: The experience of the CA MDR TB consultation service
- Molecular Detection of Drug Resistance (MDDR) service update
- Discussion of specific questions to the expert consultant group

At 5:00 pm the group was dismissed for the day.

Day 2 began with a summary of the previous day's discussion, followed by an open forum consisting of a discussion on recommendations for the use of BDQ. The group was dismissed at 12 noon.

Based on the discussion and recommendations from the consultancy, CDC guidance will be issued. CDC/DTBE will work closely with partners to ensure that an enhanced monitoring system is in place for tracking patients who receive BDQ.

—Reported by Sundari Mase, MD, MPH
Div of TB Elimination

TB EDUCATION AND TRAINING NETWORK UPDATES

Minnesota Addresses TST Training Needs with Model Kits

Although use of the tuberculin skin test (TST) is becoming less common in Minnesota due to increased use of interferon-gamma release assays (IGRAs), the TST remains an important tool in TB prevention and control efforts. Learning to perform TSTs can be difficult, and as use of the TST becomes less common, fewer healthcare workers may be available to teach and mentor these skills.

In 2006, the Minnesota Department of Health (MDH) TB Prevention and Control Program created five "Tuberculin Skin Testing Models Kits" to address TST training needs in Minnesota (Image). Each kit includes: two soft rubber arm models (6 inches long, 3 inches wide, and 1½ inches high) with multiple indurations and an answer key (1); baby powder (to put on the arms); two red wet-erase markers; five small rulers; instructions for cleaning the arms; *Candidates for Treatment of Latent TB Infection (LTBI)* (an MDH document for categorizing a TST result as positive or negative) (2); a quiz to practice interpretation skills (including answer key); the *Latent Tuberculosis Infection: A Guide for Primary Health Care Providers* booklet (3); and the Centers for Disease Control and Prevention's 30-minute video titled "Mantoux Tuberculin Skin Test" with facilitator guide (4). The kit contents are enclosed in a plastic container with a handle (13 inches wide, 7½ inches deep, and 7 inches high). The only direct costs are the two arms (sold as a set) and the plastic container; together, these items cost less than $100.

Kits are available by loan for use by all health care and public health settings in Minnesota. They are delivered by mail. Each person who requests the kit is asked to complete a one-page paper and pencil survey and return it to MDH with the kit. The survey includes several opinion questions including "This kit is a useful training tool," "I would recommend this training tool to others," "Those who used this kit increased their ability to place, read, and interpret Mantoux tuberculin skin tests," and several open-ended questions.

Between August 2006 and July 2012, MDH filled 105 requests for the kit; the kits were used to train over 1,600 people. Of the 86 people (82%) who returned the survey, 100% strongly agreed or agreed that "This kit is a useful training tool," 100% strongly agreed or agreed that "I would recommend this training tool to others," and 95% strongly agreed or agreed that "Those who used this kit increased their ability to place, read, and interpret Mantoux tuberculin skin tests" (Table, next page).

Many of those who responded to the open-ended questions reported that the arms were a valuable part of the kit and that the learners appreciated the opportunity for a hands-on experience.

Few people reported that there was anything that they didn't like about the kit. Among those who did, the most common complaint was that it was difficult to remove the marks made by the red marker during the process of reading the test.

The survey did not ask how it was determined that the learners increased their ability to place, read, and interpret TSTs or how the learners themselves felt about their skill level after the training. Although the kit reached over 1,600 learners, this likely represents only a fraction of healthcare workers who require training in TST.

This kit is an effective, inexpensive, and easily reproducible tool for teaching TST. The kit was well received by those who used it in Minnesota. Although TST is becoming less commonly used in Minnesota, the need continues for tools for support teaching TST.

If you have any questions about this kit, you may contact the author by e-mail at Elisabeth.Kingdon@state.mn.us or by telephone at 651-201-5529.

Table. Usefulness of Tuberculin Skin Testing Models Kit (N=86)

Question	Strongly agree	Agree	Unsure	Disagree	Strongly disagree
This kit is a useful training tool	81%	19%	0%	0%	0%
I would recommend this training tool to others	80%	20%	0%	0%	0%
Those who used this kit increased their ability to place, read, and interpret Mantoux tuberculin skin tests (N=85)	73%	24%	4%	0%	0%

References
1. Health Edco (www.healthedco.com) Palpable TB Testing Arms – item number 26001, cost $84.30 for set of two arms
2. Source: www.health.state.mn.us/divs/idepc/diseases/tb/candidates.pdf
3. CDC publication: www.cdc.gov/tb/publications/LTBI/ default.htm
4. CDC video: http://wwwn.cdc.gov/pubs/tb.aspx

—Submitted by Beth Kingdon, MPH
TB Education Coordinator/Planner
TB Prevention and Control Program
Minnesota Department of Health

TB EPIDEMIOLOGIC STUDIES CONSORTIUM UPDATES

3rd Semiannual Tuberculosis Epidemiologic Studies Consortium-II (TBESC-II) Meeting

More than 70 Tuberculosis Epidemiologic Studies Consortium-II (TBESC-II) principal investigators, project coordinators, and support personnel joined DTBE staff from SEOIB and several other branches at the 3rd TBESC-II Semiannual meeting February 6-7, 2013. The purpose of the meeting, which was held at the Crowne Plaza Ravinia Hotel in Atlanta, GA, was to share the outcomes of the recent TBESC-II pilot, as well as discuss the study's overall direction and potential future sub-studies. This semiannual meeting also marked the first for the newly formed TBESC-II Board of Advisors, which is comprised of external experts in the areas of TB diagnostics, research and programming. Attendees were welcomed by Phil LoBue, MD, Associate Director for Science, DTBE.

On the first day of the meeting Sekai Chideya, MD, presented the findings from the TBESC-II pilot conducted from July through September 2012. The pilot, which was conducted using actual study forms and a newly developed, state-of-the-art electronic Data Management System (DMS), enrolled 447 participants aged 1-75 years from all 10 study sites. The most frequent eligibility criterion among participants was being foreign born (82%), but many (44%) participants met multiple eligibility criteria. Overall, 86% of participants were foreign born, predominantly from Asia and the Pacific Islands; 11% of all participants were HIV infected.

Nearly half (47%) of participants tested positive on one or more of the three diagnostic tests being studied (QFT-GIT, TSPOT.TB, and TST). Two thirds (67%) of participants who received all tests had full agreement between the three (i.e., either all three tests were negative or all three were positive).The TST was positive and both IGRAs negative for 73 (18%) of participants receiving the three tests. QFT and TSPOT were discordant 11% of the time, and most often with the QFT positive and the TSPOT negative. The three participant characteristics with the highest risk of being positive on one or more test were being foreign born, a member of a group with a local LTBI prevalence ≥25%, and BCG vaccinated. The pilot provided valuable experience and insight that were used to revise the protocol, forms, and DMS. CDC IRB approved the revised materials in September 2012; sites began the active study in October 2012.

Following discussion of the pilot, Joan Mangan, PhD (CEBSB) led a brainstorming session on possible sub-studies regarding enhancing adherence and completion of LTBI treatment. Niaz Banaei, MD, Medical Director of Stanford University's Clinical Microbiology Laboratory, gave a comprehensive presentation on IGRA reproducibility that generated a lot of discussion. Madhu Pai, MD, and Sandra Kik, PhD of McGill University, presented on IGRA predictive value and TB point of care testing.

Highlights of the second day of the meeting included a presentation by Dr. David Holland, MD, of Duke University on cost-effectiveness related to TB prevention. Among talking points he encouraged TB programs to identify exactly what they want to achieve with funding, so as to best determine cost effectiveness. Suzanne Marks, MPH (CRB) also contributed to the discussion.

Northrup Gruman contractor Kumar Batra provided an overview of the DMS's revised and new features for the active study. The second half of the day included an update by Sekai Chideya on the TBESC-II biobanking initiative; a summary by Justin May of University of Florida on the TBESC Laboratory Working Group's recommendations to standardize and improve the quality of QFT testing; and a presentation by Dolly Katz, PhD, on CDC's proposed data sharing agreement.

The 4th Semiannual TBESC-II meeting will be held in Atlanta in August 2013.

—Reported by Sekai Chideya, MD, MPH
Div of TB Elimination

COMMUNICATIONS, EDUCATION, AND BEHAVIORAL STUDIES BRANCH UPDATES

2013 Program Managers' Course

This year's Program Managers' Course was held in Atlanta, Georgia, January 28–February 1, 2013.

The overall purpose of the course is to improve the planning and managerial capabilities of new TB program managers throughout the country. It is designed for TB controllers, program managers, public health advisors, and nurse consultants with programmatic responsibilities at the state, big city, territorial, or regional (within a state) level. Optimally, a course participant should have occupied a TB program management position for at least 6 months, but no more than 3 years. Participants are nominated by the DTBE Program Consultant for their respective area.

This year's 5-day training was divided into 20 sessions. Each session stood alone as a block of instruction, but was sequenced to build logically on the sessions preceding it. The course concluded with a charge to the participants and an opportunity for each of them to share what they learned at the course.

The course stresses the practical application of planning, management, and evaluation concepts to the specific issues and concerns of TB programs. Skills essential to TB program management were presented. Some new additions to the course included an entire day dedicated to cooperative agreements.

For the participants, the course is not entirely over. They will be mailed a 6-month follow-up questionnaire in July 2013. Once this questionnaire is completed and returned, each participant will receive a certificate of completion for the course.

The DTBE Communications, Education, and Behavioral Studies Branch (CEBSB) would like to thank the faculty and participants of the 2013 TB Program Managers' Course for making the course such a success. The hard work of the faculty in preparing the materials for their sessions and the participants' hard work during the course are greatly appreciated.

—Submitted by Allison Maiuri, MPH
and Molly Dowling, MPH
Div of TB Elimination

The Latent TB Infection (LTBI) Treatment Fact Sheet Series

Adverse events while taking treatment for latent tuberculosis infection (LTBI) are rare; however, these adverse events can have harmful, long-lasting results if they do occur.

To help patients, patients' loved ones, and providers recognize and respond to the most common symptoms of a possible adverse event, DTBE staff created the Latent TB Infection (LTBI) Treatment Fact Sheet Series with the help of current and retired TB program staff from Georgia, Alabama, Florida, South Carolina, and Virginia. Patient and provider

feedback on the readability and design of the fact sheets was solicited with support from Georgia's DeKalb and Fulton County TB programs.

The Fact Sheet Series is designed to complement the treatment counseling delivered by a health care provider. The series is comprised of fact sheets for each of the three CDC-recommended LTBI regimens. Each fact sheet provides patients with a written reminder of their treatment regimen schedule, expected side effects, symptoms indicative of a possible adverse event, actions to take if symptoms of a possible adverse event do occur, tips to help remain adherent to the medication, and instructions in the event a dose of medication is missed. Each fact sheet in the series can be personalized for a patient, if necessary.

The three fact sheets are available on the CDC DTBE website and may be downloaded and printed. The fact sheets are located on the TB Publications and Products – Factsheet page, under the title "What You Need to Know About Your Medicine for Latent Tuberculosis (TB) Infection-Fact Sheet Series." The link to these materials is provided below.

www.cdc.gov/tb/publications/factsheets/treatment.htm.

—Submitted by Joan Mangan, PhD, MST, Kimberley Chapman, MPH, CHES, and Gloria Oramasionwu, MD, MPH
Div of TB Elimination

LABORATORY BRANCH UPDATES

Laboratory Capacity Team and APHL Conduct Pilot Trainings: *Essentials for the Mycobacteriology Laboratory: Training Modules Promoting Quality Practices*

Members of the Laboratory Capacity Team (LCT) within the Laboratory Branch of DTBE, in collaboration with the Association of Public Health Laboratories (APHL) and invited faculty, successfully piloted TB laboratory training sessions in three U.S. states in fall 2012 and winter 2013. The full-day, hands-on regional training sessions provided participants with information on fundamental principles and procedures regarding specimen collection, handling, and processing for performing concentrated acid fast bacilli (AFB) smear microscopy. Quality control measures and biosafety topics related to all procedures introduced were discussed.

Recognizing that the laboratory is a critical partner in the diagnosis of TB and that rapid, reliable results are essential for early detection of *Mycobacterium tuberculosis*, LCT and APHL began to address the expressed need for hands-on laboratory trainings that could be taken "on the road" and conducted at public health laboratories with training lab capabilities. A work group composed of subject matter experts from LCT and APHL, and representatives from U.S. public health laboratories developed the content and presentations included in the training module. The course was intended for clinical, commercial, and public health laboratorians with a minimum of 6 months experience in AFB microscopy. Lectures, demonstrations, and hands-on exercises were taught by public health and clinical laboratory experts. Attendees were provided training materials and gained the skills necessary to introduce appropriate

quality assurance measures within their own laboratories.

Pilot sessions were held at the Pennsylvania Bureau of Laboratories in October 2012, the New Mexico Department of Health's Scientific Laboratory in November 2012, and the Los Angeles County Department of Public Health Laboratory in January 2013. Invited faculty differed at each location and included Lisa Dettinger (Pennsylvania Bureau of Laboratories), Julie Tans-Kersten (Wisconsin State Laboratory of Hygiene), Mary DeMartino (State Hygienic Laboratory of the University of Iowa), Olarae Giger (Main Line Health Laboratories, Pennsylvania), Janet Pettegrew (New Mexico Scientific Laboratory), Bill Slanta (Arizona Bureau of State Laboratory Services), Michael Pentella (State Hygienic Laboratory of the University of Iowa), Nicole Green (Los Angeles County Department of Public Health Laboratory), Melanie Osby (Los Angeles County-University of Southern California Medical Center), and David Warshauer (Wisconsin State Laboratory of Hygiene). Kelly Wroblewski and Will Murtaugh of APHL served as facilitators; Kelly attended the PA and NM trainings, and Will, all three. Tracy Dalton, Cortney Stafford, Angela Starks, and Frances Tyrrell of the LCT, who serve as laboratory consultants to the U.S. public health TB laboratories receiving Cooperative Agreement funding, rotated at the trainings in their roles as site facilitators.

Participants indicated through their course evaluations that they found the lectures, discussions, and especially the laboratory exercises to be “excellent” or “good.” The majority of respondents indicated that they would make or recommend changes in the operations of their own laboratories based on the information they learned in the course. APHL and LCT will use the feedback from these pilots to convert the course into a web-based training module available to all laboratorians. Additional trainings and web-based modules are under development for TB laboratory testing practices including culture, identification, and drug susceptibility testing.

—Submitted by Frances Tyrrell, MPH, MT (ASCP), SM and Tracy Dalton, PhD
Div of TB Elimination

NEW CDC PUBLICATIONS

Abraham BK, Winston CA, Magee E, Miramontes R. Tuberculosis among Africans living in the United States, 2000–2009. Journal of Immigrant and Minority Health 2013 April; 15 (2): 381-389.

Auld SC, Kim L, Webb EK, Podewils LJ, Uys M. Completeness and concordance of TB and HIV surveillance systems for TB-HIV co-infected patients in South Africa. Int J Tuberc Lung Dis 2013 Feb 1; 17(2):186-91.

Auld SC, Pevzner E. Reaching beyond our Xpert potential: reflections on the 43rd Union World Conference. [Correspondence.] Int J Tuberc Lung Dis 2013 March 1: 17(3):423–424.

Chai SJ, Mattingly DC, Varma JK. Protecting health care workers from tuberculosis in China: a review of policy and practice in China and the United States. Health Policy Plan. 2013 Jan; 28(1): 100-9. DOI: 10.1093/heapol/czs029. Epub 2012 Mar 16.

Clark IT, Lobato MN, Gutierrez J, Sosa LE. HIV status among patients with tuberculosis and HIV testing practices by Connecticut health care providers. Journal of the International Association of Providers of AIDS Care 2013 March 4. Epub ahead of print. DOI: 10.1177/2325957412473649.

Colson PW, Hirsch-Moverman Y, Bethel J, Vempaty P, et al. Acceptance of treatment for latent tuberculosis infection: prospective cohort study in the United States and Canada. Int J Tuberc Lung Dis 2013 Apr;17(4):473-9. DOI: 10.5588/ijtld.12.0697.

Hales CM, Heilig CM, Chaisson R, Leung CC, Chang KC, Goldberg SV, Gordin F, Johnson JL, Muzanyi G,

Saukkonen J, Vernon A, Villarino ME, Burman WJ. The association between symptoms and microbiologically defined response to tuberculosis treatment. Ann Am Thorac Soc 2013 Feb; 10(1): 18-25.

Kato-Maeda M, Ho C, Passarelli B, Banaei N, Grinsdale J, Flores L, Anderson J, Murray M, Rose G, Kawamura LM, Pourmand N, Tariq MA, Gagneux S, Hopewell PC. Use of whole genome sequencing to determine the microevolution of Mycobacterium tuberculosis during an outbreak. PLoS One 2013. DOI: 10.1371/journal.pone.0058235. Epub Mar 5.

Kim L, Moonan PK, Yelk Woodruff RS, Kammerer JS, Haddad MB. Epidemiology of recurrent tuberculosis in the United States, 1993-2010. [Short communication.] Int J Tuberc Lung Dis 2013 Mar; 17(3): 357-60; DOI: 10.5588/ijtld.12.0640.

Kong DG, Watt JP, Marks S, Flood J. HIV status determination among tuberculosis patients from California during 2008. J Public Health Manag Pract 2013 Mar;19(2):169-77.

Lindquist S, Allen S, Field K, Ghosh S, Haddad MB, Narita M, and Oren E. Prioritizing tuberculosis clusters by genotype for public health action, Washington, USA. [Dispatch.] Emerg Infect Dis 2013 March; 19 (3): 493-495. Available online at http://wwwnc.cdc.gov/eid/article/19/3/12-1453_article.htm

Lo TQ, Oeltmann JE, Odhiambo FO, Beynon C, Pevzner E, Cain KP, Laserson KF, Phillips-Howard PA. Alcohol use, drunkenness and tobacco smoking in rural western Kenya. Trop Med Int Health 2013 Apr;18(4):506-15.

Magee MJ, Bloss E, Shin SS, Contreras C, Arbanil Huamane H, Calderon Ticona J, Bayona J, Bonilla C, Yagui M, Jave O, Cegielski JP. Clinical characteristics, drug resistance, and treatment outcomes among tuberculosis patients with diabetes in Peru. 2013 Int J Infect Dis; http://dx.doi.org/10.1016/j.ijid.2012.12.029.

Mancuso JD, Bernardo J, Mazurek GH. The elusive "gold" standard for detecting Mycobacterium tuberculosis infection. AJRCCM 2013 Jan. 15; 187 (2): 122-124; DOI: 10.1164/rccm.201211-2033ED.

Marrone MT, Venkataramanan V, Goodman M, Hill AC, Jereb JR, Mase SR. Surgical interventions for drug-resistant tuberculosis: a systematic review and meta-analysis. Int J Tuberc Lung Dis 2013; 17 (1): 1-12.

Pasipanodya JG, Moonan PK, Vecino E, Miller T, Fernandez M, Slocum P, Drewyer G, Weis SE. Allopatric tuberculosis host-pathogen relationships are associated with greater pulmonary impairment. Infect Genet Evol. 2013 Mar 15; S1567-1348 (13): 64-6.

Reeves AZ, Campbell PJ, Sultana R, Malik S, Murray M, Plikaytis BB, Shinnick TM, Posey JE. Aminoglycoside cross-resistance in Mycobacterium tuberculosis due to mutations in the 5' untranslated region of whiB7. Antimicrob Agents Chemother 2013 Apr; 57(4): 1857-65. DOI: 10.1128/AAC.02191-12.

Sibanda T, Tedla Z, Nyirenda S, Agizew T, Marape M, Miranda AG, Reuter H, Johnson JL, Samandari T. Anti-tuberculosis treatment outcomes in HIV-infected adults exposed to isoniazid preventive therapy in Botswana. Int J Tuberc Lung Dis. 2013 Feb 1;17(2):178-85. DOI: 10.5588/ijtld.12.0314.

Swindells S, Komarow L, Tripathy S, Cain KP, Macgregor RR, Achkar JM, Gupta A, Veloso VG, Asmelash A, Omoz-Oarhe AE, Gengiah S, Lalloo U, Allen R, Shiboski C, Andersen J, Qasba SS, Katzenstein DK; DS Clinical Trials Group 5253 Study Team. Screening for pulmonary tuberculosis in HIV-infected individuals: AIDS Clinical Trials Group Protocol A5253. Int J Tuberc Lung Dis 2013 Apr;17(4):532-9. DOI: 10.5588/ijtld.12.0737.

Taylor AW, Mosimaneotsile B, Mathebula U, Mathoma A, Moathlodi R, Theebetsile I, Samandari T. Pregnancy outcomes in HIV-infected women receiving long-term isoniazid prophylaxis for tuberculosis and antiretroviral therapy. Infect Dis

Obstet Gynecol 2013: article ID 195637; http://dx.doi.org/10.1155/2013/195637.

Vernon A. Treatment of latent tuberculosis infection. Semin Respir Crit Care Med 2013 Feb;34(1):67-86.

Vinnard C, Wileyto EP, Bisson GP, and Winston CA. First use of multiple imputation with the National Tuberculosis Surveillance System. Epidemiology Research International 2013 Jan. DOI: 10.1155/2013/875234.

Vishnu PH, Bhat P, Bansal A, Satyanarayana S, Alavadi U, Ohri BS, Rao MS, Desikan P, Jaju J, Rao VG, Moonan PK. Is bleach-sedimented smear microscopy an alternative to direct microscopy under programme conditions in India? Public Health Action 2013 March 21; 3(1):23-25.

PERSONNEL NOTES

Ijeoma Agulefo, MPH, will be transferring to a Public Health Advisor position in the Division of State and Local Readiness (DSLR), Office of Public Health Preparedness and Response (OPHPR) after 4 years with DTBE's Communications, Education, and Behavioral Studies Branch (CEBSB). In her new position, Ije is branching off into a different direction to get more public health experience. Her duties will include providing programmatic oversight and coordinating the provision of technical assistance for CDC's Public Health Emergency Preparedness (PHEP) cooperative agreement awardees. She will also work with state and local health agencies to clarify PHEP program requirements and provide guidance regarding program implementation activities to build and sustain public health preparedness capabilities. Ije's last day in DTBE will be May 3.

During her time with CEBSB, Ije worked on a number of projects including planning, organizing, and successfully implementing the annual CDC World TB Day activities and overall management of DTBE's responses to inquiries from CDC INFO. Prior to joining CEBSB, she worked as a health education specialist in the CDC Emergency and Risk Communication Branch (ERCB), Division of Health Communication and Marketing.

She received her MPH in International Health from Morehouse School of Medicine and her BA in Psychology from McMaster University in Ontario, Canada.

Ije will be greatly missed in CEBSB, and we wish her well in this new position!

Glen Christie was selected as FSEB's new Deputy Chief, replacing Joe Scavotto, who retired in December 2012. Glen came to CDC in 2003 after 21 years as a medical specialist in the U.S. Army, in which he worked on developing and implementing plans and standard operating procedures to support medical operations in various assignments within the United States and overseas. Since joining CDC, he has worked in the field of Public Health Emergency Preparedness (PHEP) within the Division of Strategic National Stockpile (DSNS) and the Division of State and Local Readiness (DSLR). He has served as a Program Service Consultant providing technical assistance to state and local public health departments in development of plans to receive medical countermeasures from the Strategic National Stockpile during a public health emergency. He also has served as Team Leader for DSNS' field staff, and as the DSLR Team Leader for program staff managing the PHEP cooperative agreement. In addition, he served as a Team Leader for one of the DSNS' deployment teams and deployed in response to Hurricane Katrina and in support of numerous federal and state exercises. Glen has a B.S. degree in Healthcare Administration from Southern Illinois University and an MPH from the University of South Florida. He assumed his new position on January 27, 2013.

Lois Diem, MT (ASCP) was selected as the worthy recipient of the DTBE Director's Recognition Award for the first quarter of 2013. She was nominated by colleagues in the Laboratory Branch (LB) for her work, "over and above the call of duty."

Lois voluntarily accepted the responsibility of providing leadership and choreographing the move of two laboratory programs from four laboratories in order for DTBE to cede laboratory space to the

Influenza Division (ID). This required tremendous organizational skill as she set into motion the series of interdependent moves that took place over a period of 2 months. Her calm but effective leadership was respected by all involved as she developed and put forth the plan which required the participation of many staff members and optimization of remaining laboratory space. This relatively unpleasant task of ceding laboratory space to a sister division was made bearable by her keen attention to detail and ability to keep all processes on schedule.

As a result of her tremendous effort, LB met the target date of July 16 to relinquish the designated laboratory space in perfect condition to ID. Importantly to DTBE and the TB control community that rely on the services of LB, these moves were accomplished without interrupting the clinical services and research of the branch. Lois exhibits an exemplary spirit of service, initiative, and leadership that contributes greatly to the core mission of NCHHSTP and CDC. Congratulations to Lois for this well-deserved honor.

CDR Puneet Dewan, MD, resigned from the Commission Corps and IRPB, DTBE, effective October 23, 2012, to accept a position as a Senior Program Officer for TB with the Bill and Melinda Gates Foundation in New Delhi, India. Puneet was an EIS Officer with IRPB from July 2001 to June 2003 and then joined the Field Services and Evaluation Branch, DTBE, in December 2003 as the Field Medical Officer assigned to the San Francisco Department of Public Health. From February 2006 until his recent resignation, Puneet served as a medical officer in IRPB, detailed to the World Health Organization Southeast Asia Regional Office (SEARO) in Delhi, India, where he served as senior TB Advisor to Ministry of Health officials in India and provided technical support to the Government of India TB control efforts and neighboring countries in the region. Puneet's position was funded by the U.S. Agency for International Development. Since 2006, he has provided intensive technical support for expanded TB-HIV collaboration, supported the scale up of the program response to MDR/SDR TB, provided support for operational research capacity development, conducted program evaluation activities, and supported the development of national policy guidance related to these aforementioned activities. We look forward to the opportunity to collaborate with Puneet's in his new role with the Bill and Melinda Gates Foundation in India.

Alyssa Finlay, MD, has accepted the position as the Associate Director (AD) for TB at BOTUSA in the CDC Botswana Office in Gaborone. Alyssa is currently serving as the CDC Resident Advisor for the President's Malaria Initiative and the CDC Country Representative in Madagascar, a position she has held since July 2008. Alyssa is well known to IRPB and the Division. She trained as an Epidemic Intelligence Service (EIS) officer in IRPB from July 2003 to June 2005 and was retained as a staff medical epidemiologist in IRPB after completing EIS, including serving as the TB/HIV Team Leader from October 2006 to June 2008. Alyssa will be transitioning to the AD TB position on June 10 and will be arriving in Botswana shortly thereafter. A more detailed announcement will be shared when Alyssa arrives in Botswana in early June 2013.

Paula Fujiwara, MD, MPH, resigned from CDC effective October 22, 2012, to accept a position as the Director for the Department of HIV with the International Union Against TB and Lung Diseases (The Union). Paula served as a CDC Medical Officer in IRPB and was detailed to the Union in Paris, France, from January 2001 to September 2008 to promote the development and implementation of a consortium of international TB experts trained to provide technical consultation on TB prevention and control to various low-resource countries in Africa and Asia. Paula's position was funded by the U.S. Agency for International Development (USAID). Prior to joining IRPB, Paula served in a number of leadership positions in the Bureau of TB Control, NY City Department of Health, including serving as the Assistant Commissioner of Health and Director of the TB Control Program, New York City Department of Health (NYCDOH), from 1996 to 2000 and Director of Epidemiology, Bureau of TB Control, NYCDOH, from 1994 to 1996. Paula was on an extended leave of absence from IRPB, DTBE, from late September 2008 until her resignation in October 2012. We look

forward to our continued collaboration with Paula in her new role.

Maria Galvis, FSEB public health advisor (PHA), has been selected for re-assignment from Las Vegas, Nevada, to Phoenix, Arizona. She will be working with the Arizona Department of State Health Services TB control program. She will serve in a variety of roles assisting with TB prevention and control activities among Native Americans, with bi-national partners, and in correctional facilities. Maria begins her new assignment on May 20, 2013.

Maria started her CDC career as a PHA in June 2011 with her first assignment in Las Vegas, NV. One of Maria's main duties in Nevada has been developing cooperative agreements between correctional facilities and the Southern Nevada Health District (SNHD), serving as a correctional liaison, and maintaining relationships with Nevada private physicians. In addition, she consulted with and provided technical assistance to disease investigators on difficult and challenging contact investigations. Maria also collected data and served as the Nevada point of contact for the post-implementation 3HP assessment project.

Maria has previous experience working in the TB programs in Miami, FL, and in New York City, NY. Her duties included collecting and analyzing surveillance data, providing case management, performing active disease surveillance, conducting targeted testing activities with the immigrant population, providing program management, and planning, developing, and implementing TB-related training for health care workers. Maria received a BA degree in Psychology at Hunter College in New York City and is currently working on completing requirements for a Master of Public Health degree.

In addition, Maria and Deborah Bedell (CDC PHA formerly with DTBE) were winners of the February 2013 CDC/NCHHSTP Director's Recognition Award. Maria and Deborah were integral to the successful initiation of treatment for latent TB infection (LTBI) of 166 people during a contact investigation at a Denver-area high school in early 2012. Maria and Deborah helped launch one of the first U.S. contact investigations using the new short-course treatment regimen for treatment of LTBI (3 months of isoniazid and rifapentine). The outcomes will be extremely beneficial to DTBE's scientific understanding of the efficacy and side effects of this regimen on students.

Judy Daugherty Gibson, MS, Nurse Consultant in the Field Services and Evaluation Branch (FSEB), DTBE, retired from CDC on March 31, 2013, after nearly 22 years of service to CDC and 40 years in public health.

Judy joined CDC on July 15, 1991, and devoted her entire CDC career to DTBE in the roles of health educator, project officer, National Health and Nutrition Examination Survey (NHANES) study team member, and program evaluation specialist. After joining DTBE, Judy served as project officer for a study with a national and regional minority organization (NRMO) and community-based organizations (CBOs). The study formed CBO partnerships with local health departments to deliver targeted testing and treatment for latent TB infection (TT/TLTBI) in CBOs serving foreign-born persons in eight sites. The study findings were used to describe partnership components and incentives in the new TB control program cooperative agreement announcement. Judy served as a co-project officer for a case study evaluation of six TT/TLTBI programs that received funding for 5-year projects. The evaluation developed a framework for program improvement.

During 1999–2000 and 2011–2012, Judy represented FSEB on study teams working to standardize the reading of tuberculin skin test (TST) results among newly trained workers for NHANES. She determined the accuracy of readings for TB infection, as well as variation over time between new readers and trainers to reach the goal of reading TST results within 2 mm between readers. She developed the training protocol and the quality assurance requirements, including the blinded independent duplicate reading (BIDR) method, as well as a check list of standardized procedures to ensure that reliable and valid data are gathered. She helped develop training materials for TST placement and readings, based on the protocol,

that have been widely used by CDC partners for 10 years.

In the past 12 years, Judy has expanded the scope of her research to include TB monitoring and program evaluation. She found a passion for performance measurement and program evaluation during course work for the Graduate Certificate Program in Public Health at Johns Hopkins University. Judy's research and consulting activities focused on TB case management for completion of therapy and core competencies for the nurse consultant. Judy led an effort to describe the Patient Centered Care (PCC) model and tools for ensuring completion of TB therapy based on the Riley program evaluation framework. She assisted nurse consultants in testing a model-based data collection tool for targeted testing.

In the first public health chapter in the book *Essentials of Nursing Informatics*, Judy helps students understand their role in gathering surveillance data in health information technology systems and using data for public health action. She also proposes the Public Health Nurse Infomatician role at CDC.

In 2007, Judy received the U.S. Public Health Service (PHS) Chief Nurse Officer Award for outstanding contributions to the nursing profession at CDC. The U.S. PHS Chief Nurse Officer Award recognizes professional nurses who have made an impact in clinical or nonclinical settings through their commitment to the spirit of nursing, and to the ideals of the PHS.

Judy received an MS degree in Community Health Nursing at Texas Woman's University, Denton, Texas, and began her TB career as a program manager for the Dallas County TB Control Program. Judy served as principle investigator for U.S. PHS Study 21, which began enrollment in 1981. The study confirmed the rifampin-based short-course therapy results found by the British Medical Research Council and led to the adoption of 6-month therapy for TB disease in the United States. In addition, Judy served in the U.S. Naval Reserve (USNR).

Judy looks forward to becoming a nonworking Mom and Grandma to two daughters, one son, one step-son, and 10 grandchildren, and enjoying retirement life with her husband, David Gibson, who retired from the General Services Administration in 2011. She is eager to continue a family photo history and genealogy project started by her father and grandmother. She also plans to spend some time in Dallas with her father, Robert Mureen, and disabled older brother, Richard. Later in 2013, Judy and Dave will start an Atlanta-based consulting business.

Many of Judy's friends and colleagues in DTBE attended a retirement party for her on March 15, 2013, to wish her well in retirement.

Andy Heetderks, MPH, was selected as the new Team Lead for Field Operation Section (FOS) West in FSEB. Andy is well known to TB colleagues as a project officer and Lead Public Health Advisor in FSEB. His field assignments have included St. Louis, MO; Fulton County, GA; Miami, FL; and New York City, NY. Since 1993, Andy has served as a DTBE project officer to over half the United States cooperative agreement (CoAg) recipients. For the past decade, he has balanced working with California (and the big cities therein) along with Hawaii and the U.S.-Affiliated Pacific Islands (USAPIs). His portfolio in working with the USAPIs includes serving as lead for NCHHSTP's Integrated CoAg for the USAPIs; for the Pacific Regional TB Reference Laboratory contract; for the Pacific TB Web-based Surveillance and Reporting System contract; and for the Intra-agency agreement/Intra-departmental delegation of authority with the Health Resources and Services Administration (HRSA) for regional collaboration in the Pacific, which allows for the annual Pacific Island TB Controllers' Association (PITCA) workshop. He has also led the efforts to plan and facilitate the first three U.S./Mexico TB Summits. Andy has a B.S. degree in biology from North Georgia College and an MPH in Policy from Emory University. He assumed his new position on January 13, 2013.

Kelsey Lauren Hughes has joined the Applied Research Team of DTBE's Laboratory Branch as an ORISE Fellow. She will be evaluating the effect of pyrazinamide (PZA) mutations on pyrazinamidase

activity in *Mycobacterium tuberculosis* with the aim of contributing to an improved PZA drug susceptibility test. She will also be building and maintaining a database containing the data collected from this PZA project. Kelsey earned her B.S. in Biochemistry and Molecular Biology with a minor in Computer Science from Mercer University. She worked on several independent research projects during her college career, including analyzing the protein-protein interactions of knockout genes in the notch-1 protein of *Drosophila melanogaster* and examining the effects of varying nitrogenous concentrations on *Escherichia coli*. Kelsey is a New York Giants fan and enjoys exercising, tennis, and playing Xbox in her free time.

Maureen McDermott, MA, MS, will be providing administrative support for SEOIB. She received her BA in Education from the State University of New York, an MA in French from the Sorbonne in Paris, France, her MS in Public Administration and Urban Studies from Georgia State University, and a paralegal certificate from Emory University. She has worked as an instructor at Georgia State University and in several capacities with MARTA, numerous law firms and legal outfits, Equifax, the Coca Cola Company, Cadence Group, Randstad, and most recently with CDC/ADSTR as an administrative assistant. With an extensive background in the legal arena, law library sciences, and records management, Maureen will be instrumental in helping DTBE archive materials in preparation for our likely move to Building 12 this summer. Welcome, Maureen!

Kiren Mitruka, MD, has transferred to a medical officer position with the NCHHSTP Division of Viral Hepatitis, Prevention Branch. During her nearly 5 years with DTBE/SEOIB's Outbreak Investigations Team, Kiren supervised the investigation of numerous TB outbreaks, working closely with EIS officers in both SEOIB and IRPB, as well as the Epi-Aid on the 2009 decline in reported TB, leading to a highly regarded presentation at a European CDC meeting. She also earned praise for her management of a clinical services team in CDC's Emergency Operations Center during the H1N1 outbreak. Two of her published papers, an outbreak overview paper in *Emerging Infectious Diseases* (2011) and a completion of treatment paper in *IJTLD* (2012), have already begun to be cited widely. Simultaneous to all these accomplishments within DTBE, Kiren was able to complete her MPH coursework and be recertified as an infectious disease specialist, studying evenings and on weekends. Despite this strong work ethic and focus, Kiren always makes time for a kind word for coworkers, and everybody who works with Kiren will miss her gentle diplomacy with external partners. She began her new position on March 25.

Mara Oelemann has joined the Applied Research Team of DTBE's Laboratory Branch as an ORISE Fellow. Mara will be evaluating MIRU-VNTR 24 loci and other innovative genotyping methodologies to understand the transmission and the molecular evolution of TB strains within human populations.

Mara recently moved from Brazil, where she studied the molecular epidemiology of TB at Oswaldo Cruz Foundation in Rio de Janeiro. Mara earned her MSc in 1995 in Biochemistry and received a PhD fellowship to work at the Institute Pasteur in Lille, France. During her stay in France, she examined over 900 TB isolates from different regions of Brazil by evaluating the application of MIRU-VNTR 24 loci combined with spoligotyping and deligotyping. She also evaluated the performance of MIRU-VNTR 24 loci in combination with spoligotyping and IS6110 RFLP for the detection of transmission chains in culture-confirmed TB patients reported in Hamburg, Germany. In her free time, Mara enjoys traveling, listening to music, going to the cinema, reading, and being with family and friends.

Germania Pinheiro, MD, MSc, PhD, has accepted a position as the Team Lead for the Environmental Medical Team in the Environmental Epidemiology Branch, Division of Toxicology and Human Health Sciences, NCEH, ATSDR. Germania began her new position on February 17, 2013. She joined IRPB in 2009 as a Senior Service Fellow and served as the Lead for activities in the Latin America and Caribbean region including coordinating with others in DTBE, the Division of Global Migration and Quarantine, and the Center for Global Health on activities and initiatives along the US-Mexico border. We

congratulate Germania on her new role and thank her for the outstanding contributions to IRPB and DTBE efforts to address TB in Latin America and the Caribbean Region and along the US-Mexico border. We look forward to the opportunity to collaborate with Germania in her new role at NCEH.

Sharon Robinson has joined the Office of the Director of DTBE. Sharon joined CDC in 2008 and worked in the National Center for Injury Prevention and Control/ Division of Violence Prevention before moving to the CDC Office of the Associate Director for Policy. Prior to coming to CDC, Sharon worked for the DeKalb County School System in various capacities. She was also employed with the Federal Reserve Bank for 13 years and Peachtree Software for 5 years. Sharon holds a Bachelor of Business Administration degree in Management from Georgia State University. Sharon will be working with Rickenya Hodge on the management of cooperative agreements and contracts.

Luis Alberto Romero has joined the Reference Laboratory Team of the Laboratory Branch as an ORISE Fellow. In this capacity he will assist with CDC's Molecular Detection of Drug Resistance (MDDR) Service to detect mutations associated with drug resistance in *M. tuberculosis* complex for the effective treatment of patients suffering from TB. Luis received his B.S. in Chemistry from the Georgia Institute of Technology in 2012, and had previously participated in research involving cancer and public health. In his free time, Luis enjoys playing basketball, rock climbing, and volunteering.

Dr. Nong Shang, Statistician with the Data Management and Statistics Branch, has accepted a position with the Division of Bacterial Diseases, where he has served on a temporary detail since the beginning of 2013. Nong's move will formally take effect within the next few weeks, but he will continue limited engagement on his TB projects through mid-May. We will miss him, and we sincerely hope that this move will continue to stimulate his intellectual and personal growth. We appreciate and celebrate his many contributions to DTBE over the past 10.5 years.

Nong received his PhD from the University of California-Berkeley in 1993 and taught statistical methods at the Rensselaer Polytechnic Institute in Troy, New York, before coming to CDC in August 2002. In his time with DTBE, he has become a leading and respected expert on methodology in clinical trials for preventing TB. He led the statistical analysis of the Botswana IPT trial (whose primary manuscript was nominated for a Shepard Award) and the TBTC's noninferiority trial of the 12-dose INH-RIF regimen for treating LTBI (whose primary manuscript won a Shepard Award). He led or substantially contributed to many other projects as well, including projects that are improving our ability to understand screening diagnostics and to forecast or detect outbreaks.

Dr. James Shepherd has accepted the position as in-country CDC Medical Officer, detailed to the WHO India Country Office, to serve as a senior TB advisor and provide technical assistance to the Government of India Revised National Tuberculosis Control Program. James is currently serving as the Associate Director for TB at the Botswana USA collaboration (BOTUSA) in the CDC Botswana Office in Gaborone. He will depart Botswana at the end of April 2013 and is tentatively scheduled to arrive in India during the first week of May 2013. A more detailed announcement will be made immediately after James arrives in India in May.

Deanna Tollefson, MPH, joined the Program Strengthening and Epidemiology Team (PSE) in IRPB as a contractor beginning March 4, 2013. Deanna earned an MPH degree from the Rollins School of Public Health at Emory University in 2012. While at Emory, Deanna worked in IRPB as a Research Assistant with the PSE Team, during which she led the design and writing of a systematic literature review on TB burden in indigenous peoples. After completing her MPH in 2012, Deanna joined the International Division at John Snow Inc., where she documented success stories related to a USAID-funded HIV/AIDS project in Zambia. After spending 6 months overseas, Deanna will be re-joining the PSE team and will primarily work on operational research and surveillance strengthening activities. Please join us in welcoming Deanna back to IRPB.

In Memoriam

Ann Tyree, Program Specialist with the Texas Department of State Health Services (DSHS), passed away on January 6, 2013, at the age of 67. She had served the Texas DSHS for over 20 years in a variety of TB program positions.

Ann was born in Evansville, Indiana, on July 3, 1945, to Halbert and Sarah Bybee. She graduated from Memorial High School in Houston and attended Vanderbilt University (BA in Chemistry) and the University of Virginia (MS in Chemistry). She settled in Austin, Texas, in 1987 and joined the Texas Department of State Health services in 1993, where she remained employed throughout her career and her life. Ann was married to Walter Preston Tyree III for 45 years; they had two sons and six grandchildren. She is survived by her mother, Sarah (Sally) Bybee of Austin, Texas; her brother, Halbert Bybee, Jr., of Richardson, Texas; her husband Preston; and her two sons, Walter Preston Tyree IV of Alexandria, Virginia, and John Edward Tyree of Austin. A celebration of Ann's life was held January 11 in Austin.

CALENDAR OF EVENTS

April 22–26, 2013
2013 EIS Conference
Atlanta, GA
CDC

May 15–18, 2013
TBTC Meeting
Atlanta, GA
Division of TB Elimination (DTBE)

May 17–22, 2013
American Thoracic Society International Conference
Philadelphia, PA
American Thoracic Society

May 29–31, 2013
Annual CTCA Spring Conference and training
San Jose, CA
California Tuberculosis Controllers Association

June 2–5, 2013
APHL Annual Meeting and 7th Government Environment Laboratory Conference
Raleigh, NC
APHL

June 4–5, 2013
ACET
Atlanta, GA
Division of TB Elimination (DTBE)

June 9–13, 2013
Council of State and Territorial Epidemiologists Annual Conference
Pasadena, CA
Council of State and Territorial Epidemiologists

June 11–13, 2013
2013 National TB Workshop
"TB at the Crossroads: Reasons for Optimism"
Atlanta, GA
National TB Controllers Association
(Pre-meetings June 10, 2013; post-meetings June 13 & 14)

August 19–21, 2013
APHL 8th National Conference on Laboratory Aspects of Tuberculosis
San Diego, CA
www.aphl.org/conferences/pages/default.aspx

September 9, 2013
6th International workshop on Clinical Pharmacology of TB Drugs
Denver CO, USA