DEPARTMENT OF HEALTH & HUMAN SERVICES Public Health Service

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

TB Notes
No. 2, 2008

Dear Colleague:

The 2008 National TB Controllers' Workshop was held in Atlanta, Georgia, June 9–12, 2008, at the Crowne Plaza Ravinia Hotel in Atlanta. As always, this was a well-planned event with outstanding presentations by experts in TB control, updates on important research topics, timely and useful break-out sessions, and opportunities to network with colleagues. Our theme this year, "Many Cultures – One Cause," allowed us to focus on some of the challenges and solutions of preventing and controlling TB among the diverse cultural populations residing in the United States. Please mark your calendars for the 2009 National TB Controllers Workshop, which will be held June 15–19, 2009.

The Division of Tuberculosis Elimination (DTBE) commemorated World TB Day 2008 through three major events: a CDC-wide program on March 20, the second annual TB Awareness Walk on March 22, and the World TB Day luncheon on March 24. These events were the culmination of the work of many people in the division. None of the above activities, or those that go on throughout the year, would be possible without the contributions of our many partners: the National TB Controllers Association, the National Coalition for the Elimination of TB/Stop TB USA, the American Lung Association (including state/local chapters), RESULTS International, the Georgia Division of Public Health, the Fulton County Health Department, the Watsonian Society, and state and local TB control programs across the country. I hope World TB Day provided you with opportunities to educate the public about TB, celebrate your successes, and renew your dedication to our common goal, the elimination of TB.

The 2008 North American Region Stop TB Partnership met in San Diego on February 28 for a special session. At this session, Stop TB USA (formerly the National Coalition for the Elimination of Tuberculosis, or NCET) was officially launched. The new name "Stop TB USA" better aligns and identifies the coalition with other global Stop TB Partners such as Stop TB Canada and Stop TB Mexico, and thus clarifies its role as a partner in a larger group rather than a stand-alone U.S. entity. Coalition building and advocacy continue to be the core functions of Stop TB USA. The original coalition, NCET, is credited with playing a major role in bringing about a significant increase in federal support for TB control in the 1990s. Stop TB USA has formed a work group to develop an updated TB elimination plan for the United States. The updated Plan will include a revised endpoint for TB elimination, possibly 2025, and will include cost estimates for carrying out the recommendations. The group's current goal is to complete the new plan in 2008.

Immediately following the Stop TB Partnership meeting, the 2008 conference of the International Union Against Tuberculosis and Lung Disease–North American Region

(IUATLD-NAR) was held Feb. 28–March 1. With the theme, "Tuberculosis: A Disease Without Borders," the conference focused on building partnerships and collaborations beyond the North American region. The message conveyed was that by linking with Latin American partners, North American TB controllers will likely find their efforts enhanced in preventing and controlling tuberculosis. This year the IUATLD-NAR partnered with the California Tuberculosis Controllers Association, affording a focus that was at the same time international and community based.

The Advisory Council for the Elimination of Tuberculosis (ACET) met in Atlanta March 26–27 and again June 17–18. At the March meeting, Kevin Fenton, MD, PhD, Director, National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention (NCHHSTP), reported on Dr. Julie Gerberding's testimony before Congress in February regarding CDC's response to drug-resistant TB. The hearing went very well, and served as an essential step in raising awareness about our ongoing work. Dr. Fenton also mentioned the availability of the summary report from the August 2007 Program Collaboration and Service Integration (PCSI) consultation. You can find the report on NCHHSTP's PCSI webpage at www.cdc.gov/nchhstp/programintegration/Default.htm. PCSI activities remain among Dr. Fenton's top priorities.

I reported on DTBE's 2007 provisional surveillance data. These data reveal the worrisome trend of a slowing in the annual percentage rate change, from an average decrease of 7.3% during 1993–2000, to an average decrease of only 3.8% during 2000–2007. Dr. Tom Navin outlined a process for refining the focus of the TB Epidemiologic Studies Consortium (TBESC). DTBE will decide on the new focus by the end of 2009 and select new TBESC partners in 2010, if feasible. Dr. Rick Goodman and Heather Duncan gave an update on CDC's Public Health Law Program: TB laws will be organized, reviewed, and described; using that information, a Model TB Act will be developed; and a handbook on TB control laws will be developed.

Suzanne Marks and Dr. Jennifer Flood reviewed data on TB as a cause of death, which suggest that access to health care may be a problem for HIV-infected persons. Dr. Max Salfinger, representing the Association of Public Health Laboratories (APHL), urged more widespread use of nucleic acid amplification testing for TB diagnosis and detection of drug resistance. Dr. Diana Schneider outlined problems relating to U.S.-Mexico border TB control, and proposed the establishment of a model binational TB control program to provide case management and DOT, and to build laboratory capacity. Dr. Barbara Seaworth reported that the BCG Workgroup had developed recommendations about the use of BCG in persons traveling to high-risk areas (i.e., areas with increased MDR and XDR TB). In general, they recommend consideration of BCG vaccination when MDR or XDR TB transmission is likely, and there is no evidence the individual has LTBI or active TB.

ACET reconvened on June 17–18, 2008. Dr. Fenton related that the fiscal year 2007 NCHHSTP Annual Report is available in print, and can also be found online at http://www.cdc.gov/nchhstp/docs/NCHHSTP2007AnnualReport_final-c.pdf. I reported on ACET's draft recommendations for the use of BCG vaccine to prevent TB in health

care workers traveling to high-risk areas. Members of the Advisory Committee on Immunization Practices (ACIP), who are working with ACET on these guidelines, will meet with ACET June 26 in Atlanta to discuss them. I also gave an update on the expert consultation on nucleic acid amplification tests (NAATs) held in Atlanta on June 13. The experts agreed that all persons suspected of having pulmonary TB should have a respiratory specimen tested by NAAT, and a negative NAAT with two negative AFB smear results should suffice to gain release of TB patients from isolation. Also, on August 4–5, CDC will host an expert consultation on interferon gamma release assays (IGRAs) in Atlanta. More information on all these guidelines will be forthcoming.

Dr. Drew Posey reported that as of June 13, 2008, persons from 14 countries are being screened using the new 2007 TB technical instructions for panel physicians. He also reminded us that, by the end of fiscal year 2008, the Electronic Disease Notification (EDN) system will replace the paper-based system for reporting the arrival of immigrants and refugees with TB. Ms. Laura Leidel gave an update on the use of Do Not Board lists to prevent the spread of TB during air travel. An *MMWR* with updated procedures and protocols for using this tool has been drafted; expedited clearance will be requested.

Dr. Kashef Ijaz and Mr. Phil Griffin reviewed the formula for TB funding redistribution; funding for laboratories and big cities are still under discussion, but in general the process is on track. Amera Khan and Dan Ruggiero outlined the recent activities and accomplishments of the four Regional Training and Medical Consultation Centers (RTMCCs). Meetings will be held with DTBE and partners to determine how to best use RTMCC resources in the future. Ms. Tonya Martin, Senior Advisor for Informatics with the Coordinating Center for Infectious Diseases, reported on the TIMS-to-NEDSS transition: as of January 2009, states will begin using the new RVCT for reporting cases. The reporting mechanism for the new RVCT will be the NEDSS HL7 TB Case Notification Message; TIMS will not be updated to work with the new RVCT.

Dr. Tom Navin provided an overview of DTBE surveillance activities, including an enhanced surveillance project for MDR and XDR TB; information on this project will be analyzed this summer. Dr. Andy Vernon discussed a recent review of the TB Trials Consortium (TBTC) by its Scientific Advisory Group of Experts (SAGE). The SAGE review highlighted TBTC’s progress and its continuing challenges. He voiced concern about the contrast between promising new drugs and regimens and the continuing gradual erosion of TBTC's funding base—particularly significant now with the TBTC scheduled for recompetition in FY 2009, and an increasing emphasis upon engaging sites in high-burden countries.

Dr. Rick Goodman and Heather Duncan provided the latest update on activities related to reviewing and characterizing TB control laws and developing new legal resources for TB control. A model act on TB control is scheduled to be completed by the end of this year. Mr. Shannon Jones and Ms. Gail Grant summarized the impressive work that has been done by the ACET workgroup on TB in African Americans, and Dr. Dolly Katz gave a progress report on the updated guidelines for controlling TB in foreign-born

persons. She asked ACET if CDC should recommend testing with IGRAs as preferable to testing with the tuberculin skin test. Key issues are that the IGRA seems to be more sensitive, but it is also more expensive. More on this will be forthcoming.

Dr. Tom Navin discussed challenges encountered related to requirements under the Paperwork Reduction Act; Drs. Terry Chorba and Vishnu Sneller of NCHHSTP gave further guidance on this topic, informing us that CDC has been somewhat lenient in observing the Paperwork Reduction Act and will need to be more compliant in the future. Dr. Tom Shinnick gave an overview of the genetic basis of drug resistance and the methods available for detecting resistance. He reported that line-probe assays for drug-susceptibility testing for MDR TB are fast and sensitive; these tests still require FDA approval. After further discussion of business matters, the meeting was adjourned.

Late summer and fall will be a busy time for DTBE staff, owing to the many meetings and conferences scheduled. Some of these include the TB Education and Training Network 8th Annual Conference (August 5–7), the 5th National Conference on Laboratory Aspects of Tuberculosis (August 11–13), and the 2008 TB Program Managers Course (October 27–31), all in Atlanta. There are a number of other scientific and regional program meetings as well. Before all these activities begin, I hope you will find time to relax this summer and recharge your batteries!

Kenneth G. Castro, MD

In This Issue

Note: The use of trade names in this issue is for identification purposes only and does not imply endorsement by the Public Health Service or the U.S. Department of Health and Human Services.

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

Number 2, 2008

HIGHLIGHTS FROM STATE AND LOCAL PROGRAMS

TB Housing Village for Homeless Patients, Yuma County, Arizona

In 2007, Arizona reported 301 cases of active tuberculosis (TB) disease, with a case rate of 4.7 per 100,000, exceeding the U.S. rate of 4.4. Yuma County, located along the U.S.-Mexico border in southwestern Arizona, had 25 TB cases and a case rate of 12.4 per 100,000 in 2007. In addition, the county's population increased nearly 20% between 2000 and 2007.

In Arizona, the responsibility for care of TB patients belongs to the local health departments.

The TB Control Program of the Yuma County Public Health Services District provides diagnosis, case management, and treatment services for Yuma County residents with TB. Providing housing for homeless patients during treatment for active TB can be very difficult and expensive. Yuma County in Arizona sets an example of how this can be done in a cost-effective way.

In 2005, Yuma County had three homeless people with active pulmonary TB who were admitted to a local hospital. These homeless people were contagious and therefore unable to be discharged to a homeless shelter. All three were hospitalized for 2 to 3 months. The estimated cost per person to Yuma County for the hospital stays was $900 per day.

This prompted Yuma County's government to find a more cost-efficient solution for managing infectious homeless patients with TB. The County held public meetings to gather public input and identify any community concerns or issues. In July 2005, Yuma County allocated $450,000 for housing of TB patients. Existing county property was made available as the site for the TB Housing Village.

The TB Housing Village was completed in March 2007. It includes four pre-fabricated housing units, with provisions for four additional units in the future. The housing units include a kitchen and were furnished with general household items such as a telephone and a television. The TB Housing Village also has an annual budget of $20,000 for maintenance and utilities; maintenance issues are addressed by the Yuma County General Services Department. A written TB Housing Village policy was developed.

In addition to providing housing, the Yuma County TB Housing Village provides meals three times a day, directly observed therapy, and case management services for homeless TB patients. This housing is also available for Yuma County residents who have contagious TB disease and need temporary housing, such as infectious parents of small children. TB public health staff

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members make daily visits to the patients for observation, assessment, case management, and directly observed therapy.

Since August 2007, five persons with active TB have been placed at the TB Housing Village. Of those five patients, one transferred to California during treatment and notification was sent to the local health department for follow-up; three are still on TB medications; and one completed treatment. The cost-savings are still unknown at this time; however, it is expected they will be significant when compared to housing costs for private facilities.

For Yuma County TB program staff, the biggest challenge has turned out to be the mental health issues of three of the five persons placed in the housing units. The National Coalition for the Homeless reports approximately 25% of the homeless suffer from mental illness and require ongoing access to a full range of treatment and rehabilitation services.

The TB program staff members were unaware at the time of placement that these individuals would require mental health services. For one resident requiring immediate mental health services and intervention, help was not available because of staffing issues at the local mental health agency. Thus, it might be useful to consider providing mental health screening for TB patients before placing them in the housing village, to ensure timely coordination of mental health services as well as to ensure the welfare and safety for the residents, county staff, and the property.

—Submitted by Angelito Bravo, MD; Karen Lewis, MD; and Kristina Schaller
Arizona Department of Health Services
Becky Brooks, Maria Nunez, RN, and Monica Salgado, RN
Yuma County Public Health Services District

Public Health and Correctional Partnership in Georgia

The Houston County Health Department in Warner Robins, Georgia, has formed a partnership with the Houston County Detention Facility to provide treatment for inmates with latent TB infection (LTBI) in a correctional setting, since early identification and successful treatment of persons with TB infection and disease remains the most effective means of preventing disease transmission. This joint venture best accomplishes the shared responsibility of the overarching activities between public health and corrections. The partnership will allow for the detection of substantial numbers of persons with LTBI who are at high risk for progressing to TB disease and would likely benefit from a course of treatment.

The need for this partnership became evident as the detention facility found it increasingly problematic to provide transportation of the inmates to the health department to receive the required services (e.g., monthly assessment, lab work, and medication). The detention facility had to assign an officer to transport one prisoner at a

time to the health department. With up to 20 inmates a month needing clinical services, this was a time-consuming and costly procedure. In addition, the inmates would have to sit in the lobby with the assigned guard along with the other health department clients. This made some of the clients anxious. In March 2006, this partnership was initiated. Several persons were instrumental in bringing this partnership to fruition: Major Charles Holt, Jail Administrator, and Janet Willis, RN, Medical Nurse Director, Houston County Detention Facility; Wayne Mencer, District TB Outreach Worker; and Faye Mencer, RN, BSN, TB Program Manager, Houston County Health Department.

Ms. Mencer worked with the Houston County Health Department's Nurse Manager, the District TB Coordinator, the District Health Director, and the District Pharmacy Coordinator to determine the process by which the infected inmates would be screened, evaluated, and given medication for treatment of LTBI. On a monthly basis, she visits the detention facility to perform inmate assessments, retrieve drawn blood samples (e.g., AST, HIV, etc.) to forward to the appropriate laboratory, and deliver the supply of LTBI treatment medication for each designated inmate to the facility's Medical Nurse Director. While it can be a challenge to see a large number of clients at one time, prepare the blood samples, and keep up with the data entry into the computer, the benefits outweigh the challenges. By the jail clients being scheduled on one designated day, all can be seen and kept on the same monthly schedule for nurse evaluation and medication pick up. An additional key benefit of this partnership is the provision of PPD antigen (at no cost) to the detention facility by the health district. Approximately 340 inmates have been seen over the past 20 months.

Follow-up is imperative to ensure completion of LTBI treatment, particularly in short-term correctional facilities. Furthermore, inmates of correctional facilities have been reported to have relatively high rates of HIV infection; persons who are coinfected with HIV and *M. tuberculosis* are at high risk for progressing from LTBI to TB disease. When an inmate receiving LTBI therapy does not complete the recommended 9-month treatment regimen prior to release from the detention facility, it becomes the responsibility of the Houston County Health Department to contact the former inmate and arrange treatment completion. If the former inmate does not respond to the health department's attempts to contact him, he is then referred to the TB Outreach Worker, Wayne Mencer whose responsibilities include, but are not limited to, in-depth follow-up by tracking the missing client, educating the client and his family, coordinating transportation to clinic appointments, and reporting back to the TB Program Manager.

With a sizeable percentage of inmates lacking any supplementary access to the health care system, correctional settings are becoming a crucial source of health information, intervention, and maintenance. Some of the benefits that are resulting from this partnership include prompt identification, evaluation, and treatment of inmates with LTBI; ensuring adherence to treatment via DOT; follow-up of released inmates regarding treatment completion; controlling TB among inmates and detention facility employees; reduced TB rates in community; and a decreased financial burden on the health district due to the proactive stance of newly formed partnership between public health and corrections. Since each case of TB disease begins as a contact, the team work between the Houston County Health Department and the Houston County Detention Facility in managing and treating TB in this target population equates to a win-win situation.

—Submitted by Faye Mencer, RN, BSN
Public Health Nurse Specialist
TB Program Manager
Houston County Health Department

Laboratories Offering QFT Testing

In January 2008, Kashef Ijaz, MD, MPH, chief of DTBE's Field Services and Evaluation Branch,

forwarded to TB controllers and others a link to a list of U.S. laboratories offering the QuantiFERON-Gold test (QFT-G). We are reprinting his communication in this issue for the information of readers. Dr. Ijaz noted that this list is updated frequently, thus, readers may want to go to the "Get-QFT" website often for the most up-to-date listing: www.quantiferon.com

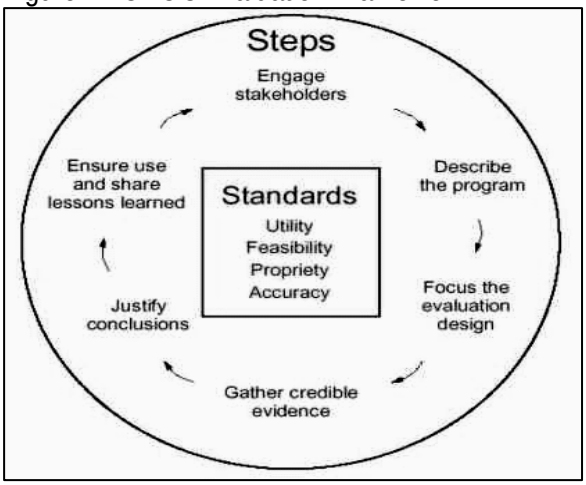
If you have any questions about QFT-G or labs that offer QFT-G, please contact Mark Boyle (tel: 800.519.4627 or 661.775.7480; e-mail: mboyle@cellestis.com).

Strategies for Targeted Testing and Treatment for Latent TB Infection: Applying ATS/CDC Guidelines to a Best Practice Evaluation

Background

DTBE funded 17 grantees in 2000 to conduct 5-year projects on targeted testing and treatment of LTBI (TTTLTBI). These 17 grantees fielded 84 interventions with varying target populations and activities. In 2003, CDC commissioned RTI International to conduct an evaluation of the CDC-funded TTTLTBI projects. The objectives of the evaluation were to (1) identify effective programmatic strategies, (2) promulgate lessons learned, and (3) enhance efforts to provide appropriate TTTLTBI .

Figure 1. CDC's Evaluation Framework



Source: CDC. Framework for Program Evaluation in Public Health. *MMWR* 1999;48 (No. RR-11).

Methods

DTBE and RTI invited six intervention programs to participate in the evaluation, which was conducted in accordance with the CDC Framework for Program Evaluation in Public Health (CDC 1999) (see Figure 1). Table 1 presents the six best practice evaluation sites, the target populations, and brief program descriptions.

The data collection comprised 1- or 2-day site visits, semi-structured interviews with program staff and partners, and follow-up telephone interviews with program staff. To explore how the recommendations were being put into practice, evaluation data were mapped to the 2000 ATS/CDC guidance.

Results

The evaluation data show that the intervention sites followed the ATS/CDC guidelines. This report highlights the strategies used by the sites to identify high-risk groups, access these groups for targeted testing, foster adherence to LTBI treatment, and establish the role of the health department in targeted testing and treatment.

Identifying High-Risk Groups

The ATS/CDC guidelines recommend that state and local public health agencies use local epidemiological data from TB case reports and testing data to detect trends and high-risk groups. The guidelines also recommend targeting groups that are identified as being at increased risk for TB. The evaluation data from intervention programs show that sites followed this recommendation, using data to define at-risk populations and to target high-risk groups. For example, for Mississippi, data showed a high prevalence of TB in Harrison County; the Mississippi program targeted Harrison County Correctional Facility jail inmates, many of whom were from TB endemic countries, were marginally housed, or had a history of injection drug use. Similarly, in Delaware, data indicated that the majority of active TB cases were among

Site Name	Target Population	Program Description
Sussex County Health Unit, DE	Foreign-born poultry plant workers	Management and staff of local poultry plants institute pre-employment TB testing for all employees
Harrison County Correctional Facility, MS	Jail inmates	County jail clinic staff provide TB tests and treatment for LTBI for all inmates and ensure treatment follow-up in the community
University of Missouri–Columbia Student Health Center, MO	Foreign-born students	University-based student health center, registrar, and athletic departments coordinate testing and treatment
Suffolk County Health Department, NY	Foreign-born migrant workers	ESL classes and a local diocese host a mobile TB clinic
Virginia Department of Health, VA	Children aged 4 years or younger from TB endemic countries and day-care workers	Pediatricians and day-care providers raise awareness of TB in this population
San Diego Department of Health, CA	Medically underserved	Community clinics serving the homeless and other hard-to-reach populations ensure continuity of care

Table 1. Description of Best Practice Evaluation Sites
Note: ESL=English as a second language; LTBI=latent tuberculosis infection.

foreign-born poultry plant workers, and the Delaware program targeted this population. In addition, Missouri and New York programs targeted foreign-born populations; the Virginia program targeted children of foreign-born parents; and the San Diego program targeted medically underserved populations, such as homeless shelter residents (Table 1). Further evidence of the effectiveness of the programs at targeting high-risk groups is the fact that three of the sites identified cases of TB through these testing efforts.

Accessing High-Risk Groups

To increase access to high-risk populations, the ATS/CDC guidelines recommend that intervention programs utilize nontraditional sites for targeted testing, rather than traditional sites such as the health department. All of the best practice programs conducted TTTLTBI in accordance with this recommendation. For example, the New York program collaborated with English as a Second Language (ESL) classes and local churches to reach high-risk populations for testing. This program also used a mobile chest radiography clinic to reduce barriers to testing (e.g., lack of transportation). In Delaware, the health department collaborated with local poultry plants to test and treat employees at their worksites.

Fostering Treatment Adherence

The ATS/CDC guidelines articulated several strategies for promoting adherence to treatment. The evaluation results indicated that programs successfully used several of these methods to increase treatment adherence:

- *Patient education.* Four programs explicitly noted the expansion of patient education efforts, to increase treatment adherence by improving treatment acceptance. For example, the Missouri program provided students with one-on-one counseling about

the TB treatment process, and educational materials about LTBI and directly observed therapy (DOT). The New York program translated patient education materials, such as CDs and brochures, into 12 languages and distributed them to foreign-born patients to inform them about TB, LTBI, and the benefits of treatment.

- *Reinforcement methods.* Incentives and enablers tailored to the particular needs of the population were widely used as positive reinforcement methods. For example, the Virginia, Delaware, New York, and San Diego programs gave patients incentives such as grocery store or McDonald's coupons or gift cards. The Missouri program provided students with gift cards to the university bookstore. In addition, the Virginia program gave children stickers to help with treatment adherence. The San Diego and New York programs provided bus tokens or taxi vouchers as enablers to improve access to care.

  Negative reinforcement was noted by two programs as specific strategies for promoting testing and treatment adherence. The Missouri program blocked students' registration if they did not get tested. In the Delaware program, pre-employment testing for LTBI was a condition of employment.

- *Directly observed preventive therapy.* Available information suggests that DOT leads to higher treatment completion rates (Gourevitch et al, 1998). The Delaware and Missouri programs used DOT to help patients adhere to treatment. In the Delaware program, the poultry plant nurses administered the medication to patients, tracked treatment progress and completion, and communicated the treatment progress and completion information to the local health department. In the Missouri program, student athletes received DOT from their athletic trainers; all other students were strongly encouraged to participate in DOT, although it was not required. However, all patients were required to meet with the nurse program manager monthly to track treatment progress.

Role of the Health Department in Targeted Testing and Treatment

The ATS/CDC guidelines stressed that health departments can and should play an instrumental role in planning and coordinating TTTLTBI programs, setting performance standards, and monitoring service quality. These successful programs led efforts to:

- *Establish linkages.* All of these programs developed partnerships with community organizations to leverage resources and help reach high-risk groups for testing and to facilitate treatment adherence. Examples of these partner organizations include local employers, pediatricians, day-care facilities, community clinics, and churches (see Table 1). These partnerships expanded the reach and resources to provide TTTLTBI programs.

- *Provide training*. Five of the programs specifically noted providing some type of training to their community partners. For example, in Delaware, the health department trained poultry plant nurses on placing and reading tuberculin skin tests. In Virginia, program staff provided TB information and referral guidelines to pediatricians during grand rounds at local hospitals.

- *Detect and manage barriers.* Two essential components of an effective TTTLTBI program are (1) finding possible barriers to testing and treatment, and (2) subsequently addressing those barriers. The programs found interpersonal connections vital to identifying both barriers as well as unique ways to address these barriers to testing and treatment. For example, in Virginia, through discussions with parents of patients, the nurse discovered that transportation was a

problem along with other work-related concerns. To address these, they offered later testing hours (after work), provided testing at schools and at work sites, and offered bus and taxi vouchers.

St. Vincent de Paul Church, one of the TTTLTBI sites in San Diego

Discussion

The evaluation of these six TTTLTBI programs confirms that the strategies articulated in the ATS/CDC guidelines are critical components of an effective targeted testing program. Each of these programs identified a priority population and cultivated community-based partnerships to provide testing and treatment services. While stakeholders in the program sites recognized positive patient-level outcomes, a major limitation to this project was the lack of baseline data specific to the populations being targeted. Further efforts are needed to quantify and measure specific changes to time for potential TB transmission (coughing symptoms to TB case diagnosis) and adherence to treatment for LTBI due to these targeted testing strategies.

DTBE and RTI thank the six intervention programs that participated in the evaluation. For more information about this project, please contact Maureen Wilce at muw9@cdc.gov or Judy Gibson at jsgibson@cdc.gov.

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—Submitted by Shelly Harris, MPH
and Amy Roussel, Ph.D.
RTI International
Trade name of Research Triangle Institute

UPDATES FROM THE TB EDUCATION AND TRAINING NETWORK

Member Highlights

TB ETN highlights its new steering committee members:

Beth Kingdon, MPH, is a TB Education Coordinator / Planner for the Minnesota Department of Health. She received her bachelor of science degree and her masters degree in public health from the University of Minnesota. Beth's job responsibilities include serving as Minnesota's TB Training Focal Point, and writing and implementing Minnesota's Human Resource Development Plan. Beth would like to see TB ETN increase its active membership over the next couple of years.

Genevieve Greeley, BS, CHES, is currently doing contract work in TB control and cultural competency. She received her bachelor's degree in community health education and is CHES certified. She has a strong background in administering patient and provider education in the areas of general TB information and in administering tuberculin skin tests. She

specializes in cultural competency and low literacy skills consultation, providing layout and design for health education materials, and other consultation as needed. She has recently opened her own business of importing jewelry and other crafts from around the world made by women who are not able to work or cannot get more traditional jobs. The goal of the business is to enable the women to support their families while building their business and self-esteem. In the next couple of years, she hopes to see TB ETN encourage more participation from its members, as well as bring more of the scientific side of TB to TB ETN so educators can be better able to understand and develop the needed education in their communities.

Genevieve currently lives in Salt Lake City, Utah. She has two children, aged 10 (Hope) and 8 (Max). They enjoy taking advantage of all the outdoor opportunities in their area. Genevieve has also traveled to South Africa to volunteer at a camp (Sizanani) for children affected by HIV/AIDS.

Melinda Diaz, M.Ed, BSN, RN, is an Infectious Disease Control Consultant for the Ohio Department of Health. She holds a masters degree in education, a bachelor of science degree (nursing), and a registered nurse degree. She is a nurse consultant/educator for the state of Ohio. She oversees the case management of all active TB cases in Ohio. She advises and renders technical assistance to 88 county health departments as needed. As point of contact for human resource development, she also provides one-on-one education as well as group trainings in conjunction with the TB program.

Melinda would like to see TB ETN continue to build membership and reach out to health care professionals new to TB prevention and control, to help these new members realize the complexity of TB care and management and know that support exists outside of their individual programs. "I hope we continue to provide excellent resources and opportunities to network and improve skills," Melinda stated. Melinda is also a member of the cultural competency subcommittee and has worked in TB prevention control at both the city and state level.

Xiomara E. Hardison, RN, is a PHN III/Nurse Consultant/Clinic Coordinator for the City of Chicago Department of Public Health (CDPH) TB Control Program. She received her BSN from the University of Illinois at Chicago and MSN from the Saint Xavier University in Chicago. Her job responsibilities include providing community outreach TB in-service training; providing TB consultation services to CDPH non-TB staff, external agencies, and other health care providers; providing and facilitating training and in-service training to TB staff; managing institutional (congregate settings) contact investigations; developing policies and procedures; and managing, supervising, and assisting in the clinical setting.

Xiomara was born in the Dominican Republic and moved to the U.S. when she was 5 years old. She was raised in Youngstown, Ohio, in Aurora, Illinois, and in Chicago. She also has a 21-year-old daughter, a college senior majoring in chemistry with a focus in biology, of whom Xiomara is very proud.

If you'd like to join Beth, Genevieve, Melinda, and Xiomara as a TB ETN member and take advantage of all TB ETN has to offer, please send an e-mail requesting a TB ETN registration form to tbetn@cdc.gov . You can also send a request by fax to (404) 639-8960 or by mail to TB Education and Training Network, CEBSB, Division of TB Elimination, CDC, 1600 Clifton Rd., N.E., MS E10, Atlanta, Georgia 30333.

Or, if you would like additional information about the TB Education and Training Network, visit http://www.cdc.gov/tb/TBETN/default.htm.

—Reported by Regina Bess
Div of TB Elimination

New Steering Committee Member

TB ETN is pleased to announce that Linette McElroy is the new international representative to the TB ETN Steering Committee for the 2008–2009 term. Linette is a Tuberculosis Educator/Practice Consultant in British Columbia, Canada. She has been active in TB ETN for many years and has served as a co-chair for the Membership Development Workgroup (back when it was called the Communications and Membership Subcommittee). Welcome, Linette!

Linette McElroy, RN
Tuberculosis Educator/Practice Consultant
British Columbia, Canada

Ask the Experts

This feature is brought to you by the TB ETN Membership Development Workgroup.

Question:
"Our staff members need more information on contact investigation interviewing skills. Many have worked here for a long time, but have not received any training in this. How can I get the buy-in from them to attend training at this point? Are there any resources to help plan an interesting class on interviewing?"

Answer:
Interviewing skills are vital to effective contact investigation and are learned over time. Since your staff members have been in the clinic for a long time, they will likely have experiences to share. Rather than offering a "training session," why not think about holding a case presentation event instead, and encourage each team member to contribute? This could then be followed by a summary presentation of the key points for a successful TB contact interview.

Focusing on real cases will help maintain interest and ensure that the session is relevant to the participants. The presentation at the end will allow a summary of the key points, with positive reinforcement of the work being done. If you find there's interest, but your staff seem uncomfortable with the idea of presenting a case, lead off by discussing a case you were personally involved with. You might also want to consider putting together a simple case-reporting template to help your staff prepare their case descriptions. That way, everyone will feel confident that they've assembled all the necessary information.

Key points regarding interviewing skills can be summarized and emphasized by the facilitator (you) after the staff members have given examples of effective and non-effective methods.

There are several excellent training guides available to help you. You might want to look at the following and see what works best for you and your staff.

1. *Effective TB Interviewing for Contact Investigations* materials

The Effective TB Interviewing for Contact Investigations materials include a facilitator-led training guide, self-study modules, and a video. The materials can be used together or on their own. Each material can be ordered separately on the DTBE online publication order form (http://www2.cdc.gov/nchstp_od/piweb/tborderform.asp). Materials can also be viewed and downloaded online at www.cdc.gov/tb/pubs/Interviewing/default.htm

Facilitator-Led Training Guide: The *Facilitator-Led Training Guide* is an interactive, skill-building guide designed to improve the knowledge and proficiency of TB staff responsible for conducting the TB interview. The guide is intended for

facilitators who will be conducting TB interviewing courses.

PDF:
www.cdc.gov/tb/pubs/Interviewing/facilitator/pdf/facilitatorguide.pdf

Video: www.cdc.gov/tb/pubs/videos.htm

2. Regional Training and Medical Consultation Centers' TB Training and Education Products: https://sntc.medicine.ufl.edu/rtmccproducts.aspx

Manuals in PDF Format

Performance Guidelines for Contact Investigation: The TB Interview	This manual provides a structured plan for the training, development and evaluation of healthcare workers involved in contact investigation.	2000	New Jersey Medical School Global Tuberculosis Institute
TB Interviewing for Contact Investigation: A Practical Resource for the Healthcare Worker	This resource includes an interview checklist and detailed TB interview outline booklet. The checklist identifies the five components of a TB interview: pre-interview activities, introduction, information/education exchange, contact identification and conclusion, detailed in the outline.	2000	New Jersey Medical School Global Tuberculosis Institute
TB Simulated Patients: A Training Resource for the Contact Investigation Interview	The manual describes the methods for utilizing patient scenarios for interviewing training and provides accompanying materials for the roles of the index patient, interviewer and supervisor/observer	2001	New Jersey Medical School Global Tuberculosis Institute
Tuberculosis Contact Investigation in Congregate Settings: A Resource for Evaluation	This resource is designed for use in the evaluation of contact investigations in congregate settings.	2004	New Jersey Medical School Global Tuberculosis Institute
Addressing HIV/AIDS Issues in TB Contact Investigation: A Guide for Contact Investigators, Managers and Trainers	This guide aims to strengthen the contact investigator's skills in engaging clients in discussion about HIV counseling, testing, and referral.	2004	Charles P. Felton National Tuberculosis Center at Harlem Hospital (Partner of the Northeastern RTMCC)

Web-Based Conferences

Tuberculosis Education and the Congregate Setting Contact Investigation: A	This web-based resource will assist public health workers as they plan and conduct an effective TB education session in the congregate setting.	2004	New Jersey Medical School Global Tuberculosis

Resource for the Public Health Worker			Institute
Working with TB Patients with Mental Health Issues	The web-based conference is for TB control staff who work in clinical or field settings. Patients' mental health issues can adversely impact TB treatment adherence and completion, as well as successful contact investigation.	2006	NJMS Global Tuberculosis Institute
The TB Congregate Setting Contact Investigation	This web-based course will cover the components of conducting a contact investigation in a congregate setting. It will include the latest Centers for Disease Control and Prevention and National TB Controllers Association guidelines.	2006	NJMS Global Tuberculosis Institute
TB Communication for Contact Investigations in Workplaces and Congregate Settings	This web-based conference for TB control staff covered effective TB communication as part of the investigation of a possible TB exposure in a workplace or congregate setting.	2006	NJMS Global Tuberculosis Institute
Basics of TB Interviewing for Contact Investigation	This web-based conference is for physicians and other providers who manage the evaluation and treatment of contacts to infectious TB cases.	2006	NJMS Global Tuberculosis Institute

Correction to Error in Previous "Ask the Experts" Column

Please note that there was an error in the previous "Ask the Experts" column. In TB Notes, No. 1, 2008, the "Ask the Experts" reply references a video, "TB Control in Prisons and Jails." This video was produced by and is available from the New York State Department of Health (NYS DOH) at the following address:

NYS DOH Bureau of Tuberculosis Control
Empire State Plaza - Corning Tower Room 840
Albany, NY 12237-0669
518-474-4845 or tbcontrol@health.state.ny.us.

The video is *not* available from the New York City Department of Health and Mental Hygiene phone number or website listed in TB Notes. We apologize for the error.

Do you have a question about TB education, training, and communication issues? In each edition of TB Notes, a TB education and training expert will answer questions about these issues and topics submitted by TB Notes readers. Just submit your question to tbetn@cdc.gov. Please keep your questions as brief as possible. Please note, we reserve the right to edit questions.

TB ETN Cultural Competency Workgroup Update

A new feature of each monthly TB ETN Cultural Competency Workgroup call is to highlight one of the many resources that are available, either on the Cultural Competency Resource list developed by the Workgroup or on a new resource that is relevant to the group. In November 2007, Beth Kingdon of Minnesota reviewed a website called Healthy Roads Media (www.healthyroadsmedia.org). This site contains information on many different health topics,

including seven materials on current topics related to TB that have been translated into Arabic, French, Korean, Russian, Somali, Spanish, Tagalog, and Vietnamese. The site is free and also has podcasts that can be downloaded for use on MP3 players.

On the December 2007 workgroup call, Margaret Rohter from Illinois described the Henry J. Kaiser Family Foundation website (www.kff.org). The Foundation's main website provides access to reports, fact sheets, surveys, and resources on minority health disparities and cultural competency. The site is geared towards policymakers, the media, and the general public. There are weekly reports on health disparities and the latest news, data, and information about HIV/AIDS, TB, and malaria worldwide. International maps with global health facts are available to download as well as rights-free video footage. There is a wealth of information and resources that could be useful for World TB Day activities. The Foundation also provides weekly updates via an electronic mailing list.

Eva Moya from the US-Mexico border area of Texas presented the TB Photovoice Project in January 2008. Photovoice is a process by which people can identify and improve TB-related problems in their communities through a specific photographic technique. It entrusts cameras into the hands of people to enable them to act as recorders and potential catalysts for social action and change in their own communities. The mission of the project is to increase awareness of the global burden of TB and advocate for its elimination. The project began in 2004 and since then has identified four communities around the world where persons affected by TB are assisting in disseminating information about TB. Eva has personally been involved in the US-Mexico border project. Other communities supporting Photovoice include South Carolina; Rio de Janeiro, Brazil; and the Thai-Vietnam border area. Photovoice uses the immediacy of the visual image and accompanying stories to promote an effective, participatory means of sharing expertise to raise awareness about TB. The website can be accessed at www.tbphotovoice.org

Cultural Competency Tip:
The road to cultural competency is long; here are some suggested ways to begin. Berlin and Fowkes suggest the LEARN model guidelines:

Listen with sympathy and understanding to the patient's perception of the problem.
Explain your perceptions of the problem and your strategy for treatment.
Acknowledge and discuss the differences and similarities between these perceptions.
Recommend treatment while remembering the patient's cultural parameters.
Negotiate agreement. It is important to understand the patient's explanatory model so that medical treatment fits in their cultural framework.

—Berlin EA, Fowkes WC. Teaching framework for cross-cultural care: Application in Family Practice. *West J Med*. 1983;139(6):934-938.

—Submitted by Margaret Rohter, MPH
Public Health Educator
TB Control
Cook County Department of Public Health

TB ETN Membership Is Global

Just as tuberculosis has no geographical borders, neither does the TB Education and Training Network (TB ETN). In a review of the TB ETN membership, the Membership Development workgroup discovered that its ranks have grown tremendously in the international sector. In the seventh year of the organization, there were 124 international members, of whom 95 were classified as Active Members. Thirty-one international members, or 25%, were registered for the Seventh Annual TB ETN Conference held in Atlanta, Georgia, last August. Each of the three workgroups (Membership Development, Cultural Competency, and Conference Planning) has members from several countries.

The 32 countries represented in TB ETN span the globe reaching every continent except Antarctica. Canada, the African countries, and India comprise the largest contingents. While job titles may be different in countries outside the U.S., the job duties remain consistent regardless of the country. Primary responsibilities include training medical, nursing, and outreach staff; developing and designing a curriculum; identifying training needs; preparing educational materials; carrying out community collaboration and education; and supporting and advocating for TB control programs and activities. Louanne Ohlhauser, a nurse consultant in Canada, says, "TB ETN has helped me in my job by keeping me informed of new resources and linking me with experts in TB education."

What an opportunity for the TB ETN membership to network and collaborate with other TB professionals around the world! Through the workgroups, the annual conference, and e-mail, members can exchange ideas, information, and experiences while building education and training skills. As Eka Kldiashvili, Ph.D., Executive Director, Georgian Telemedicine Union in Eastern Europe says, "Through TB ETN, I always receive updated information, which is very helpful…especially for continuous medical education."

Franklin Nwaoha in Nigera states, "By hearing the views of others, it has helped sharpen my leadership and ethnical skills." The TB ETN membership is richer due to having various countries represented and involved in the workgroups and conferences.

If you would like to join TB ETN, please send an e-mail to tbetn@cdc.gov.

—Submitted by Ann Poole, RN, and Sherri Smith
Co-chairs
TB ETN Membership Development Workgroup

Training and Education Resources for BCG Vaccine

TB educators frequently receive questions regarding bacille Calmette-Guerin (BCG) vaccine and its effectiveness. TB educators also need the background information on BCG when teaching health care workers about TB skin testing or other issues related to TB. This article provides a brief overview of BCG and includes a list of helpful websites and resources.

BCG is a vaccine against TB disease. BCG is used in many countries with a high prevalence of TB to prevent childhood tuberculous meningitis and miliary disease. However, BCG is not generally recommended for use in the United States because of the low risk of infection with *Mycobacterium tuberculosis*, the variable effectiveness of the vaccine against adult pulmonary TB, and the vaccine's potential interference with tuberculin skin test reactivity. The BCG vaccine should be considered only for very select persons who meet specific criteria, and in consultation with a TB expert.

Resources

The Role of BCG Vaccine in the Prevention and Control of Tuberculosis in the United States. MMWR April 26, 1996. This guideline is old, but still relevant.

Additional websites that might be helpful include:
CDC. BCG Vaccine (Fact Sheet)
www.cdc.gov/tb/pubs/tbfactsheets/BCG.htm

MedLine Plus. Bacillus Calmette-Guerin (BCG) Vaccine
www.nlm.nih.gov/medlineplus/druginfo/medmaster/a682809.html

Healthy Roads. Just the Facts About BCG & TB (written format)
www.healthyroadsmedia.org/english/Files/pdf/EngTBBCG.pdf

Healthy Roads. Just the Facts About BCG & TB (multimedia format)
www.healthyroadsmedia.org/english/Files/flv/engtbbcg.htm

For other resources that have information regarding BCG, check the TB Education and Training Resources (Find TB Resources)
http://www.findtbresources.org

—Reported by Millie Blackstone, RN, MPH
TB Nurse Coordinator
Arizona Department of Health Services

COMMUNICATIONS, EDUCATION, AND BEHAVIORAL STUDIES BRANCH UPDATE

Teachback Methodology: An award-winning curriculum for training trainers

Background
Owing to increasing global demand for training assistance in critical health disciplines such as TB and HIV, trainers at CDC recognized the value of building training capacity for health programs requesting assistance. In order to effectively help build training capacity, there was a need for developing and providing both

- A systematic method for planning and conducting trainings and
- Training-of-trainers (TOT) courses

To meet these needs, the CDC Global AIDS Program Training Team and DTBE's Communications, Education, and Behavioral Studies Branch, in partnership with the International Training and Education Center on HIV (I-TECH), developed the CDC Teachback Training Curriculum. (I-TECH is a global AIDS training program working at the invitation of ministries of health and the U.S. government.) CDC has used this curriculum to develop and implement TOT courses around the world. The Teachback Training Curriculum can be used in two ways:

- As a stand-alone curriculum to train others on how to develop and facilitate trainings, or
- Integrated into any existing curriculum (e.g., TB Contact Investigations) to develop a TOT course

Teachback Methodology Description
The CDC Teachback Training Curriculum is based on the Teachback Methodology, developed in 1975 by Dr. Gordon Pask. The Teachback Methodology was first used at CDC by trainers in the Division of HIV/AIDS Prevention and the Global AIDS Program to teach HIV counseling and testing TOT courses.

The rationale for using this methodology is its unique approach that blends the learning of training skills with the teaching of course content. Many people who facilitate trainings do so because they have expertise in a particular content or technical area. However, they often do not have formal education in training. The goal of the Teachback TOT courses is to enhance the participants' training skills so that they are better prepared to train others.

The Teachback Methodology provides participants with an exciting opportunity to improve their existing training skills. This methodology is based on the technique considered the most effective for training adults, which is participatory training. The curriculum was designed to provide

- Sustainable skills that will build the training capacity of course participants,
- An easy method for adapting an existing course into a TOT, and
- Materials that are flexible and easy to use.

The distinctive features of the methodology are that course participants gain skills in training adults, practice teaching a particular course

content, and receive feedback on their performance. There are three steps to the process:

1. A trainer teaches a set of training skills to the participant
2. The participants use the training skills to teach a portion of the course curriculum (this is when they "teach back" the skills and course content to the other participants)
3. The participant receives feedback on his or her performance from a master trainer and other participants (feedback is presented orally, in front of other participants and in writing using feedback forms)

For participants, Teachback can be empowering because they can integrate training theory with the teaching of course content, practice training in a safe environment, and receive feedback on their performance of training skills. For trainers, Teachback can be very gratifying because they can directly observe the participants' performance and see immediately how participants apply the knowledge and skills that they have learned.

Objectives of a Teachback TOT

The Teachback TOTs are skills-based trainings. After attending a Teachback TOT, participants demonstrate the knowledge and skill they have gained by

- Applying training basics when they facilitate a training (e.g., knowing your audience, being prepared, using adult learning principles, managing the training, communicating effectively, and engaging the participants)
- Facilitating any of the following (this depends on which skills are needed to teach a particular course):
  - Interactive lecture
  - Exercise and group discussions
  - Role play
  - Lab skills
  - Computer skills
- Conducting a Teachback TOT course (if appropriate)

Curriculum Description

Because each training course is unique, the materials were designed to be used with a wide variety of courses to create a training-of-trainers course. Trainers can use any sections of the curriculum that are appropriate for their setting. Materials include-

- A 35-minute video that explains the Teachback Methodology and how it can be adapted for existing courses. It also provides a demonstration of the feedback.
- PowerPoint slides
- Facilitator guides that provide detailed suggestions on how to train others in each of the topics
- Handouts that provide detailed content
- Exercise materials
- Forms that provide a systematic method for providing feedback
- Job aids for assistance during the training

Translations

To date, many of the materials have been translated into the following languages:

- Russian
- Latvian
- Vietnamese
- Spanish
- Georgian

During the MDR TB Teachback Training-of-Trainers in Latvia, a course participant teaches how to fit test a particulate respirator.

Awards
The CDC Teachback Methodology Curriculum received the CDC/Public Health Education and Health Promotion Network Award of Excellence for Public Health Training in 2007. In addition, the Train-Up with Teachback Video received the CDC/ATSDR Communicators Roundtable Award in 2005.

Teachback Methodology Trainings
Since 2003,
- 757 total participants from 28 different courses and over 50 countries have participated in a Teachback TOT, and
- 139 total trainers (CDC and external partners) have been trained to conduct Teachback TOT courses.

Following are some selected CDC-sponsored courses that have used Teachback Methodology to train trainers:

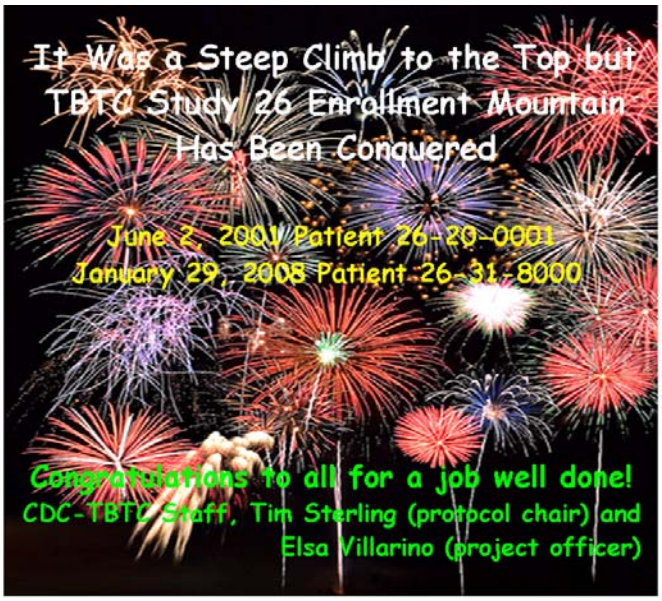
- Managing TB at the Raion Level (Russia)
- MDR TB (Latvia)
- TB/HIV Surveillance (Botswana and South Africa)
- TB/HIV Diagnostic Testing and Counseling (Tanzania & Kenya)
- Contact Investigation Course, with Francis J. Curry Center (Los Angeles)
- TB/HIV Collaborative Activities (Uganda)
- TB Operational Research (Argentina)
- HIV Rapid Test, CD4, Hematology, and Chemistry (Africa)
- Epi-Info (Vietnam)

For more information
If you are interested in learning more about the Teachback Methodology and how to integrate it into an existing curriculum to create a training-of-trainers course, please contact: Cheryl Tryon, MS, ctryon@cdc.gov, (404) 639-5320, Amera Khan, MPH, arkhan@cdc.gov, (404) 639-6428, or Peri Hopkins, MPH, phopkins@cdc.gov.

—Reported by Cheryl Tryon and Amera Khan
Div of TB Elimination

CLINICAL AND HEALTH SYSTEMS RESEARCH BRANCH UPDATES

Study 26 Reaches Enrollment Goal



Study 26 has reached its patient enrollment goal. As of 2:32 pm on January 29, 2008, the TB Trials Consortium (TBTC) was very happy to report that 8000 patients were enrolled in USPHS/TBTC Study 26. TBTC wishes to thank the volunteer patients, community members, health professionals, and scientists involved in conducting and supporting this study.

—Reported by Elsa Villarino, MD
Div of TB Elimination

TB Diagnosis at Death Among HIV-Infected Persons: US Metropolitan Statistical Areas, 1998–2003

TB remains a potentially deadly disease for those living with HIV infection. Deaths can occur during TB treatment, or prior to TB disease diagnosis, which is referred to as “TB diagnosis at death.” HIV increases the risk of death during TB treatment, especially for those having multidrug-resistant (MDR) TB. National TB Surveillance System data for 1997–1999 show that 40% of HIV-infected persons with MDR TB died during

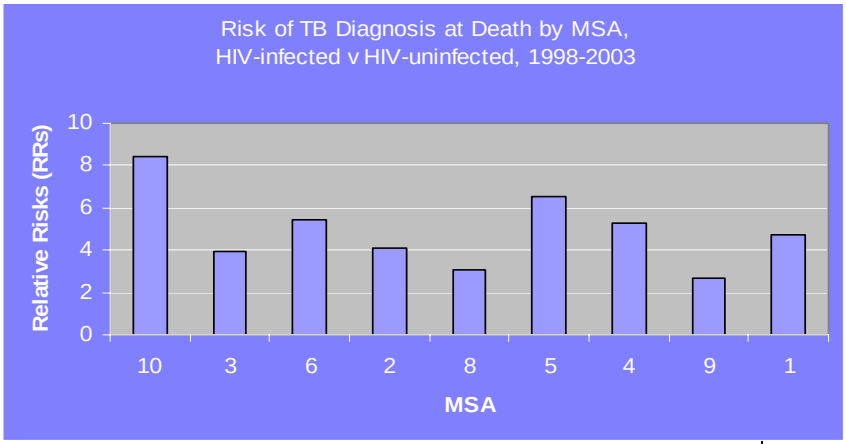
treatment, compared with 8% of HIV-uninfected persons with MDR TB (Moore M, unpublished data, January 2003). Analysis of National TB Surveillance System data excluding California from 1997 to 2005, adjusted for MDR TB, age, residency in a longterm care facility, US birth, race/ethnicity, sex, substance abuse, and other disease characteristics indicates that HIV-infected persons' odds of death during TB treatment was five times higher than that of HIV-uninfected persons (Marks SM and Magee E, unpublished data, March 2008). The same study also revealed that HIV-infected patients had a five times greater odds of being diagnosed at death, adjusted for age, US birth, sex, race/ethnicity, and other disease characteristics. The current study examines trends in TB diagnosis at death among HIV-infected persons in the 10 most HIV-prevalent US metropolitan statistical areas (MSAs) during 1998–2003. Diagnosis of TB at death may reflect lack of ready access to TB or HIV prevention, diagnosis, and treatment services. Identifying groups or areas with high rates of TB diagnosis at death in HIV-infected persons may help pinpoint disparities in access to HIV care, access and provision of TB care, or both.

To identify those diagnosed at death, we used 1998–2003 data on "status at diagnosis of TB" from the National TB Surveillance System for 20 MSAs having the highest reported TB/HIV co-morbidity in numbers of patients. We report results individually, but anonymously, for the top 10 MSAs having the highest TB/HIV co-morbidity. HIV status was classified into positive (from a documented test, previous HIV/AIDS diagnosis, or self report), negative (from a documented test within the past year), or unknown (indeterminate results, refused testing, not offered testing, results unknown, unknown). We first compared the risk of being diagnosed with TB at death for HIV-infected versus HIV-uninfected patients (excluding those from the three California sites since the state of California only provides CDC access to AIDS case registry and TB registry matching results; data are limited to reported AIDS cases, and exclude HIV negativity or unknown status). Then, we examined those groups of TB patients having unknown HIV status, comparing those diagnosed at death with those diagnosed while alive. For known HIV-infected TB patients, we then identified factors associated with TB diagnosis at death by using multivariate log-binomial analysis to obtain adjusted prevalence ratios.

In rank order from highest to lowest prevalence, the top 10 TB/HIV-prevalent MSAs were New York City, Miami, Los Angeles, Houston, Chicago, Atlanta, Ft. Lauderdale, Newark, Dallas, and Washington, DC. In these 10 MSAs, TB/HIV patients comprised 14% of all TB patients, or 25% of those with known HIV status (range: 7%–32% of all patients or 17%–37% of patients with known HIV status). HIV-infected TB patients in the top 10 MSAs had the following demographics: male (72%), non-Hispanic black (58%), foreign born (36%), Hispanic (25%), missing race/ethnicity (8%), non-Hispanic white (7%), Asian/Pacific Islander (2%), age 65 or over (2%), and American Indian/Alaska Native (0.1%).

Regardless of HIV status, 2.0% of all patients in the top 10 MSAs were diagnosed with TB at death (range: 1.0%–3.4%). The percentage of HIV-infected TB patients who were diagnosed at death varied from year to year by MSA, but appeared to decline over time. The median and average TB diagnoses at death per year for HIV-infected patients in the top 10 MSAs was 3.2%, but averaged 6.6% in MSA 10; 5.6% in MSA 3; and 4.4% in MSA 6.

HIV-infected patients had on average 4.9 times (95% confidence interval [CI]: 3.8-6.2) greater risk than HIV-uninfected patients to have been diagnosed at death (vs. while alive) during 1998–2003. This significantly greater unadjusted risk of TB diagnosis at death for HIV-infected patients was true at all but one of the MSAs (RR range 2.7–8.4) (Figure).



All RRs significant at the 95% confidence interval, except for MSA 1

Those diagnosed at death were 1.75 times (95% CI: 1.64-1.86) more likely to be missing HIV status information. This association held true for seven of the nine highest non-California TB/HIV-prevalent MSAs, with RRs ranging from 1.6 to 11.5. We found that Asians (RR=1.6, 1.5–1.6), non-Hispanic whites (RR=1.4, 1.3–1.4), and foreign-born persons (RR=1.1, 1.05–1.12) were significantly more likely, and non-Hispanic blacks (RR=0.6, 0.6–0.7), males (RR=0.8, 0.78–0.83), and Hispanics (RR=0.9, 0.86–0.92) less likely to have unknown HIV status.

From multivariate analysis, we found (as expected) that HIV-infected TB patients aged 65 or over had 3.7 times greater risk of diagnosis with TB at death than younger HIV-infected patients. HIV-infected Hispanics had half the risk as non-Hispanics and HIV-infected foreign-born patients had nearly half the risk as US-born patients to be diagnosed at death. In three MSAs, there was a 2.1-2.7 times greater risk of being diagnosed at death than in the remaining MSAs. In one MSA, there was a 70% lower risk of diagnosis at death than in the other MSAs. MDR TB was not significantly associated with being diagnosed at death, nor was TB disease that was strictly extrapulmonary.

The following limitations apply to this study. Deaths during TB treatment or TB diagnoses at death may not be deaths caused by TB, which requires verification through autopsies (which have declined from 41% of hospital deaths in 1961 to 5%–10% in the mid-1990s in the United States)[1], from specimens obtained just prior to death, or from lab results received after death. In Italy, an autopsy study of 350 AIDS patients found 20 (6%) with TB were undiagnosed while alive.[2] In the absence of US autopsy studies, one US study found that 22% of a 1997 TB/HIV cohort died, and 44% of the deaths were from TB; the study used sputum smears at death to diagnose pulmonary TB and tissue cultures for extrapulmonary TB.[3] Some sociodemographic factors of known HIV-infected patients could not be examined because some data were missing for those diagnosed with TB at death: data on injecting and noninjecting drug use for 28%-29%, and data on alcohol abuse for 29% (compared with 5%-6% missing data for those factors of those diagnosed while alive). Similarly, we found that homelessness data were missing for 9% of those dead at diagnosis (vs. 3% of those alive), residence in a long-term care facility data for 2% (vs. 0.2% of those alive), and residence in a correctional facility data for 1% (vs. 0.2% of those alive).

While TB mortality in HIV-infected persons has declined over time because of reductions in US TB incidence and prevalence, implementation of highly active antiretroviral therapy (HAART),[4,5] and improvements in TB and HIV case management,[6] HIV-infected TB patients had nearly five times the unadjusted risk of being diagnosed with TB at death as HIV-uninfected persons in the highest TB/HIV-prevalent MSAs for 1998–2003. Among HIV-infected persons, TB patients aged ≥ 65 years had three times the risk of younger patients, and those residing in three high TB/HIV-prevalent areas had risks of diagnosis at death two to three times higher than those in other areas.

TB diagnosis at death reflects both the risk of death with undiagnosed TB and the risk of a

diagnosis of TB after death. HIV-infected patients aged 65 or older might have a greater risk of death with undiagnosed TB because of missed diagnoses due to age-related immunosuppression,[7] which reduces the sensitivity of the tuberculin skin test (TST) and results in atypical clinical and radiographic presentation. On the other hand, HIV-infected Hispanics were half as likely to be diagnosed with TB at death as other race/ethnic groups, and foreign-born patients 40% as likely. To possibly explain this, first we note that diagnosis of TB after death generally requires either a specimen taken for examination just prior to death or an autopsy (half of which are performed when patients die in or upon arrival at a hospital).[8] Second, uninsured TB patients stay fewer days in a hospital[9] and are less likely than those insured to have usual diagnostic services and access to care. Thus, it is possible that Hispanics, who are less likely to have insurance than other groups,[10] were not hospitalized or examined prior to death or autopsied after death. Alternatively, it is possible that Hispanics are more likely to be diagnosed with TB while alive because of frequent screening efforts taking place in Hispanic or foreign-born communities because of immigration requirements. We might expect both of the above-mentioned possibilities to be occurring.

Additional data collection is needed for those diagnosed with TB at death. The extent to which autopsies include HIV testing is unknown. Post-mortem medical record reviews may help achieve completion of data collection on alcohol abuse, injecting drug use, or noninjecting drug use. Efforts are needed to obtain missing information on homelessness, residence in a long-term–care facility, or residence in a correctional facility for known HIV-infected TB patients diagnosed at death.

Since a diagnosis of TB at death is a late diagnosis, it should be considered a sentinel event for evaluation of missed prevention opportunities. Alternatively, favorable practices should be identified at locations where there are lesser risks of diagnoses at death. Among TB patients, routine voluntary HIV testing (including opt-out testing in clinical settings) and referral to HIV care are needed, along with routine screening of known HIV-infected persons for symptoms of TB disease, testing for latent TB infection (LTBI), and LTBI treatment completion to prevent deaths in HIV-infected persons at risk for TB. It may also be helpful to track the effect of HAART on reductions in TB diagnosed at death among HIV-infected persons.

—Reported by Suzanne M. Marks, MPH, MA; Todd Wilson, MS; and Valerie Robison, DDS, PhD

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New Publications Available Soon!

Look for a new series expected to be released over the next few months, entitled *Promoting Cultural Sensitivity: A Practical Guide for Tuberculosis Programs Providing Services to Foreign-born Persons*. The series comprises five modules, each focused on a distinct cultural group: Chinese, Hmong, Mexican, Somali, and Vietnamese. Each guide contains chapters on the selected group's history and immigration; culture; health issues; and common perceptions, attitudes, and beliefs about TB. A product of DTBE's 2003 ethnographic study of foreign-born persons in the United States, the series aims to help TB program staff provide culturally competent TB care to some of our highest priority foreign-born populations.

Intended Audience
Intended for health care providers, community-based workers, program planners, health educators, administrators, and resettlement agencies that work with the five selected foreign-born populations, the guides are designed to increase the knowledge and cultural sensitivity of providers serving these populations. The ultimate aim is to foster culturally competent TB care and services for foreign-born populations in the U.S.

About the Guides
Each guide in the series includes the following:

- A 2-page summary of program tips
- Chapters on history and immigration; culture; health issues; and common perceptions, attitudes, and beliefs about TB
- A concluding summary
- Appendices, including additional resources for working with TB patients and interpreters and a glossary of terms
- Useful resources
- References

Some of the information in the guides, such as the practical tips, can be applied directly, while other sections are more informative and will help providers better understand the background and sociocultural context of the population. A deeper understanding of pertinent issues will heighten the cultural sensitivity of TB care providers, enhance communication, and improve the overall effectiveness of organizations and staff in cross-cultural settings.

The content of these guides was gathered in two ways. First, an in-depth review of TB-related epidemiologic, behavioral, and ethnographic literature on the cultural group was performed. Secondly, in 2003, DTBE undertook a qualitative study to describe ethnographic aspects of the increasing burden of TB among five foreign-born populations. Selected major findings from the study are presented in each of the guides.

The Hmong guide will be released first, followed by the Somali guide. All guides are expected to be in print by spring or early summer. Limited hard copies and CD-ROMS will be available. PDF versions will be accessible on the DTBE website, starting with the Hmong guide: www.cdc.gov/tb/EthnographicGuides/Hmong/chapters/HmongTBBooklet508_final.pdf

—Reported by Robin Shrestha-Kuwahara, MPH
Div of TB Elimination

MYCOBACTERIOLOGY LABORATORY BRANCH UPDATE

Expert Panel Meets to Discuss Drug Susceptibility Testing

A meeting hosted by CDC and the Association of Public Health Laboratories (APHL) was held December 12–13, 2007, in Atlanta to address issues regarding drug susceptibility testing of *M. tuberculosis* clinical isolates. The expert panel consisted of representatives from several different organizations and health entities including public health, clinical, and commercial laboratories, clinicians, the American Society for Microbiology, the Clinical and Laboratory Standards Institute (CLSI), the World Health Organization (WHO), APHL, and CDC.

During the 2-day meeting, panel members discussed recommendations for updating CLSI M24-A (Susceptibility Testing of Mycobacteria, Nocardiae, and Other Aerobic Actinomycetes; Approved Standard) that included first- and second-line drug panels and testing algorithms. Further discussions focused on the potential establishment of regional centers of excellence to provide access to accurate and reliable second-line drug testing, recommendations for ensuring proficiency of public health laboratories, guidance on referral strategies to ensure rapid testing and reporting, and the issue of discordant results between laboratories. The panel compiled an inventory of critical research needs aimed at improving current laboratory practices important for the detection and control of multidrug-resistant (MDR) and extensively drug-resistant (XDR) TB. Specific, detailed recommendations from the meeting will be forthcoming.

—Reported by Angela Starks, PhD
Div of TB Elimination

SURVEILLANCE, EPIDEMIOLOGY, AND OUTBREAK INVESTIGATIONS BRANCH UPDATES

SEOIB Welcomes Three Graduate Students

Three graduate students who are pursuing masters degrees from Emory University's Rollins School of Public Health have joined the Surveillance, Epidemiology, and Outbreak Investigations Branch (SEOIB) to assist the teams with a variety of projects.

Shannon Horn is a second-year student in the Epidemiology department. In the past year and a half she has worked with the Surveillance Team to edit the annual TB Surveillance Report, maintain the National Tuberculosis Surveillance System, and recruit participants for the 2007 TB Awareness Walk. Shannon was drawn to Emory specifically because of the opportunity to work with CDC and develop analytic thinking skills through public health practice. Working with DTBE has been an incredible learning experience and has sparked her interest in surveillance activities and outbreak investigation. She is currently applying to fellowship programs and plans to take the skills she has learned in DTBE to her next endeavor.

Jamie Myers is a second-year student in the Behavioral Science and Health Education Department. She has assisted the Outbreak Investigations Team with various projects including editing and compiling training booklets for the International Union Against Tuberculosis and Lung Disease (IUATLD) conference in South Africa, creating a database to assist the organization of the spring 2007 EIS conference, and designing and implementing an employee satisfaction survey for the branch. When Jaime began working at CDC, her hope was to gain more insight into public health at the governmental level. What she loves about

working at DTBE is the level of activity, from nationally highlighted outbreaks to research fundamentals in the office and in the field. Working in this division has strengthened her desire to become a researcher herself, and her immediate plans include pursuing a PhD in Public Health.

Laura McAllister is a first-year student in the Epidemiology department who has been working with the Surveillance team since September 2007. She updated the database of severe adverse events related to treatment of TB infection, proofread data in various SEOIB reports including DTBE's annual report to the World Health Organization, updated the state TB surveillance coordinator list, and encouraged community participation in the 2008 TB Awareness Walk. Laura thoroughly enjoys her job at CDC and seeks to get as much as possible out of the experience. This job has sparked her interest in how surveillance can help prevent and control disease. She is also very interested in the epidemiology of TB, specifically among minority populations. Her career goals include working for a public health–related nonprofit organization.

The SEOIB teams have enjoyed working with these dedicated students and appreciate all of their assistance.

—Submitted by Laura McAllister, Shannon Horn, Jamie Myers, and Lauren Lambert
Div of TB Elimination

12th Semiannual Meeting of the Tuberculosis Epidemiologic Studies Consortium

The 12th Semiannual Meeting of the Tuberculosis Epidemiologic Studies Consortium (TBESC) convened on January 16–17, 2008, in Atlanta, Georgia. The primary purpose of the TBESC is to conduct epidemiologic, behavioral, economic, laboratory, and operational research in tuberculosis prevention and control.

Over 70 persons participated in the meeting. Attendees included TBESC principal investigators, project coordinators, project-specific personnel, and CDC staff. TBESC members and CDC staff presented results and updates on the status of TBESC research projects and activities.

Many discussions were held around the recommendations of an external peer review committee, which was held on September 18, 2007, in Atlanta. The panel submitted recommendations and TBESC members discussed ways to improve consortium processes, focus on specific research topics for consortium-wide studies, and quickly disseminate study findings. They also discussed the future direction of the TBESC.

Presentations from CDC, TBESC members, and invited guests included the following:

- Preliminary results from TBESC Task order (TO) #2: Prospective evaluation of immunogenetic and immunologic markers for susceptibility to *M. tuberculosis* infection and progression from *M. tuberculosis* infection to TB disease
- Preliminary results from TBESC TO #12: Assessing the TB knowledge, attitudes, beliefs, and practices among private providers serving foreign-born populations at risk for TB
- Update on TB in the foreign-born
- Ideas for new consortium-wide research
- Administrative updates on consortium-related activities
- Update on the Semiannual Tuberculosis Advisory Review (STAR) process
- Updates from the Publication and Presentations and External Relations Committees
- Update from the Translating Research into Practice (TRiP) Workgroup
- CDC and TBESC responses to the external peer review

For more information on the TBESC, please visit http://www.cdc.gov/tb/TBESC/default.htm.

—Reported by Indhira Gnanasekaran, MPA
TBESC Project Manager
Div of TB Elimination

NEW CDC PUBLICATIONS

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PERSONNEL NOTES

Suzanne Beavers, MD, will be the new staff epidemiologist for the Tuberculosis Epidemiologic Studies Consortium in the Surveillance, Epidemiology, and Outbreak Investigations Branch (SEOIB), starting July 1, 2008. She was born in Athens, Georgia, but spent most of her childhood in Punta Gorda, Florida. She graduated with high honors from the University of Florida with a degree in political science, and also obtained her MD degree from the University of Florida. She subsequently attended the Medical Center of Delaware for her internship and residency in emergency medicine. After practicing emergency medicine for several years, Suzanne became interested in a career in

public health and epidemiology. She applied to the Epidemic Intelligence Service, was accepted into the Class of 2006, and served as Kentucky's EIS Officer from 2006 to 2008. As Kentucky's EIS Officer, she completed projects in infectious disease epidemiology as well as injury and maternal and child epidemiology. She looks forward to the opportunity to focus on tuberculosis epidemiology.

Deborah Bedell has accepted the Public Health Advisor (PHA) position in Tallahassee, Florida. She is returning to CDC after several years with the Alabama Sexually Transmitted Disease (STD) program. Deborah received a bachelor's degree in Human Services from Southern Illinois University 1979. She began her career as a case manager with the Alabama STD program, where she worked from 1982 to 1989. In 1989, she became a federal employee, joining CDC as a PHA in the STD program. She subsequently worked as a supervisor in Alabama; Baltimore, Maryland; Fulton County, Georgia; and Memphis, Tennessee. While in these assignments, she held various positions including outreach activities coordinator, front line supervisor, and manager. In 2003, Deborah left CDC and returned to the Alabama STD program. She earned a masters degree in Health Care Management from the University of Phoenix, Columbus, Georgia, in May 2006. FSEB welcomes Deborah back to the CDC fold as she begins this new phase in her public health career. She began her new job on May 27, 2008.

Sean Cavanaugh, MD, joins DTBE in the International Research and Programs Branch as a new EIS officer. He grew up in Washington, DC, and attended Duke University in North Carolina, where he majored in psychology and English. After graduation, he returned to Washington, DC, and worked as a case manager for a few years before moving to New York City to attend medical school at Albert Einstein College of Medicine. He graduated in 1997 and went on to New York University and Bellevue Hospital for his internal medicine residency and finished in 2000. He stayed on as Chief Resident for a year and then took a position with the Manhattan VA and as an associate program director at NYU. He has been working as a clinician educator since that time and has referred legions of former medical residents to the EIS over the years before taking his own sterling advice.

Kim Do, a Public Health Advisor with the Field Services and Evaluation Branch, has accepted a transfer to Las Vegas, Nevada. Kim received a bachelor of science degree from the University of Colorado at Boulder in 1988. In 1989 he began his CDC career as a Public Health Associate in the STD program in West Palm Beach, Florida, and then served as a Public Health Advisor in Washington, D.C. From 1992 to 2000 he was assigned to the Los Angeles STD program, where he worked as a supervisor for local and federal staff. In 2000 he transferred to the Los Angeles TB Control Program, where his duties consisted of supervising three local staff members. Additionally, he managed the Targeted Testing for Latent TB Infection Project from 2002 through 2004 and also managed the Class A/B Notification for New Immigrants Project and the Incentive and Enablers Project. Kim also served as back-up coordinator for the Detention Unit and as Health and Safety Coordinator for the TB Control Program.

During his 18 years at CDC, he has participated in numerous international and domestic outbreak investigations and temporary duty (TDY) assignments. In April 2006 he helped with an outbreak investigation in Indiana, assisting with TB contact investigations, placing tuberculin skin tests for contacts, and providing directly observed therapy. In December 2005 he helped the East Baton Rouge Health Department, Louisiana, after hurricanes Katrina and Rita. He served a TDY assignment in Fresno, California, in March 2005, working with the Hmong refugees who had recently immigrated to the United States from the Watt-Ka-Bat refuge camp in Thailand; he interviewed TB index cases, completed data collection forms, and identified locations in Fresno and in the refugee camps as possible sources of TB cases or contacts. In April 2004, he helped with the interviewing of TB index cases in the local Vietnamese community in Mobile, Alabama, assisting in the creation of the knowledge, attitudes, and beliefs (KAB) survey; conducting the survey for both English and non-English speakers; and conducting education for TB in the Vietnamese language for Vietnamese persons who lived in the "fishing village." Kim completed data collection forms and identified numerous places as possible sources of TB cases or contacts. In April 2003, Kim participated in SARS screening at Los Angeles International Airport with the Global Migration and Quarantine staff. He was a

member of the team that created the SARS manual and assisted Quarantine staff in providing training to airport employees. He has had a number of other assignments as well. His transfer to Las Vegas was effective May 11.

Denise Garrett, MD, MS, joined the Epidemiology Team in the Surveillance, Epidemiology, and Outbreak Investigations Branch (SEOIB) in August 2007. Denise was born in Brazil, where she received her medical degree in 1986, and a masters degree in science in 1991. She joined CDC in 1993 as a visiting fellow in the Division of Parasitic Diseases (DPD). In 1996, Denise was accepted into the Epidemic Intelligence Service (EIS) and served as an EIS Officer for the Division of Healthcare and Quality Promotion. During EIS Denise worked closely with DTBE in conducting TB analytic investigations (nationally and internationally) and developing TB infection control guidelines for hospitals. For the past 7 years Denise and her 8-year-old son, Lucas, lived in Brazil where she served as a CDC consultant for the Field Epidemiology Training Program (FETP) during 2000–2002, and as a Medical Epidemiologist providing advice to the National TB Program/Brazilian Ministry of Health during 2002–July, 2007. Besides her extensive experience with TB and public health, Denise has mastered the ability to prepare Caipirinha, the most popular Brazilian cocktail. Dr. Garrett has done an excellent job since she joined SEOIB, and we welcome her to DTBE.

Andrew N. Hill, PhD, has joined the Data Management and Statistics Branch. Andrew, who was born and raised in New Zealand, completed his undergraduate and graduate education in mathematics, statistics, and physics at the University of Auckland, NZ, and at the University of Michigan. He received his doctorate in mathematics from the University of Canterbury, NZ; his dissertation was on symmetry structures of nonlinear differential equations. After teaching at the university level in NZ, Andrew emigrated to the US and in 1999 was awarded a National Institutes of Health (NIH) postdoctoral fellowship in biostatistics at Emory, focusing on epidemic models. Following his fellowship, he taught classes and conducted and published research in the Emory biostatistics department (A.N. Hill and I.M. Longini, Jr. The critical vaccination fraction for heterogeneous epidemic models. *Mathematical Biosciences* 2003; 181: 85-106). In 2007, Andrew came to CDC, where he first worked in the Vaccine Analytic Unit of the Meningitis and Vaccine Preventable Disease Branch, Division of Bacterial Diseases, NCIRD. His work there involved analyzing the US military electronic database (Defense Medical Surveillance System) for vaccine-related adverse events. In March 2008, he came to DTBE. Welcome, Andrew!

Christine Ho, MD, MPH, has joined DTBE as a field medical officer at the San Francisco TB Control program. She received her bachelors degree in biophysics and art at UC Berkeley with honors, and her medical degree at UC San Francisco. After completing her internship and residency in primary care internal medicine at UC San Francisco, Christine stayed on as faculty in the Division of General Internal Medicine. There she started the nascent primary care residency program at the Mount Zion site, developing the outpatient curriculum and clinical rotations, as well as developing a faculty-resident partnership model at the new practice site. From there she worked for 5 years as a primary care physician at Asian Health Services, a nationally renowned community clinic site for delivering care to Asian primarily non-English speaking patients. She instituted the first community-based case conference series there, which has been published and replicated in the SF area. She also served as a TB clinician at the San Francisco TB clinic during that time. In 2004, Christine returned to UC Berkeley to obtain an MPH degree in epidemiology and upon graduation, worked for Dr. Art Reingold at the California Emerging Infections Program. She served as the project clinician for multiple projects including the Unexplained Pneumonia Project, Unexplained Deaths Project, and the California Variant Creutzfeldt-Jakob Disease (vCJD) Surveillance Project. She also conducted an investigation of deaths secondary to *C. sordellii* in young women through retrospective death certificate review and molecular assays. She was board certified in internal medicine in 1996 and was recently recertified in 2006.

Peri Hopkins, MPH, has joined the Communications, Education, and Behavioral Studies Branch (CEBSB) as a Health Education Specialist. Peri comes to the branch with a wealth of health education experience and is already familiar to some of us; at a past TB ETN conference, she co-presented a session with Cheryl Tryon. Peri received her MPH degree from the

Rollins School of Public Health at Emory University. Before coming to DTBE, she worked at the Global AIDS Program for 4 years as a Training Specialist. Peri joined the Communications Team on March 31.

Raynal Jabouin, Jr., M.Ed., has joined DTBE for the summer in the Clinical and Health Systems Research Branch as a Ferguson fellow. Raynal, a native of Brooklyn, NY, and son of Haitian immigrants, is currently an MPH candidate at New York University. His area of specialization is international community health. Raynal received a B.A. degree magna cum laude in Political Science from Long Island University and a masters degree in International Education Development from New York University. In the winter of 2005, Raynal embarked on a life-changing journey to Haiti. While there, he worked with Save the Children, assisting in the implementation of various intervention activities. These included the prevention and treatment of infectious diseases, vaccination of children, distribution of supplemental vitamins and micronutrients, and reproductive health activities. This experience propelled him to pursue an advanced degree in public health. As a fellow in DTBE, he is drafting an ethnographic guide for TB programs serving the Karen ethnic group from Burma. His interests include program management and evaluation as well as infectious disease control and prevention. His mentor is Robin Shrestha-Kuwahara.

Daniela Makembe is working in FSEB this summer as a Project: IMHOTEP intern. She is a rising senior at the University of Maryland in Baltimore County. She is majoring in interdisciplinary studies, a degree program that encourages students to integrate multiple fields of study into one degree. She has chosen to integrate public health, infectious diseases, and international health to form a degree in international health development. Ultimately she hopes to work internationally to alleviate the health care burden faced by developing nations. She is participating in the Project: IMHOTEP program at Morehouse College. This program exposes undergraduate students to various components of the public health field. Daniela's public health experience includes malaria relief work in Ghana, an independent study project in the infection control unit of a Baltimore County hospital, an assignment with the national health initiative project, and a practicum on the NIH-funded Healthy Neighborhood (HANDLS) program.

Blen Mekuria has joined the Communications, Education, and Behavioral Studies Branch (CEBSB) as an administrative support contractor. Blen has a degree in sociology from the University of Tennessee in Knoxville. Her work experience includes providing research assistance, working as a graduate teaching assistant, developing and facilitating trainings for community groups, and working with task forces and non-profit organizations as an advocate. She joined CEBSB on April 29.

Sonal Munsiff, MD, has resigned from her position as Assistant Commissioner of the Bureau of TB Control (BTBC), New York City Department of Health and Mental Hygiene, and from her CDC position as a Medical Officer with DTBE, which she has held since 2001. Sonal has spent 15 years with the BTBC, 8 as Director and 7 in capacities that included physician-in-charge of the Morrisania Chest Clinic, medical consultant for field services in the Bronx, and director of the Epidemiology Office. She has authored or co-authored 58 articles and letters on HIV-TB treatment and epidemiology, treatment and epidemiology of drug-resistant TB, and many other aspects of TB treatment and control. She recently completed major edits for the fourth edition of the NYC "TB Manual." Over the last few years, she has been increasingly interested in expanding the Bureau's outreach activities targeting the high-risk groups in the city. She was instrumental in reviving the Coalition for a TB-Free NYC in 2006, which is now very actively working with several CBOs serving high-risk communities. She has also served on numerous national and international committees. She and her family are relocating to upstate New York, where she will work part-time as an infectious disease consultant and have more time for her family. We thank her for her many years of dedicated service to the City and to DTBE, and wish her the best of luck in her new endeavors. Her new email is ssmunsiff@pol.net.

Nancy Ortiz, MPH, has joined DTBE for the summer as a Ferguson fellow in the Surveillance, Epidemiology, and Outbreak Investigations Branch (SEOIB). Born and raised in the city of Los Angeles, Nancy desired a change of pace for college and headed to the University of California - Santa Cruz, where she majored in biological anthropology. She interned at the La Brea Tar Pits, where she excavated the asphalt of Pit 91 and uncovered Ice Age flora and fauna. These experiences led her first to a career in

education in which she developed science curricula for children and young adults in science centers, museums, and community health settings. Nancy's experiences in health education opened her eyes to the world of public health, and she decided to pursue an MPH degree at the University of Southern California, specializing in biostatistics and epidemiology. She had the opportunity to collect data for a diabetes intervention study in couples, as well as serve as a field researcher recruiting and interviewing participants for a health communication study. The latter study involved developing tailored recipes for low-income individuals who receive food from food pantries in Los Angeles. Nancy is interested in infectious disease, and she is very excited to be spending her summer as a Ferguson fellow with the Surveillance Team at DTBE. Her mentor is Elvin Magee.

Krista M. Powell, MD, joins the Surveillance, Epidemiology, and Outbreak Investigations Branch (SEOIB) as its new EIS Officer. She replaces Dr. Ann Buff, who has accepted a staff position in SEOIB. Krista grew up in Cairo, Georgia, and attended the University of Georgia in Athens (Go 'Dawgs), where she was selected for membership in the Phi Beta Kappa Society. She graduated s*umma cum laude* with a bachelor of science degree in microbiology. She then obtained her MPH degree in epidemiology and her MD degree from Emory University. Krista is currently in her last year of a 3-year residency in internal medicine at the University of California, San Francisco. She already has developed an appreciation for the complexities of conducting TB investigations in her ongoing work on a cross-sectional study of smear-negative tuberculosis in persons with HIV infection in Kampala, Uganda. Look for her results at the upcoming American Thoracic Society (ATS) meeting in Toronto. We welcome Krista to DTBE and look forward to working with her for the next 2 years. She joins SEOIB on July 1, 2008.

Adero Prescott joined the International Research and Programs Branch (IRPB) of DTBE as an Administrative Assistant on March 17, 2008. She brings 5 years of administrative and customer service experience to DTBE and IRPB, having worked for a high-end international skin care company, Jurlique Holistic Skin Care, as a product specialist. In that position, Adero adapted quickly to the demand for efficient leaders within her department and was promoted to team lead, and soon thereafter to the position of manager of the customer support staff. Before working in that position, Adero attended Bauder College in Atlanta, Georgia, where she studied fashion merchandising, psychology, and marketing trends and earned an Associate of Arts degree. Welcome, Adero!

Philip Ricks, PhD, MPH, joins the International Research and Programs Branch as a new EIS officer. A Chicago native, Philip grew up on the south side and attended the University of Chicago Lab Schools. He attended Princeton University, graduating with a BA in European History in 1985. He worked in commercial banking in New York City 1985–1992. During that time he also became involved in the AIDS crisis, as an activist and educator. 1993, he left New York to spend 9 months backpacking around the world, then returned to Chicago to pursue an MPH degree at the University of Illinois at Chicago, School of Public Health (UIC-SPH). During his masters program he worked as a research assistant on HIV/AIDS among injecting drug users. For his masters practicum, he completed an internship at WHO EURO in Copenhagen, Denmark, where he researched the epidemiological aspects of the diphtheria epidemic in the Newly Independent States of the Former Soviet Union. He subsequently joined WHO EURO, working in infectious disease surveillance. He spent 6 years in Copenhagen, where he also worked as an epidemiologist for the Danish Institute of Health (Staten Serum Institut) and as the founding lead data manager on an international AIDS/HIV research study. In 2002, he returned to UIC-SPH for his PhD, writing his dissertation on the control of TB among substance users. Philip is an avid sailor, dancer, and yogi.

Julian Thomas will be working in FSEB this summer as a Project: IMHOTEP intern. He is a graduate of the University of California, Berkeley, where he received his bachelor's degree in molecular and cell biology. This summer Julian will be working with Dr. Sundari Mase. He will assess the current research as well as the national and international TB control recommendations for information pertaining to the discontinuation of airborne infection isolation of patients with MDR or XDR TB. Julian hopes to begin medical school in fall 2009 and pursue a joint graduate degree in public health.

Padmaja Vempaty, MPH, MSW, joined DTBE in 2007 as a project coordinator in the Surveillance, Epidemiology, and Outbreak Investigations Branch (SEOIB) for TBESC's Task Order 13 latent TB infection (LTBI) study. Padmaja received an MPH degree in International Health from the University of Alabama, Birmingham, and an MSW degree in Mumbai, India. Before coming to DTBE, Padmaja was an ORISE Research Fellow at the Agency for Toxic Substances and Disease Registry (ATSDR), where she held a number of responsibilities, including the mapping of avian influenza (H5N1) cases and providing mapping and technical support to CDC's Director's Emergency Operations Center (DEOC) following hurricanes Katrina and Rita. During these emergencies, Padmaja assisted in the collection, monitoring, and geocoding of data on shelter locations. On the international front, Padmaja worked for 3 years with nongovernmental organizations (NGOs), such as the Committed Communities Development Trust in Mumbai, India, where she provided technical assistance in capacity building through community outreach, training, and establishment of prevention services in communities impacted by the HIV/AIDS epidemic.

Maureen Wilce, MS, has left the Field Services and Evaluation Branch (FSEB) and DTBE for a promotion into a new position as Lead Health Scientist (Team Leader), Evaluation and Community Interventions Team, Air Pollution and Respiratory Health Branch, Division of Environmental Hazards and Health Effects at the National Center for Environmental Health (NCEH). Maureen received her masters degree in Public Services Administration from Georgia State University in 1988. She began her work with DTBE in November 1998 as a Behavioral Scientist in the Clinical and Health Systems Research Branch before moving to FSEB in February 2003, where she led the program evaluation team. In her 5 years at FSEB, she led the division's program evaluation initiative and nurtured a team of evaluation specialists, both at DTBE and at the TB control program level, in making program evaluation a formal component of the TB Cooperative Agreement with the state TB control programs. As a direct consequence of her ability to direct such an ambitious effort, program evaluation is now a routine component of TB public health program practice and continues to evolve and develop. Maureen leaves a program evaluation team that will continue to thrive in her absence. Maureen also mentored numerous Association of Schools of Public Health (ASPH) fellows and Public Health Prevention Service (PHPS) fellows during her tenure at DTBE. Everyone in DTBE, in FSEB, and on the evaluation team, including the TB control programs around the country, will miss Maureen terribly, but wish her the best in her new and exciting job.

CALENDAR OF EVENTS

August 4–5, 2008
Interferon Gamma Release Assay Meeting
Atlanta, GA
DTBE/CDC

August 5–7, 2008
Eighth Annual TB Education and Training Network Conference
"TB Education and Training: Going for the Gold!"
Crowne Plaza Ravinia Hotel
Atlanta, Georgia
www.cdc.gov/tb/TBETN/conference.htm
E-mail: tbetn@cdc.gov

August 11–13, 2008
Fifth National Conference on Laboratory Aspects of Tuberculosis
San Diego, CA
Association of Public Health Laboratories (APHL)
www.aphl.org/profdev/conferences/TBConference/Pages/default.aspx

August 21–22, 2008
Northern Rocky Mountains TB Controllers Meeting
Jackson, WY
DTBE/CDC

August 24–28, 2008
Sixth Annual Public Health Information Network (PHIN) Conference
Atlanta, GA
Westin Peachtree Plaza
Theme: *Public Health Informatics: Collaboration at the Crossroads*.
Sponsors: CDC and Association of State and Territorial Health Officials (ASTHO)
www.cdc.gov/phinconference

September 8–10, 2008

First IUATLD Conference of the Southeast Asia Region
New Delhi, India
International Union Against Tuberculosis and Lung Disease
www.iuatld.org/full_picture/en/conf_courses/conferences/detail_conference.phtml?id_conference=45

September 14–16, 2008
26th Annual Meeting of the American College of Epidemiology
Tucson, AZ
American College of Epidemiology
www.acepidemiology2.org/

September 16–19, 2008
Southeast TB Controllers Meeting
Mobile, AL
DTBE/CDC

September 18–19, 2008
Northeast TB Controllers Meeting
New York City, NY
DTBE/CDC

October 4–8, 2008
Annual Congress of the European Respiratory Society
Berlin, Germany
European Respiratory Society
http://dev.ersnet.org/415-general-information.htm

October 14–17, 2008
Midwest TB Controllers Meeting
Minneapolis, MN
DTBE/CDC

October 16–20, 2008
39th IUATLD World Conference on Lung Health
Paris, France
International Union Against TB and Lung Disease
www.iuatld.org/upload/home_news/online_submissions_2008_es_278.pdf

October 25–28, 2008
ICAAC/IDSA 2008 – Joint ASM/IDSA meeting
48th Interscience Conference on Antimicrobial Agents and Chemotherapy (ICAAC) and 46th IDSA Annual Meeting
Washington, DC
American Society for Microbiology/Infectious Diseases Society of America
www.icaacidsa2008.org/

October 25–29, 2008
136th APHA Annual Meeting
San Diego, CA
American Public Health Association
www.apha.org/meetings/

October 25–30, 2008
Chest 2008
Philadelphia, PA
American College of Chest Physicians
www.chestnet.org/CHEST/program/registration.php

October 27–29, 2008
Southwest TB Controllers Meeting
Four Corners TB & HIV Conference
Flagstaff, AZ
DTBE/CDC
www.fourcornerstb.org/

October 27–31, 2008
TB Program Managers' Course
Atlanta, Georgia
DTBE/CDC

December 1–5, 2008
Pacific Island TB Controllers Meeting
Honolulu, HI
DTBE/CDC