



Dear Colleague:

This spring brought two important meetings for CDC's TB control staff. First, the American Thoracic Society (ATS) held its 100th annual conference in Orlando, Florida, May 21-26, 2004. This year the American Lung Association (ALA) celebrated its 100-year anniversary at the ALA/ATS Conference. On May 23, Dr. Dixie Snider and I, representing CDC/OD and DTBE, formally acknowledged ALA's early support for TB control efforts and for its superior, long-standing support and advocacy for public health in general by presenting honorary plaques and a letter of appreciation to the president of the ALA. May 23 was also the date of the CDC-sponsored poster session on TB. As usual, the TB poster presentations were very popular; the DTBE information booth was a success as well.

Second, the 2004 National TB Controllers Workshop was held in Atlanta from Wednesday, June 9, through Friday, June 11, with a number of preworkshop meetings held on June 8. The focus of the meeting was the importance of collaboration between TB control programs and their partners in the TB laboratory, as reflected in the theme of the meeting, "Critical Partnerships for TB Elimination." On June 9, after several speakers' updates, Ed Thompson, MD, MPH, Deputy Director for Public Health Services, CDC, gave the keynote speech. The remainder of the day was devoted to presentations and discussions about genotyping. Thursday's sessions were concerned with the intersection of programs and laboratories. On Friday, we heard about new technology, with two presentations on the QuantiFERON[®]-TB test. Cellestis, the manufacturer of the QuantiFERON[®]-TB test, has recently submitted an application for FDA approval of the second generation of the TB diagnostic test.

The current TB treatment guidelines became available to users of personal digital assistants (PDAs) on May 19, 2004. This PDA application, a new reference tool for physicians treating persons with TB, is based on the Treatment of Tuberculosis guidelines and is now available for download and use on PDA Palm OS devices. This interactive program provides current, accurate, user-friendly TB treatment guidelines for health care providers, allowing them to make informed decisions at the point of care. DTBE introduced and made an initial distribution of this tool in May at the ATS meeting. If you have a Palm OS PDA, we hope you will download the application and try it; please visit the DTBE website (www.cdc.gov/tb) to access it.

The announcement of the 2005 TB elimination cooperative agreements with state and local health departments was approved by HHS and was published in the *Federal Register* on May 28. This announcement begins a new project period on January 1, 2005. Staff of the Field Services and Evaluation Branch hosted a Web conference on June 2 with TB controllers to discuss the 2005 TB elimination program announcement.

Dr. Janet Collins, who has been appointed Acting Director of the National Center for HIV, STD, and TB Prevention (NCHSTP) with Dr. Harold Jaffe's retirement, met with staff of the Division of AIDS, STD, and TB Laboratory Research (DASTLR) on June 3 to announce the decisions that have been made on the reorganization of the division. Specifically, the four DASTLR branches (Sexually Transmitted Infections Branch; HIV Immunology and Diagnostics Branch; HIV and Retrovirology Branch; and the Tuberculosis/Mycobacteriology Branch) will be transferred organizationally to the Divisions of STD Prevention, HIV/AIDS Prevention: Surveillance & Epidemiology, and TB Elimination, respectively. We welcome this realignment, which is expected to build even stronger linkages between the scientific, programmatic, and laboratory work of NCHSTP. Dr. Dale Hu has agreed to serve as acting Associate Director for Laboratory Sciences in a new position that reports to the Director, NCHSTP, and represents lab interests and coordinates lab activities at the highest level within the Center. The reorganization is expected to become operational on July 19, 2004.

Dr. Harold Jaffe's retirement celebration was Friday, June 4. Harold has had a long and distinguished career with CDC, starting in 1974, when he joined CDC as a Clinical Research Investigator with the Venereal Disease Control Program. In 1981, he became an Epidemic Intelligence Service Officer and was assigned to study the earliest cases of AIDS, along with Dr. James Curran, currently Dean of the Rollins School of Public Health, Emory University, and then Coordinator of the CDC Task Force on Kaposi's Sarcoma and Opportunistic Infections. Through the 1990s, Harold served in a series of critical, director-level positions in CDC's HIV/AIDS hierarchy. Since 2001, he has served as Director of the National Center for HIV, STD, and TB Prevention. Harold is now leaving CDC, but not public health, accepting a new role as fellow of St. Cross College and Professor of Public Health at the University of Oxford, England. Having known Harold since I arrived at CDC almost 21 years ago, I can attest to the importance of his work and the loss that his departure represents.

I enjoyed seeing many of you at the recent NTCA workshop in Atlanta, and trust that you came away with a renewed appreciation for the important role of the laboratory in TB control, as I did. I want to convey my thanks for all the hard work that went into the posters, presentations, and meetings that went on. Best wishes for a safe and happy summer, and keep up the good work!

Kenneth G. Castro, MD

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Number 2, 2004

HIGHLIGHTS FROM STATE AND LOCAL PROGRAMS

A Multi-Jurisdictional TB Outbreak Among Seasonal Agricultural Workers From Oaxaca, Mexico

Year round, California employs more than 900,000 migrant and seasonal agricultural workers, 90% of whom are Mexico-born.^{1,2} In the past two decades there has been a rapid increase in the number of indigenous migrant workers in California: in 2003, approximately 50,000 to 100,000 agricultural workers were of Mixtec descent, originating from the Mexican states of Oaxaca, Puebla, and Guerrero. Mixtecs are Mexicans of indigenous (American Indian) descent. The group consists of many different communities with their own cultures and dialects of the Mixtec language. Catastrophic soil erosion and resultant crop failures in these areas have forced Mixtecs and other indigenous groups to migrate through Baja California and the western United States in order to find work.

Challenges for migrant populations in general are magnified in indigenous groups: they face discrimination from other migrant groups and employers, they receive the lowest wages for the least desirable jobs, and many, particularly the women, speak only their native language and cannot communicate effectively in Spanish or English with employers or health care providers.³

In June 2003, a local health jurisdiction (LHJ) requested assistance from the California TB Control Branch (TBCB) Outbreak Response Team (ORT) to contain an outbreak of TB among Mixtec seasonal agricultural workers. The LHJ had found five persons with TB (3 adults and 2 children) in several related households. The group came from

one small village in Oaxaca and traveled frequently among six LHJs in California and one in Washington state. The index case was a young Mixtec male who had a self-reported history of TB treatment in 2002 in Oaxaca. In March 2003, he arrived in California and was subsequently diagnosed with smear- and culture-positive pulmonary TB in May. Despite exhaustive efforts to promote adherence, including detention in a health facility, the index case was lost to follow-up in June 2003. A newly identified secondary case was also lost to follow-up at that time, before being informed of her TB diagnosis. Additionally, a tuberculin skin test (TST)-positive, symptomatic 18-month-old was lost to follow-up before initial evaluation could be completed. The LHJ requested ORT assistance to locate lost cases and suspects, and to identify additional contacts for evaluation.

Challenges to outbreak containment included frequent client movement between Mexico, California, and Washington; sociocultural, economic, language, and transportation barriers to accessing health care; and difficulty in establishing trust between health departments and clients. Contacts were difficult to elicit, locate, evaluate, and treat, primarily owing to clients' fear of health authorities because of their undocumented status. To contain the outbreak, the Outbreak Response Team (ORT) facilitated a coordinated approach with the participation of all involved entities, including state TB control programs in California and Washington, affected LHJs, community-based organizations (CBOs), CureTB, and TBNet.

To assess the extent of the outbreak, LHJs surrounding the outbreak county and those with known concentrations of migrant workers were canvassed for Oaxaca-born TB cases diagnosed in 2003. A TB outbreak alert was distributed to all Health Officers in California and community health care providers within affected LHJs, requesting

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rapid reporting of anyone from Oaxaca newly diagnosed with TB. Isolates from persons from Oaxaca with culture-confirmed TB with known or suspected epi-links were genotyped by CDC. The TBCB ORT, State of Washington TB Control, and LHJs held regular meetings and teleconferences to set outbreak investigation priorities and exchange information. A centralized outbreak database was maintained by the TBCB ORT and used to track patient movement and evaluation status.

In cooperation with the Fresno Health Department Communicable Disease Outreach Program, the Binational Center for Indigenous Oaxacan Development (CBDIO) in Fresno, California, provided TB education and outreach to Mixtec audiences. This was accomplished through radio and TV broadcasts in Spanish and Mixtec and a TB patient education audiotape that was recorded and distributed to health departments. Mixtec interpreters were located through CBOs, including the CBDIO and California Rural Legal Assistance.

Oaxacan community leaders were enlisted and the TBCB provided additional funds to the primary outbreak LHJ to hire a Oaxacan consultant to enhance LHJ cultural and language competence. LHJs and the TBCB ORT worked with *TBNet* to improve continuity of care as patients moved between US locations by enrolling them in the *TBNet* program.

It was also necessary to coordinate TB care in Oaxaca for persons with TB disease returning home before completion of treatment. Access to health care in the home village is limited, with the nearest clinic four hours away by bus. CureTB coordinated closely with health care staff in the home village area, who in turn coordinated with village leaders to ensure continuing therapy for persons with TB disease.

As of December 2003, 68 individuals were identified through this outbreak investigation and 56 completed evaluation. Ten (18%) have TB disease (5 culture-confirmed adults with pansusceptible disease, 5 clinically diagnosed pediatric cases), two (4%) are TB suspects, and 34 (61%) have latent TB infection. Eight of 10 outbreak cases and one TB suspect moved one or more times during evaluation and treatment. The index case was found in his home village in Mexico and was restarted on treatment; however, after only about 2 months of therapy it was reported that he had left his village and was returning to California. Efforts are currently underway to locate him. Thanks to information obtained through our active surveillance efforts, the lost secondary case was located in Washington state and started on therapy in August 2003. She returned to California in September and subsequently went back to Mexico in October, where her treatment continued as a result of close coordination between CureTB and health care providers in Mexico. In January 2004, she returned to California where therapy continues. The 18-month-old was located and evaluated in August 2003 and remains on treatment for clinically diagnosed TB. All other cases remain on treatment.

Genotyping results on isolates from the five culture-confirmed adult outbreak cases show an identical

DNA fingerprint among four of the isolates, suggesting transmission between these individuals or from a common source, or a TB strain endemic to the home village. Additionally, an isolate from a 2001 pleural case diagnosed in Washington state who came from the same village has a matching RFLP pattern with this outbreak strain.

This outbreak revealed a very high proportion of tuberculin skin test-positive individuals (80% of those evaluated). Interruptions in treatment, delays in diagnosis, and crowded living conditions contributed to extensive transmission in this outbreak. Breaks and delays in treatment were related to fear of authorities, lack of financial resources, lack of transportation, long work hours, language barriers, lack of TB knowledge, and frequent movement. Results from this investigation highlight the difficulties in containing TB outbreaks in migrant workers and indicate the importance of collaboration between community partners and health jurisdictions at local, state, and national levels for containment of an outbreak among a highly mobile population. Involving community leaders, providing adequate interpretation, and using all available media to communicate key messages are effective methods for creating awareness and establishing trust within a hard-to-reach population, and thus decreasing lost cases and suspects and halting transmission.

The genotyping results and anecdotal information obtained from case interviews suggest that in addition to U.S.-based transmission, there may be ongoing TB transmission in the home village. Continued coordination with health authorities in Mexico will be critical to ensuring containment of the outbreak on both sides of the border.

—Submitted by *Tina Albrecht, MSPH, Public Health Advisor*
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2. California Institute for Rural Studies, Rural California Report. *Who Does California Farmwork*. Fall 2001; vol 12 (3).

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Georgia TB Outreach Worker Training

The American Lung Association of Georgia (ALAG) and the Georgia Department of Human Resources, Division of Public Health, Prevention Services Branch, Tuberculosis Program (Georgia TB Program) collaborated to develop and implement the Georgia TB Outreach Worker Training course. The first session was held on September 25 and 26, 2003, at ALAG’s office in Smyrna, Georgia. Although Georgia’s TB cases are decreasing (from 577 cases in 2001 to 533 cases in 2002) and directly observed therapy has been the standard of TB care in Georgia since 1995, timely TB treatment completion rates and treatment completion for latent TB infection still fall short of national target goals. It is essential for local TB programs to be able to educate and retain a cadre of case managers, outreach workers, and field staff needed to achieve critical TB program outcomes such as timely completion of TB treatment and thorough contact investigations. This workshop was developed to build the skills and competencies of these critical public health staff.

A core planning committee, which consisted of staff from the Fulton County Department of Health and Wellness, the ALAG, and the Georgia TB Program, met several times over 4 months to gather information and materials developed by CDC, the Francis J. Curry Model TB Center of San Francisco, California, and the Georgia TB Program to plan the curriculum and teaching methods. A variety of teaching methods were incorporated over the 2-day training course, which included lecture, role-play, and group and individual activities. The curriculum included TB Epidemiology, TB 101/Case Management, Contact Investigation, Interviewing Skills/Clustering Techniques, Directly Observed Therapy, Infection Control, Safety in the Field, Documentation/ Confidentiality/ HIPAA, and

Cultural Competency. The workshop also included instruction in sputum collection procedures focusing on interpreting sputum laboratory results. Emphasis was also placed on developing rapport with the patient and community. Presenters were from the Fulton County Department of Health and Wellness, the ALAG, and the Georgia TB Program.

The planning committee decided to pilot test this first training course mainly within the Metropolitan Atlanta districts. The training included 25 participants from the counties in the Metropolitan Atlanta area, as well as from Athens, LaGrange, and Savannah. Participants were required to attend both days of the training and to complete a pretraining questionnaire or self-assessment tool, a pretest, a posttest, and an evaluation. The job titles of the participants included Disease Investigation Specialist, Communicable Disease Specialist, Outreach Worker, Public Health Technician, and Public Health Nurse. All participants were from public health settings and had less than 5 years' experience in public health. The evaluations were favorable, with the majority of the participants offering "no suggestions" for changes needed for future workshops. The participants indicated that the training "was very beneficial, a lot was learned, very informative, and quality materials." On a Likert scale of 1 to 5 with 1 being poor and 5 being excellent, the overall score for the workshop was 4.4, with scores ranging from 4.2 to 4.6. The average pretest score was 63%, and the average posttest score was 80%. This reflects an average 17% increase in knowledge. District TB coordinators provided informal verbal feedback expressing their appreciation for having well-trained field staff and requesting future outreach worker training.

ALAG and the Georgia TB Program will present this training to districts outside of the Metropolitan Atlanta area as regional workshops. In October and November 2003, a needs assessment of the remaining districts was conducted. Out of the 12 districts assessed, 8 districts reported a need for outreach worker training. Owing to the positive response, the ALAG and the Georgia TB Program are investigating potential sites for the training outside Metropolitan Atlanta. Both the ALAG and

the Georgia TB Program feel that providing quality targeted educational opportunities for TB staff is vital to the public health workforce.

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Inaugural Meeting of the Pacific Island TB Controllers Association

The CDC National TB program includes not only the 50 states, the Commonwealth of Puerto Rico, and the U.S. Virgin Islands, but also three additional U.S. territories and three independent U.S.-affiliated nations. These additional territories and independent nations are referred to by CDC as the Pacific Island Jurisdictions (PIJs). The U.S. territories are Guam, American Samoa, and the Commonwealth of the Northern Mariana Islands. The three independent U.S.-affiliated nations are the Republic of Palau, the Republic of the Marshall Islands, and the Federated States of Micronesia (Pohnpei State, Kosrae State, Chuuk State, and Yap State). Each of these three independent states has entered into a Compact of Free Association with the United States. Under these compacts, these countries are fully sovereign in domestic and foreign affairs, but give responsibility for their defense to the United States. All six of these territories and nations are members of the Western Pacific Regional Office (WPRO) of the World Health Organization.

Roughly half a million people live in these six jurisdictions. The individual populations are as follows: Guam, about 155,000; American Samoa, 57,300; Northern Mariana Islands, 69,000; Palau, 19,100; Marshall Islands, 52,000; and Micronesia, 107,000. The total land area of all the PIJs is equivalent to two thirds of Rhode Island, our smallest state (1,545 square miles).



Land is scarce, but the ocean resources are vast, encompassing 20 times more area than the total square miles of land. While all these islands have the ocean as a major asset, they also have relatively few other natural resources. Eighty percent of the islands' basic needs must be imported, making harbors and airports the lifelines of island communities. These island nations deal with many challenging dynamics that include reaching and supporting prevention activities in locations separated by vast expanses of ocean, highly mobile populations, a lack of primary health care providers and facilities, variable economic and social conditions, and the challenge of adequately managing the migration and movement of regional and international visitors and workers. Through territorial agreements with the United States, PIJ citizens are able to immigrate to the mainland without overseas screening for health conditions as is required of those permanently resettling from other foreign countries.

With limited surveillance information, the World Health Organization (WHO) Western Pacific Regional Office (WPRO) has estimated the year 2000 TB incidence rate for these PIJs to be 87/100,000 population. While each PIJ is unique, they all share common challenges in supporting a

TB control program. To address these challenges as well as to share solutions to unique problems, DTBE's Field Services and Evaluation Branch (FSEB) partnered with the Pacific Island Health Officers Association (PIHOA) to host the inaugural meeting of the Pacific Island TB Controllers Association (PITCA). This historic meeting brought together representatives from the six PIJs; the State of Hawaii TB Control Program and Public Health Laboratory; Hawaiian, Continental, and Aloha airlines; eDOTS International Development Projects; the University of Guam; the WHO WPRO; the Secretariat of the Pacific Community; the US Public Health Service (USPHS); the CDC Division of Global Migration and Quarantine; and DTBE. The meeting was held in Honolulu, Hawaii, from December 2 through 4, 2003.

During the first 2 days, PIJs described their major concerns with respect to TB program administration and laboratory activities. Facilitators worked with PIJ representatives to identify regional and local solutions. These solutions were compiled into a PIJ-specific action plan for calendar year 2004. Proposed major solutions at this inaugural meeting ranged from public health service cross-training, management and leadership training, continuing education requirements for health department staff,

training in laboratory quality control, continued access to laboratory supplies and equipment, developing shipping protocols, and program evaluation.

The final day focused on updates regarding shipping of TB specimens to reference laboratories. While all mainland programs include the full spectrum of TB laboratory services in their program effort, most of the PIJs (with the exception of Guam) do not have the resources to support TB culture and susceptibility testing. These programs are implementing the WHO DOTS protocol (focus on AFB-smear microscopy); however, few have the resources to implement a mainland-type program. The ability to provide TB culture and susceptibility testing will help these programs provide appropriate TB treatment to patients as well as accurate information regarding resistance levels in this region.

In summary, this inaugural meeting was an invaluable process for formalizing collaborations among many partners. Participants left the meeting extremely motivated to reduce the impact of TB in their respective PIJs. Each PIJ created action plans, and with technical assistance from FSEB and PIHOA, PIJs will be monitoring their progress in meeting these action items. The most critical priorities across these PIJs for 2004 were continuing to improve laboratory quality control, ensuring quality AFB smear microscopy at the local program level, and maintaining an adequate provision of laboratory reagents.

To continue supporting improvement in PIJ program development activities, PIHOA and CDC are collaborating with the PIJs to host a second PITCA meeting, scheduled for later in 2004 in the State of Pohnpei of the Federated States of Micronesia.

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TB Education and Training Network (TB ETN)

Member Highlight

Linette McElroy, RN, is the Manager of Nursing Programs at the Division of TB Control at the British Columbia Centre for Disease Control in Vancouver, B.C., Canada. Linette's visit one day to CDC's Web site lead her to the highlighted information on the 2003 TB ETN conference in Atlanta. When we asked Linette what influenced her decision to join TB ETN, she replied, "Why not? Holy cow! I'd have joined earlier if I'd known about it!"

Even in the short time she's been a member, Linette feels that TB ETN has dramatically enriched the TB care and education that she is able to provide. Meeting and networking with others who face the same professional challenges she faces has been invaluable to her. The TB ETN has also opened her eyes to the amazing variety of support resources that have already been developed, saving her from reinventing the wheel, and most importantly, helping her to be well-prepared to meet the needs of her community.

Linette's job responsibilities include policy and procedure development for community health, acute care, long-term care, and licensed community care facilities in the Province of British Columbia, and development and facilitation of educational programs with regard to all aspects of TB control at both provincial and federal levels. She has recently completed a contract with Health Canada and Correctional Service Canada to orient corrections' health care staff (via full-day workshops) to new guidelines for the prevention and control of TB in Canadian federal correctional institutions.

Linette was so impressed by TB ETN and the promise it holds for all of us in TB prevention and control that she volunteered to serve as a member of the Communications and Membership Subcommittee and of the TB ETN 2004 Conference Planning Committee. Her desire is to see TB ETN become a "household word," so to speak, in the TB prevention and control professions. The best way to do that is through activities that strategically increase TB ETN membership to include representatives from each and every country in the world. "We all know that TB is a global problem. The solutions should also be global. I believe that TB ETN has the potential to have exactly this kind of impact," Linette said.

As mentioned in Linette's job responsibilities, her most recent training and education programs include orientation sessions that are full-day workshops of 25-30 participants per session. The format of the sessions was developed in conjunction with an Adult Education Specialist/Information Technologist and includes several dynamic team learning activities, PowerPoint presentations, and hands-on demonstrations, not to mention several subtle (and not-so-subtle) invitations to join TB ETN!

Linette has also developed a full-day TB workshop for the British Columbia Centre for Disease Control. The content of this workshop is geared toward health professionals who give and interpret tuberculin skin tests. The title of the workshop is "TB Basics & Tuberculin Skin Testing." It is facilitated by Linette or by nurses from the TB Control Program. The course is offered in Vancouver, B.C., four to six times per year.

In addition to Linette's exciting career as a TB Nursing Programs Manager/TB Educator, she is also a Mom to two wonderful boys: David, who's 19, and Marc, who's 14. "When they were younger, they were my 'hobbies' and interests, but now that they're getting older, I've had a chance to expand my horizons again," Linette said. Away from work she enjoys a variety of activities. She confesses to being a bit of a traditionalist at heart in some respects, with such time-honored and satisfying pursuits as baking, quilting, and canning. Her other

great love is dogs, and in particular, competition flyball dog racing. She teaches flyball lessons for the dog sport club where she holds a membership, much to the delight of the two border collies in her family. "Maddie" and "Sophie" have taught her much about the value of long walks in the park or at the beach. In Vancouver, B.C., where they live, they are blessed with many beautiful places where they can do exactly that!

Linette looks forward to being able to contribute to TB prevention and control for a long time, and hopefully, in many places throughout the world.

If you'd like to join Linette as a TB ETN member and take advantage of all TB ETN has to offer, please send an e-mail requesting a registration form to tbetn@cdc.gov. You can also send a request by fax at (404) 639-8960 or by mail to

TB ETN
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If you would like additional information about the TB Education and Training Network, visit the Web site at <http://www.cdc.gov/nchstp/tb/TBETN/default.htm>.

—Submitted by Regina Bess
Div of TB Elimination

TB ETN Fourth Annual Conference

TB Education and Training Network (TB ETN) invites you to its fourth annual conference, *TB Education and Training Survivor: Improving skills, building alliances, meeting challenges*, to be held August 11-13, 2004, in Atlanta, Georgia.

Conference Topics

- How to Play the Game - Planning and Strategy Development
- Exploring the Island - Needs Assessment
- Learning the Island Lingo - Cultural Competency in TB Education and Training

- Building Your Shelter - Development/Adaptation of Materials
- Communicating with the Mainland - How Technology Is Changing TB Education and Training

Conference Registration

If you'd like to attend the TB ETN conference, you can register online at <http://www.cdc.gov/nchstp/tb/TBETN/conference.htm>. There is no registration fee!

Hotel Information

The conference will be held at the Sheraton Colony Square Hotel (<http://www.sheratoncolonysquare.com/>) located at 188 14th Street NE, Atlanta, Georgia. A block of rooms has been reserved Tuesday, August 10, through Thursday, August 12, assuming a Friday morning checkout. The room rate is \$112.00, exclusive of applicable state and local taxes. To reserve your room, please contact the hotel directly at the toll-free number (866) 912-1171. In order to receive the special group rate, please identify yourself as an attendee of the CDC TB ETN conference. The reservation deadline is July 16. If you have any questions about hotel reservations, please feel free to contact Betsy Carter by e-mail at bkc9@cdc.gov or by phone at (404) 639-8386.

If you would like more information about the conference or the TB Education and Training Network, please send an e-mail to TBETN@cdc.gov or go to <http://www.cdc.gov/nchstp/tb/TBETN/conference.htm>

—Submitted by Betsy Carter, MPH, CHES
Div of TB Elimination

Cultural Competency

The Cultural Competency Subcommittee, co-chaired by Genevieve Greeley of Utah and Savitri Tsering of Wisconsin, is composed of volunteers from TB programs across the country. The group is dedicated to promoting cultural competency among members of TB ETN. During monthly conference

calls members propose ideas for projects and discuss issues related to TB ETN.

This year the group has the following plans:

- Assist the TB ETN conference planning committee in identifying speakers and presentations on improving cultural competency in TB programs.
- Continue to enhance the cultural competency resource database that is available from Heather Joseph (Hjoseph1@cdc.gov). New materials (Web sites, articles, reports, assessment tools, professional contacts) for inclusion in the resource list are always appreciated.
- Share and review assessment tools for use in evaluating the cultural appropriateness of materials. While the group is careful not to endorse any particular methodology or guideline, it hopes to make cultural competency tools available to TB control programs to assist them in the evaluation of materials.
- Contribute knowledge and expertise in reviewing a draft Cultural Competency Program Assessment Toolkit under development by the CDC.
- Submit cultural competency tips from a number of sources for inclusion in each edition of TB Notes.

The committee wants to share the following *Cultural Competency Tip*:

Based on Kleinman, Eisenberg, and Good's questions for eliciting patient health beliefs, the following is a series of exploratory questions for assessing patient perceptions about TB:¹

- What do you think causes TB?
- What problems will your illness cause you?
- Why do you think you got sick when you did?
- What does TB do to your body?
- How severe do you feel your illness is?

- What treatment do you think you should receive for TB?
- What are the most important results you hope to receive from treatment?
- What are the main problems your illness has caused you?
- What do you fear about your illness?
- How do your family members or close friends feel about your TB?

—Submitted by the TB ETN Cultural Competency
Committee
TB Education and Training Network

Reference

1. CDC. *Improving Patient Adherence to Tuberculosis Treatment*. Atlanta, GA: US Dept of Health and Human Services; 1994.

UPDATES FROM THE COMMUNICATIONS, EDUCATION, AND BEHAVIORAL STUDIES BRANCH

World TB Day 2004

World TB Day is recognized each year on March 24. On this date in 1882, Dr. Robert Koch announced his discovery of the tuberculosis (TB) bacillus. Observance of this day is intended to raise awareness about the devastating health and economic consequences of TB, its impact on developing countries, and its continued overwhelming impact on global health.

To assist TB controllers and other partners throughout the United States in their TB elimination efforts, a variety of updated World TB Day materials for use in local efforts were produced and distributed. These updated materials included the following:

"TB Elimination: Now Is the Time" brochure. This brochure contains key messages about TB not being a disease of the past, the consequences of

neglecting TB control programs, and what must be done to finish the job of eliminating TB in the United States.

"A Global Perspective on Tuberculosis" fact sheet. This fact sheet contains historical information on World TB Day, the impact of TB worldwide, and global TB data.

"TB's Burden in Minorities" fact sheet. This fact sheet discusses the disproportionate burden of TB in minorities and factors likely to contribute to this burden.

Additional copies of the posters and fact sheets are still available in limited quantities by calling the CDC National Prevention Information Network (NPIN) at 1-800-458-5231 or by visiting their Web site at <http://www.cdcnpin.org>.

The American Lung Association (ALA) and the National Coalition for the Elimination of Tuberculosis (NCET) collaborated to promote World TB Day. ALA and NCET released an update of the report, "Tuberculosis Elimination: The Federal Funding Gap." The report was presented at a Congressional briefing in conjunction with World TB Day 2004. You may obtain a copy of the report at the Web site:

http://www.lungusa.org/press/association/asn_031904.html.

DTBE joined the Tuberculosis Control Section of the Georgia Division of Public Health in a March 24th World TB Day observance in Atlanta. Dr. David Satcher, former CDC Director and former Surgeon General of the United States, was the keynote speaker. Dr. Satcher's topic was "TB Health Disparities in Fulton County." DTBE was represented by Dr. Zachary Taylor, Chief, Field Services and Evaluation Branch. The theme of the event was "TB Elimination: Now Is the Time!"

The Stop TB Partnership Secretariat hosted the second Stop TB Partners Forum, which was held March 24-26, 2004, in New Delhi, India. The Forum convened ministerial delegations of the 22 highest TB burden countries, as well as high-level political invitees from the G-8 countries and all Stop TB partners. The meeting highlighted progress at the country level and the

importance of private and civil sector involvement. For more information, visit the Stop TB Partners Forum Web site at http://www.stoptb.org/events/partners_forum/2004/.

—Reported by Scott McCoy, MEd
Div of TB Elimination

DTBE Convenes TB Behavioral and Social Science Research Forum

On December 10-11, 2003, the Tuberculosis Behavioral and Social Science Research Forum, sponsored by CDC and DTBE, was held in Atlanta, Georgia. The goals of the Forum were to

- Identify and prioritize TB behavioral and social science research gaps;
- Contribute to the development of a research agenda for the U.S.-based research community to guide TB behavioral and social science research; and
- Develop and enhance partnerships between behavioral and social science researchers and TB control providers.

The Forum brought together over 60 individuals involved or interested in TB behavioral and social science research. This included academicians, researchers, contractors, TB program staff, patients, as well as representatives from the National TB Controller's Association, the TB model centers, and the National Center for HIV, STD, and TB Prevention and the Division of TB Elimination.

The Forum activities included presentations from academicians and TB program staff highlighting the contributions that behavioral and social science research can make to TB prevention and control. In addition, patients and health care workers shared their experiences with TB prevention and control activities through a panel discussion. Another panel discussion addressed the need for and challenges of translating research into effective practice.

A key activity of the Forum involved convening participants into "breakout sessions" where they were charged with identifying and prioritizing

behavioral and social science research gaps in the area of TB elimination and control. DTBE staff are working with Abt Associates to synthesize the information from the Forum, including the breakout sessions, to develop a proceedings document. Another Forum follow-up activity consists of finalizing a literature review of TB behavioral and social science literature. The data derived from the literature review will be used in conjunction with the proceedings of the Forum to develop a research agenda for the U.S.-based research community to guide future TB behavioral and social science research.

Finally, a behavioral science listserv will be established. The listserv will provide a means for maintaining the momentum from the Forum and facilitating ongoing dialogue and consultation among individuals interested in behavioral and social science issues as they relate to TB prevention and control.

If you have any questions about the Forum or wish to join the TB behavioral and social science listserv, please contact either Nick DeLuca at (404) 639-8988 or ncd4@cdc.gov or Robin Shrestha-Kuwahara at (404) 639-8314 or rbk5@cdc.gov.

—Submitted by Nick DeLuca, MA, and
Jane S. Mezoff, DrPH, CHES
Div of TB Elimination

New PDA Application for the Treatment of Tuberculosis

The May 2000 Institute of Medicine (IOM) report on the status of TB elimination in the United States highlighted numerous needs in education and training and provided recommendations in this area to aid in making U.S. TB elimination a reality. One highlighted need was that public and private health care provider experience with assessing and managing TB diagnostic or treatment issues will decline as the number of TB cases decline. To ensure competency among health care providers, the report recommended that a variety of methods be used for education, training, and reference material.

In response to the IOM report and based on recent literature that shows that health care providers frequently use personal digital assistants (PDAs) to access medical information, the Division of Tuberculosis Elimination (DTBE) has developed a PDA application based on the 2003 Treatment of TB guidelines. This new tool provides accurate, useful TB treatment information that is readily available at the point of care. The application can be easily downloaded from the DTBE's Web site at www.cdc.gov/tb. Features of the application include the following:

- An interactive module that captures patient data and evaluates the need for treatment
- Text-based modules containing information about
 - treatment regimens
 - antituberculosis drugs
 - managing treatment interruptions

Development of the PDA application followed a systematic health education process that included extensive pretesting with potential users. After DTBE, the American Thoracic Society (ATS), and the Infectious Diseases Society of America (IDSA)

collaborated to compile accurate and useful content, a prototype of the application was developed and pretested with nurses and physicians, i.e., potential users. The pretest was conducted by observing these users as they worked through sample scenarios. This process enabled DTBE to identify ways to improve the application's design and thereby enhance a user's experience. To ensure that the modifications made as a result of the pretest were effective, additional tests were conducted with users in both controlled and everyday environments.

Comprehensive pretesting of the PDA application was an essential component in creating an interactive user-friendly tool for health care providers to use at the point of care. Please visit DTBE's Web site at www.cdc.gov/tb to download a copy of the application for your PDA. If you have comments that could help us make the application a more useful tool, please send comments to bcarter1@cdc.gov.

—Reported by Betsy Carter, MPH, CHES
Div of TB Elimination

Your One-Stop Site for TB Education and Training Resources

Make the *TB Education and Training Resources Web Site* (www.findtbresources.org) your one-stop site for TB education and training resources. The Web site includes a searchable database of materials from many national and international organizations, such as DTBE, the National Model TB Centers, and the World Health Organization (WHO). The ongoing addition of new materials keeps the database up to date.

Find materials to suit your needs. Use the quick or advanced search features to find materials. With the advanced search, you can specify areas such as topic, format, audience, language, and author. You can print many materials directly from the Web site, as well as tailor them to your organizational needs.

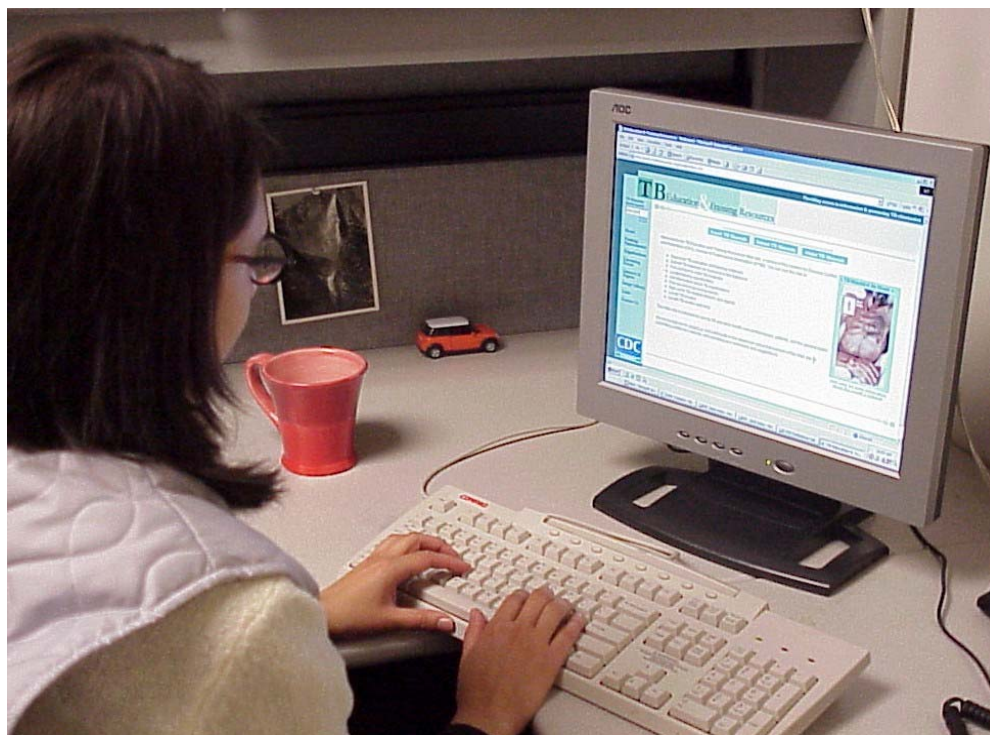
Make your organization's TB materials available. Share your resources with others! A submission form is available with this issue of *TB Notes*. Please use it to submit information on any education or training materials you produce that are not already included in the Web site. Help us continue to make this database as comprehensive as possible.

What's New

- A link to the Stop TB Partnership Image Library
- *Guidelines for Workplace TB Control Activities: The Contribution of Workplace TB Control Activities to TB Control in the Community*— the International Labour Organization and the WHO
- *Making the Connection: An Introduction to Interpretation Skills for TB Control*— the Francis J. Curry National TB Center

- *Manual for the Management of Binational Tuberculosis Patients* – the Migrant Clinicians Network

...and many more!



A health professional uses the Web site to search for materials on BCG

This Web site can also help you

- Find out how to order TB materials
- Locate funding opportunities
- Get information about TB organizations
- Find out about upcoming events
- Sign up for TB-related listservs and digests
- Locate TB images
- Locate TB-related Web links

Be sure to bookmark the *TB Education and Training Resources* Web site! If you have any questions or comments about it, please send an e-mail to info@findtbresources.org.

—Submitted by Hsin-Hsin Foo, MPH
Div of TB Elimination

INTERNATIONAL UPDATES

Training Course in Russia in TB Operational Research

In collaboration with the World Health Organization (WHO) and the Central TB Research Institute of Russia, staff of DTBE's International Research and Programs Branch conducted a training course in Operational TB Research Design and Evaluation at the Central Research Institute of Epidemiology of Russia. The participants included 24 TB control managers from USAID-funded TB control program sites (Orel, Ivanovo, Vladimir, Chuvashia, Belgorod), WHO TB project assistants, scientists from four federal TB Research Institutes, and TB managers from two regional programs, the latter supported by the Norwegian Heart and Lung Association (Arkhangelsk) and Partners in Health (Tomsk).

This is the first training of its kind provided to TB professionals in Russia. Participants developed operational research proposals (cost effectiveness, MDR TB, pediatric TB, surveillance) aimed at improving the response to disease outbreaks in

their respective regions. CDC, WHO, and USAID TB experts will review each proposal and provide technical assistance and grant funding to help implement the best projects.

—Submitted by Peter Ciegielski, MD
Div of TB Elimination

Evaluation of the Brazilian National TB Surveillance System

Most epidemiologists, public health policy makers, TB program managers, and health experts would agree that TB surveillance is a crucial tool in their decision making. Where disagreement may arise among the various stakeholders is in their assessment of the system's reliability, completeness of coverage, and utility, among other attributes. For example, in Brazil, the national TB surveillance system (SINAN-TB: *Sistema de Informação de Agravos de Notificação-Tuberculose*) reported to the World Health Organization (WHO) approximately 74,500 new TB cases in 2001, whereas WHO's own estimate of TB cases in Brazil for that year was approximately 110,500 — a substantial difference (WHO estimates total TB cases based on TB incidence reappraisals in reporting countries).^{1,2} In recognition of the importance of accurate surveillance data, the Brazilian Ministry of Health invited the International Research and Programs Branch (IRPB) of DBTE to participate in an evaluation of SINAN-TB.

In order to accomplish the evaluation of the Brazilian TB surveillance system information was gathered from six different sources: (1) SINAN-TB; (2) *Livro Preto* (the local TB registries kept at each treatment facility); (3) patient records; (4) *Sistema de Informação de Mortalidade* (SIM), a national mortality reporting system; (5) interviews with treatment center staff; and (6) interviews with municipal, regional, state, and federal TB program administrators. A comparison of specific data elements between SINAN-TB and *Livro Preto* (and patient records), and between SINAN-TB and SIM was designed to assess the more quantitative aspects of SINAN-TB including data quality, timeliness, representativeness, and completeness of coverage. The qualitative assessment of the

system relied on personnel interviews to determine the system's simplicity, flexibility, acceptability, stability and utility.

Relatively new to the world of TB surveillance is the capture-recapture methodology,³ used in this evaluation to estimate SINAN-TB completeness of coverage. This strategy, first applied in wildlife management, estimates the number of uncounted TB patients by matching the number of patients simultaneously recorded by two or more surveillance systems that capture parallel information (i.e., number of TB deaths in SIM matched against the number of TB patients in SINAN whose outcome is death). A two-source model can estimate a system's completeness of coverage fairly accurately if the underlying assumptions of the capture-recapture method are not violated: (1) cases must have the same probability of appearing in each source, (2) the probability of a case appearing in any source is independent of the other sources, and (3) the population under study is closed.³

Data on approximately 1000 TB patients listed in the year 2000 in the *Livro Preto*, encompassing approximately 15 treatment centers in 4 Brazilian cities (Rio de Janeiro, Maceio, Porto Alegre, and Recife) were matched to those of patients from the same geographical areas and treatment time period as recorded in SINAN-TB. Approximately 100 total TB staff members from these treatment centers and from TB programs at various governmental levels were interviewed. In addition, records of patients who died in 2000 or 2001 with a TB diagnosis (by ICD-9 coding of the primary-, secondary-, tertiary-, and quaternary-associated diagnoses) as recorded in SIM were matched with those of patients recorded in SINAN-TB for the year 2000 from the four cities surveyed--over 15,000 names.

The overall evaluation found SINAN data quality to be good with one exception: follow-up patient information. For example, 80% of follow-up sputum smears and 64% of patient outcomes were missing from SINAN-TB. Further, almost one fourth of staff members interviewed did not feel they were an important part of the system, suggesting, along with responses to other questions, that SINAN-TB

acceptability was low. Timeliness of the system was also suboptimal, mainly because the end users received epidemiologic data feed-back unevenly and infrequently. Consequently the utility of SINAN-TB was felt to be limited.

Conflicting results were obtained for SINAN-TB completeness of coverage. When compared to *Livro Preto*, the system's coverage was estimated to be about 71%, a figure much closer to WHO estimates of TB case detection in Brazil in 2000. When compared to SIM, however, the estimate of the system's coverage fell to 24%. One possible explanation for this latter difference is that deaths in SIM may have occurred or been reported in jurisdictions other than the municipality where patients were receiving TB treatment, or vice versa, thus violating the "closed population" assumption of capture-recapture methodology. This situation may falsely lower the estimated completeness of coverage of SINAN-TB (and of SIM as well). In order to test this hypothesis, the matching of TB patients in SIM and SINAN-TB is being expanded to include the four states in which the four surveyed cities are located. Tuberculosis patients in the SIM and SINAN-TB databases for each state, in its entirety, will be matched. The goal of this approach is to minimize geographical reporting artifacts. In addition, log linear modeling will be applied to the three databases used for this evaluation in order to arrive at a more accurate completeness of coverage figure for SINAN-TB.

In conclusion, this evaluation found SINAN-TB to be a useful TB surveillance system; however, its utility is reduced by (1) low capture of follow-up TB patient information, thus hindering program evaluation at all levels; (2) deficient data feedback, limiting program improvement efforts at local and regional levels; and (3) relatively low completeness of coverage (range 24%-71%), possibly leading to underreporting of TB cases.

The following recommendations were made to the Brazilian Ministry of Health, Secretariat for Health Policy. The Brazilian National TB Program should consider the following: (1) establishing a federal SINAN-TB advisory council to assess, develop, and oversee system changes and serve as a

representative body to address end-user interests and needs; (2) establishing accountable executive positions with budgetary and oversight authority as well as with responsibility at the state and municipal levels for the purposes of quality assurance; and (3) ensuring access to and feedback of epidemiologic TB information for all programmatic administrative levels, as well as encouraging the use this information through currently available resources (i.e., technology, training, technical assistance).

As of this writing, a number of the recommendations made by the International Research and Programs Branch (IRPB) of DTBE for the improvement of SINAN-TB have been implemented, as modified by prevailing circumstances. The impact of the applied recommendations has not yet been assessed; however, the evaluation has been instrumental in raising the completeness of patient follow-up information in SINAN-TB from approximately 30% to 50%. In addition, with a credible assessment of Brazil's TB surveillance system available to them, public health officials now take into consideration SINAN-TB underreporting of TB cases in programmatic and policy decisions while the system is improved.

—Reported by Abe Miranda, MD
Div of TB Elimination

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Interactions Between CDC's Global AIDS Program (GAP) and International Research and Programs Branch (IRPB)

The NCHSTP Global AIDS Program (GAP), which began in 1999 as the LIFE initiative, is now working to combat the burden of HIV/AIDS in 25 countries

around the globe, including 17 in Africa, 5 in Asia, and 3 in the Caribbean and South America. GAP seeks to partner with many in-country institutions, including ministries of health, official nongovernmental organizations, international organizations, the private sector, universities, as well as other divisions at CDC. To date, GAP has focused on three program areas: (1) prevention, (2) care and treatment, and (3) surveillance and infrastructure development.

In January 2003, in his State of the Union address, President Bush announced a new proposal to provide US \$15 billion for care and treatment of persons with human immunodeficiency virus (HIV) in 14 countries. This initiative, known as the President's Emergency Plan for AIDS Relief (PEPFAR), <http://pretoria.usembassy.gov/wwwh aids.html>, aims by 2007 to prevent 7 million new HIV infections, to treat 2 million infected persons with antiretroviral treatment (ART), and to provide care and support to 10 million persons living with or affected by HIV, including orphans and vulnerable children. PEPFAR activities will be concentrated in 14 countries (Botswana, Ethiopia, Guyana, Haiti, Ivory Coast, Kenya, Mozambique, Namibia, Nigeria, Rwanda, South Africa, Tanzania, Uganda, and Zambia) and one regional office (in the Caribbean) hardest hit by the HIV epidemic. GAP is working to coordinate efforts in the 14 countries along with other agencies of the Department of Health and Human Services, the State Department, the Department of Defense, and others.

The International Research and Programs Branch (IRPB) of DTBE has been working with GAP to ensure that TB is included in the package of care and treatment services of the PEPFAR initiative. This is particularly important since TB is the leading opportunistic infection among persons with HIV in many countries, and accounts for up to 40% of all AIDS-related deaths in some of the hardest-hit countries. Key activities include intensive TB case finding in HIV-infected persons at risk of TB disease, HIV testing and counseling of TB patients so that they know their HIV status and can benefit from care and treatment programs, isoniazid preventive therapy to prevent the development of

TB disease among HIV-infected persons, and efforts to ensure that national TB programs and national AIDS control programs work in a coordinated and collaborative fashion.

IRPB has been working with the TB/HIV team at GAP on many activities, including (1) providing technical guidance to PEPFAR countries as they prepare their 1-year and 5-year strategic plans, (2) providing TB/HIV guidance to CDC participants in Core Team visits to initiative countries, and (3) participating in PEPFAR planning meetings on strategic information and building laboratory capacity. Along with GAP, IRPB also works with international partners to ensure that there is coordination with other global HIV/AIDS treatment initiatives, such as the "3 x 5" initiative (<http://www.who.int/3by5/en/>) recently proposed by the World Health Organization (WHO).

IRPB has undertaken a number of specific TB/HIV projects in several countries in conjunction with partners in GAP. These include the support of a TB/HIV research station as part of the BOTUSA Project in Botswana, <http://www.cdc.gov/nchstp/od/gap/countries/botswana.htm>. Current projects include a study of new diagnostic methods in children with both TB disease and HIV infection, a trial to evaluate the optimal duration of isoniazid preventive therapy, and an ongoing 3-year study to assess trends in the annual risk of infection using a new sampling methodology. IRPB staff are involved in establishing a pilot test of integrated TB/HIV activities at eight sites in Ethiopia. Plans are underway to design studies to evaluate the impact of nationwide ART programs in Botswana and Brazil on the epidemiology of TB in these countries. In Viet Nam, plans are underway to assess the referral mechanisms between the TB control program and the HIV program in two provinces.

IRPB will continue to work with GAP and other national and international partners to ensure that TB issues are included in PEPFAR and other global HIV/AIDS treatment initiatives.

—Reported by Lisa Nelson, MD
Div of TB Elimination

LABORATORY UPDATE

DTBE Announces the Tuberculosis Genotyping Program

On January 15, 2004, CDC began the Tuberculosis Genotyping Program to provide genotyping services to participating TB programs in the United States. CDC has contracted with two genotyping laboratories, one in Michigan and one in California, to provide these services. Participating TB programs may submit to a genotyping laboratory one culture-positive isolate from each patient with tuberculosis within their jurisdictions. In rare circumstances, TB programs may submit additional isolates from the same patient. The genotyping laboratories will analyze isolates from current patients, but TB programs may also request permission to submit selected isolates collected in the past. Although the implementation of universal genotyping (i.e., submitting one culture-positive isolate from every patient with TB) has substantial benefits, a TB program does not have to submit a particular number or percentage of isolates to participate in the program.

The genotyping laboratories will use three genotyping methods: spoligotyping, mycobacterial interspersed repetitive units (MIRU) analysis, and IS6110-based restriction fragment length polymorphism (RFLP) analysis. Spoligotyping and MIRU analysis are based on the polymerase chain reaction (PCR). Together, these methods will be referred to as PCR genotyping tests. The genotyping laboratories will analyze all the submitted isolates by both PCR genotyping tests. Under certain circumstances and upon the request of the TB program, isolates that have matching genotypes by both spoligotyping and MIRU analysis can be tested by RFLP analysis. Genotyping results, under most circumstances, will be reported to the TB program, but not to the submitting laboratories. The genotyping services are free to TB programs; they will only have to pay for the packaging and shipping costs.

Major benefits of genotyping. The research results of the National Tuberculosis Genotyping and Surveillance Network (NTGSN) and the application of genotyping by TB programs demonstrate that genotyping holds great promise to help TB programs reduce active transmission of TB. A special November 2002 issue of the journal *Emerging Infectious Diseases* was devoted to NTGSN's findings (Castro et al. 2002). The special issue of the journal is available at

http://www.cdc.gov/ncidod/EID/vol8no11/contents_v8n11.htm

NTGSN's research findings and the application of genotyping by TB programs demonstrate that, through genotyping,

- Contact investigations will be enhanced, expedited, and prioritized;
- Unsuspected relationships between cases and new and unusual transmission settings will be discovered;
- Outbreaks will be detected earlier and controlled more rapidly;
- Transmission that occurs between patients who reside in different jurisdictions will be detected more readily;
- False-positive cultures will be identified more easily;
- TB programs will be able to assess distribution and prevalence of *M. tuberculosis* strains; and
- TB programs will be able to evaluate completeness of routine contact investigations and progress toward TB elimination by monitoring genetic clustering as a surrogate marker of recent TB transmission.

In December 2003, Drs. Kenneth G. Castro, Director, Division of Tuberculosis Elimination, and Jonathan Kaplan, then Director, Division of AIDS, STD, and TB Laboratory Research, mailed an announcement of this new program to all TB controllers; copies were also sent to State Laboratory Directors. Accompanying the announcement was a booklet containing guidance on developing a TB genotyping program, and a description of how the genotyping would be performed and how results would be reported. The

booklet also contains instructions to TB programs about how to submit applications to participate.

The National TB Controllers Association and the CDC have formed an Advisory Group on Genotyping and will print and distribute a *Guide to the Application of Genotyping to Tuberculosis Prevention and Control* to help TB programs develop procedures for effectively using genotyping results for TB prevention and control. We expect the *Guide* to be available in the summer of 2004.

All of the 68 TB programs in the United States that have cooperative agreements with CDC are eligible to apply to participate in the CDC Tuberculosis Genotyping Program. As of June, 43 state and big city TB programs have applied and been approved to participate in the program. Following are the steps that are required to make an application:

- Obtain a copy of the CDC Tuberculosis Genotyping Program Application Instructions, as well as a copy of the application form, which are available on the TB WebBoard at <http://web.tb.forum.cdc.gov> under the folder "TB Genotyping."
- Read the booklet to become familiar with the Program.
- Send the application to the CDC Tuberculosis Genotyping Program by facsimile (fax) at 404-639-8959.

Applications will be reviewed to ensure that important steps, which are described in the booklet, have been planned. If you have questions about completing your application, contact Dr. Thomas Navin TNavin@cdc.gov or the CDC program consultant for your area. If you have laboratory questions, contact Dr. Jack Crawford at JCrawford@cdc.gov. When your application is approved, you will be informed where to submit your isolates.

—Reported by Jack Crawford, PhD,
Div of AIDS, STD, and TB Laboratory Research, and
Tom Navin, MD, MPH,
Div of TB Elimination

UPDATES FROM THE SURVEILLANCE,

EPIDEMIOLOGY, AND OUTBREAK INVESTIGATIONS BRANCH

Year in Review: TB Outbreak Investigations 2003

Like the previous year, 2003 was a busy year for the Outbreak Investigations Team (OIT) in DTBE's Surveillance, Epidemiology, and Outbreak Investigations Branch (SEOIB). During 2003, DTBE's Outbreak Evaluation Unit received 34 reports of TB outbreak activity. In response to these, at the local jurisdictions' request, the OIT conducted six on-site Epi-Aid investigations (five national and one international) and provided technical assistance in response to three other reports. The Field Services and Evaluation Branch (FSEB), the Communications, Education, and Behavioral Studies Branch (CEBSB), and the Clinical and Health Systems Research Branch (CHSRB) collaborated with OIT on these investigations.

The highlights of the year's outbreak investigations were the predominant outbreak investigations among homeless persons and the use of the QuantiFERON®-TB test (QFT) as part of a research protocol for detection of latent TB infection (LTBI) during large contact investigations and outbreaks.¹ The results of QFT use will be described later once the study is completed and data are analyzed.

During 2003, the OIT conducted three Epi-Aid investigations among homeless persons (in Seattle, Washington; Portland, Maine; and Wichita, Kansas). Although the three situations were similar in involving homeless persons, there were differences in the demographic characteristics and risk factors among these groups that warranted the use of a variety of innovative strategies by the epi-investigation teams to conduct detailed and thorough contact investigations.

The first of these investigations was conducted during May 2002–September 2003 in Seattle, Washington, where Public Health–Seattle-King County (PH-SKC) found 44 persons with outbreak-

associated TB. All but three of the outbreak-associated patients were homeless at the time of diagnosis; 43 (98%) were born in the United States, 34 (77%) were male, 21 (48%) were American Indian or Alaska Native, and 17 (39%) were black. Of the 38 (86%) persons with pulmonary disease, 23 (61%) had acid-fast bacilli detected on sputum smear at diagnosis. Seven (16%) outbreak-associated patients were also infected with human immunodeficiency virus (HIV). In January 2003, a CDC Epi-Aid team, along with PH-SKC, assisted in finding contacts at highest risk for exposure. Investigators reinterviewed outbreak patients and health care providers serving homeless facilities to find additional patient contacts. Sites of transmission were determined by review of homeless facility intake registries for the presence of persons with infectious TB disease and the rates of positive tuberculin skin test (TST) results among staff and clients. Exposed cohorts were found at three sites of transmission. The cohort prioritized for intensive testing included 385 contacts from three homeless facilities and 86 other contacts named by patients or health care providers. In February 2003, PH-SKC began an intensive effort to test the high-priority cohort for TB disease and LTBI in the TB clinic and at homeless facilities; this included symptom review, chest radiograph, sputum examination and culture, TST, and voluntary HIV counseling and testing. During February–September 2003, approximately 380 contacts were screened with chest radiograph or sputum culture or both. Of the 44 outbreak-associated patients, 20 were reported during this time, and 11 (55%) were found through these intensive and focused screening efforts, limiting the amount of time these persons were exposing others in the community.²

The second investigation was conducted in Portland, Maine, which is a low-incidence state. During June 2002–July 2003, seven men with pulmonary TB disease in Portland, Maine, were reported to the Maine Bureau of Health (MBH). Six were linked through residence at homeless shelters; four had matching genotypes. As of November 20, 2003, the investigation had found 1,069 contacts, 36 (3%) of whom reported having a positive TST result previously. Among the 1,033

persons eligible for a TST, 648 (63%) received at least one test, and 56 (9%) of these had a positive result; 15 (27%) of the 56 are receiving, and one completed, therapy for LTBI. A total of 163 (15%) contacts had chest radiographs; no additional active cases were detected. Delayed diagnosis and missed opportunities for TB prevention were determined to be major contributors for TB transmission. Prompt investigation and identification of contacts likely prevented further spread of TB.³

The third investigation was conducted in Sedgwick County, Kansas, where in 2003, TB genotyping detected a potential five-case cluster. Traditional name-based TB contact investigations had not revealed epidemiologic links. An Epi-Aid team conducted a targeted investigation in collaboration with the Sedgwick County health department to determine location-based links and the extent of transmission, and recommend TB control measures. Medical records were reviewed to determine TB patients' infectious periods, followed by reinterviews about their activities and locations while contagious. Homeless facilities' logs were reviewed to find common stays between contagious TB patients and other facility clients. Clients were divided into exposure categories according to number of common stays. Location-based contacts received TB screening, including a TST. TB genotyping provided the impetus to investigate locations linking the patients in this cluster. The investigation determined plausible transmission sites and directed the county's TB control strategies, which now include mandatory TB screening at all homeless facilities.

As the TB control community collectively moves towards TB elimination in the United States, it is important to remember that TB is receding back into the traditional "pockets" of infection as evidenced by the TB outbreaks among homeless persons described above. These and other high-risk, hard-to-reach populations will provide challenges to all of us. We should remain vigilant and closely monitor TB control efforts, especially in population groups at high risk for TB. Moreover, we all face the additional challenge of reduced public health resources. It is now more important than

ever for public health organizations at the local, state, and national levels to continue to work closely together against TB. Health departments may request DTBE assistance with outbreaks, cluster investigations, or other instances of TB transmission by contacting their DTBE Program Consultant. Such assistance may take the form of programmatic consultation, technical assistance, or on-site assistance (for example, an Epi-Aid). Your partners in DTBE are eager to work with you to achieve our common goal of TB elimination.

—Reported by *Kashef Ijaz, MD, MPH*
Div of TB Elimination

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Effective Oral Communications and Successful Scientific Writing: Training for Public Health Scientists, Faculty, and Students in Ethiopia

Do you think it is important to communicate effectively? Well, so does Dr. Tadesse Wuhib (EIS '96), CDC/Global AIDS Program (GAP) assignee and country director for CDC/GAP's activities in Ethiopia. As a part of his mission, Dr. Wuhib recognized that little capacity existed among public health scientists, faculty, and students in Ethiopia to communicate important public health messages orally and to publish their work in the peer-reviewed literature, even among those who speak English well. Further, he recognized that the current journal for communicating public health information — the *Ethiopian Journal of Health Development*, published by the Ethiopian Public Health Association (EPHA) — required a new look, including a new publication plan, vision, and format.

Public health advocacy can be an effective tool for mobilizing public health action and setting priorities, including budgetary decisions. It has an impact on policy and facilitates appropriate decision-making. Further, it should be incorporated into public health academic training programs from the outset. Students need training in public health advocacy, especially as it relates to issues involved in effective oral presentation and successful scientific writing and the publication of scientific findings.

To this end, Dr. Wuhib invited me to "institutionalize" in Ethiopia the course that Ms. R. Elliott Churchill and I teach at the Emory University Rollins School of Public Health, titled *Applied Public Health Advocacy: Effective Oral Communications*. His vision was to establish capacity within the EPHA to provide this training in the future to enable public health scientists, faculty, and students to improve the quality of their oral scientific communications and their manuscripts.

The goals of the two short-term consultancies in 2003 to Ethiopia were to

1. Establish a trained cohort of Ethiopian public health scientists and faculty in oral communications and scientific writing;
2. Develop the capacity so that the trained cohort could both deliver and teach others to give high-quality oral communications and scientific writing;
3. Establish a coordinator position at the EPHA;
4. Complete the revisions of the monthly journal.

The core element of this capacity development effort included a 2-week training module (80 contact hours) that was designed to convey the principles and practice of dynamic and persuasive techniques for oral communication and successful scientific writing. Dr. Paul Siegel, Ms. R. Elliott Churchill, and I served as faculty. All of us currently teach in the areas of public health communications. We used a *train-the-trainers* approach that enhanced the ability of the student-faculty participants to participate in critiques of good and bad presentations provided by us. This also allowed for exercises to be conducted by small working groups of participants that facilitated participation by all trainees and provided a sense of reality in the discussion and preparation of sample

presentations on assigned topics. During the first week (40 contact hours), instruction in specific areas of oral communication included hands-on workshops (e.g., class presentations and videos). The second week (40 contact hours) focused on successful scientific writing.

We hope and believe the capacity was developed. We have planted the seed, and we will know if it grows to fruition if the trainees begin to conduct the training themselves in the six medical schools and schools of public health. Stay tuned ...

—Submitted by Scott JN McNabb, PhD, MS
Div of TB Elimination

Effective Oral Communications and Scientific Writing Class, Nazareth, Ethiopia, July 2003



National Surveillance for Severe Adverse Events (Hospitalization or Death) Associated with Treatment of Latent Tuberculosis Infection

Between October 2000 and December 2003, DTBE received reports of 49 patients with severe adverse events associated with the use of the 2-month regimen of rifampin and pyrazinamide (RZ) for the treatment of latent tuberculosis infection (LTBI); 12 (24%) of the 49 patients died. In addition, since January 1, 2004, DTBE has received two reports of serious adverse events for patients started on therapy (RZ=1 and isoniazid=1).

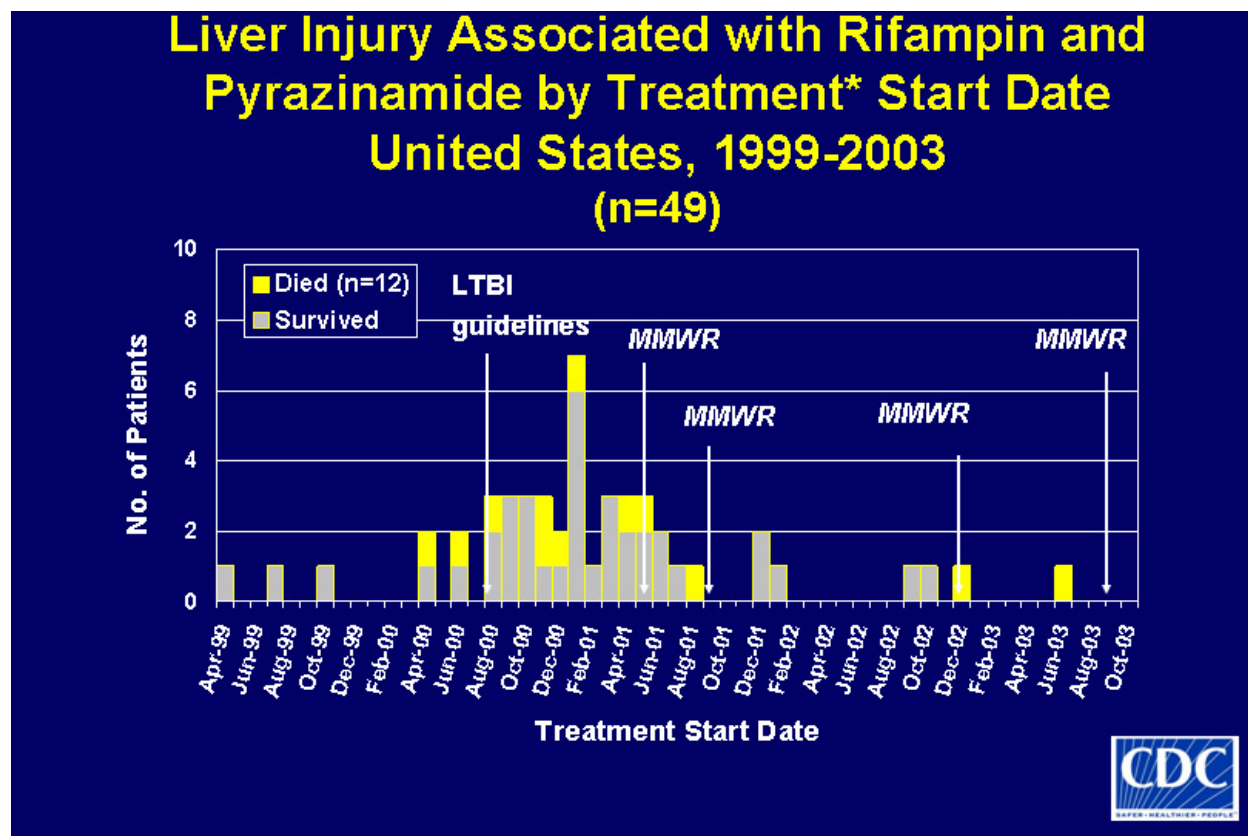
A severe adverse event is defined as hospitalization or death of a person receiving treatment for LTBI.¹⁻⁴ On the basis of these data, the American Thoracic Society and CDC recommended that RZ should generally not be offered for treatment of persons with LTBI, regardless of HIV status.⁴ Rifampin and pyrazinamide should continue to be administered in multidrug regimens for the treatment of persons with active TB disease.⁵

To better estimate the incidence of severe adverse events (hospitalization or death) associated with any treatment for LTBI in the United States, DTBE

is developing a national surveillance system. Surveillance of such events will provide data to support further revisions of guidelines, if deemed necessary, for treatment of persons with LTBI. To facilitate this surveillance system, DTBE requests that health care providers and health departments report any hospitalization or death related to any treatment for LTBI to Lilia Manangan in the

Surveillance Team; Surveillance, Epidemiology, and Outbreak Investigations Branch; DTBE, CDC; telephone number: 404-639-8401 or email: ljm2@cdc.gov.

—Reported by Lilia Manangan, RN, MPH
Div of TB Elimination



*For latent tuberculosis infection (LTBI).
LTBI guidelines: see reference 6 below.

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TBESC Update

The 4th semiannual meeting of the TB Epidemiologic Studies Consortium (TBESC) was convened November 20-22, 2003, in San Francisco, California. The goals were to inform participants of progress in TBESC research activities, discuss implications of the Health Insurance Portability and Accountability Act of 1996 (HIPAA) and a centralized institutional review board (IRB) process, elect members for the three newly established TBESC committees, establish the Diagnostics and TBESC Performance Standards Workgroups, and enhance participants' budgetary, fiscal, and research skills.

There were over 90 attendees. CDC staff, TBESC members, and guest speakers gave presentations about proposed or ongoing task orders, administrative issues, and other activities related to TB research. Presentations were given on the following topics:

- Updates on Task Orders 1-14
- TBESC Data Management System
- Sampling Methods for Population-Based Epidemiologic Studies
- Westat Update
- TBESC Proposed Performance Standards
- HIPAA Issues: Programmatic and Research
- Effective Task Order Planning
- Outcome of TB Leads
- Bylaws Update
- Communications: eRoom and TBESC Web site
- Research Committee Update
- TBTC Update
- New Committee Reports

Attendees also provided input during small group or breakout sessions addressing the following topics:

- TB Diagnostics
- Fiscal issues
- Research related to current and future task orders

- New committees (External Relations, Publications and Presentations, and Process Evaluation)

The meeting was very productive. Our next steps include continuing with the research involved in the current task orders, developing a Data Management and Communications System (DMACS) for TBESC, moving forward with Phases II and III of Task Order #13, establishing the Diagnostics Workgroup, developing research concepts for TB Leads, and facilitating the coordination of IRB activities.

April Meeting

The 5th semiannual meeting was held April 28-29, 2004, in Atlanta at the Westin Peachtree Plaza. Details regarding the meeting will be forthcoming.

*—Reported by Viva Combs, MPH
Division of TB Elimination*

NEWS BRIEF

The new Treatment of TB PDA application is highlighted on the ATS Website under Palm Tips at <http://www.thoracic.org/palm/tips/tips0604.asp>. An announcement about the application was also included in the June ATS Website Bulletin. DTBE staff are currently looking into the feasibility of developing a Pocket PC version.

TRAINING AND EDUCATIONAL MATERIALS

Products from the New Jersey Medical School National Tuberculosis Center

The following are new and updated products from the New Jersey Medical School National TB Center. All of these products may be accessed from the Center's Web site at <http://www.umdnj.edu/ntbcweb> or by calling (973) 972-0979.

Facility TB Profile for Targeted TB Testing and Treatment of Latent TB Infection: This Web-based

product will help health departments identify facilities in their communities where targeted TB testing and treatment of LTBI are most likely to be successful and efficient. Through the use of a Facility TB Profile questionnaire, TB programs can determine for each facility

- The estimated level of TB infection and TB risk factors among clients served by the facility;
- Current TB testing, follow-up, and treatment practices for LTBI; and
- Potential capacity for strengthening onsite targeted TB testing and treatment of LTBI activities.

The product includes guidelines for identifying specific facilities to which the Profile should be sent, instructions for completing the Profile, formats for displaying data for analysis, and suggestions for translating data into action. Built into the PDF document are Word and Excel versions of forms and spreadsheets that can be tailored for local use.

Treatment of Tuberculosis – Standard Therapy for Active Disease in Adults (Update): This pocket-sized card for clinicians provides information on standard anti-TB therapy for active disease, including dosages, daily and intermittent regimens, side effects, treatment information, and pictures of first-line drugs. The card is based on the 2002 Official Joint Statement of the American Thoracic Society, CDC, and the Infectious Diseases Society of America. A card on pediatric therapy is due out later this year.

Management of Latent Tuberculosis Infection in Children and Adolescents – A Guide for the Primary Care Provider (Updated Handbook and Wall Chart): This handbook provides pediatric primary care providers with an overview of the most current recommendations for targeted tuberculin testing and treatment of LTBI. It offers suggestions for managing patients under special circumstances and for achieving the best patient outcome. Supplemental information, found in the appendices, include guidelines for administering and interpreting the tuberculin skin test (TST), adherence strategies, a list of high-burden countries, and

sample letters for documenting TST and LTBI treatment completion. A laminated wall chart accompanies the handbook. It summarizes key points regarding tuberculin skin testing and treatment of LTBI in the pediatric population. Both documents have been revised to reflect changes in the American Academy of Pediatrics *2003 Red Book: Report of the Committee on Infectious Diseases*.

Planning & Implementing a TB Case Management Conference: The case management conference provides a forum for networking, peer support, and ongoing training to improve staff expertise in TB control interventions. This manual is a step-by-step guide for developing and conducting the case management conference. It includes guidelines for the conference coordinator, presenters, and moderator in the form of "to-do" checklists, sample letters, a presentation template, and evaluations. The sample forms and letters, as well as the template for presentation, are also available electronically in a modifiable format on a CD-ROM that accompanies the manual.

Mantoux Tuberculin Skin Test Training Resource: This guide outlines the steps in planning and conducting a skin test training program. It provides an opportunity for health care workers who are proficient in targeted testing to share their knowledge and skills with others, which can be done by presenting a full-length or abbreviated skin testing training workshop to a group of peers, or instruction to a single individual. The resource includes general information on TB, sample forms, test questions, evaluations, and PowerPoint slides. The format of this resource is an online product available as a PDF file. The forms and sample materials can be accessed using links contained in the PDF and may be modified as needed.

—Submitted by Rajita Bhavaraju,
Chris Hayden, Anita Khilall, and DJ McCabe
NJ Medical School National Tuberculosis Center

Developing and Presenting TB Control Training Courses Toolbox

The Francis J. Curry National Tuberculosis Center

(CNTC) has just released a new training product. This TB training and education toolbox CD (WPT-06D) provides users with tools and step-by-step implementation guides to develop and implement TB trainings for clinicians and other health workers. Users will learn how to

- Develop specific timelines for trainings
- Conduct needs assessments to determine training needs
- Create agendas, syllabi, slides and other course materials
- Handle training logistics and faculty recruitment
- Issue CE or CME units to course participants

The materials included with the toolbox consist of sample correspondence, agendas and timelines; slide templates, and course outlines. These materials are provided on a CD or can be downloaded via the CNTC website. Visit www.nationaltbcenter.edu to order this product.

—Submitted by David Berger
Francis J. Curry National TB Center

NEW CDC PUBLICATIONS

CDC. Trends in Tuberculosis – United States, 1998-2003. *MMWR* 2004;53: 209-214.

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PERSONNEL NOTES

Carrie Bridges, MPH, has joined DTBE/FSEB as a Public Health Prevention Service fellow. Through mid-August, she will primarily be working with Maureen Wilce and Mark Lobato on efforts related to the Evaluation Work Group. Prior to coming to NCHSTP, Carrie worked in NCID's Division of Healthcare Quality Promotion on the Campaign to Prevent Antimicrobial Resistance in Healthcare Settings. Atlanta is just the latest stop on Carrie's tour of the contiguous 48. Before moving to Atlanta, Carrie worked and studied in Boston, Massachusetts, where she earned her MPH at Boston University with a concentration in International Health. Prior to her time in Boston, Carrie was teaching 5th, 7th, and 8th graders in Phoenix, Arizona, a significant environmental change from North Carolina, where she grew up and attended college.

Allan Cavazos has left DTBE for a position as an Information Technology (IT) Security Analyst with the Lockheed Martin Corporation (assigned to CDC/IRMO). His last day with the division was April 16, 2004. Allan served DTBE with 8 years of

dedicated, friendly, and highly professional technical assistance to the DTBE staff. He was very instrumental in establishing a culture of user-centric technical support in the Division, a baseline that is now being used as a standard as we transition to a different model of IT support. He will be greatly missed, but we trust that he will remain close as he continues to grow in knowledge and skills.

Ann Cronin has accepted the position of Associate Director for Management and Operations (ADMO), DTBE. Ann brings extensive grants experience from the National Institute of Occupational Safety and Health (NIOSH), and more recently, valuable policy experience from the Division of Sexually Transmitted Diseases Prevention (DSTDP). Her experience is a perfect match for the needs of our ADMO position. Ann reported to DTBE on May 17.

Tara Hurley, Program Operations Assistant, FSEB, transferred to DHAP in early March. Tara had been assigned to the Field Operations Team I where she handled time and attendance, and programmatic work for Field Operations Team I. Before coming to DTBE, Tara was a member of CDC/PGO's contracts unit. In her new position as the Program Operations Assistant for the Division of HIV/AIDS Prevention (DHAP)-SE, Behavioral and Clinical Surveillance Branch, she is kept busy as the primary assistant for two sections within the branch. She is considered the expert on travel for the branch, handles Small Purchases/IMPAC for the branch, and coordinates and schedules branch conferences, in addition to other administrative tasks.

Kate O'Toole, MPH, has left DTBE after having been hired as vice-president for Z-Tech in their new Atlanta-based office. Z-Tech is a Baltimore-based firm which provides personal and other contractual services to CDC and other government agencies. While this decision was extremely difficult, Kate has accepted the offer because of the opportunities and new challenges that come with it. Her last day at CDC was March 19, 2004.

Noreen Qualls, DrPH, MSPH, was selected as the NCHSTP Scientific Review Administrator in the Office of Director, National Center for HIV, STD,

and TB Prevention (NCHSTP). She will be working with the NCHSTP Associate Director for Science to establish processes for and to oversee external peer reviews. Noreen began serving in this position on March 22, and will be responsible for the Center's external peer review process of new research contracts, cooperative agreements, and grants. Noreen joined DTBE in mid-July 1997 as a Health Policy Analyst on what is now known as the Health Systems Research Team in the Clinical and Health Systems Research Branch, and served as the Team Chief on a permanent basis beginning in October 2001. While in DTBE, Noreen conducted a number of decision and economic analyses related to contacts, foreign-born persons, and TB suspects and provided prevention effectiveness training courses for state and local disease control staff members in California, Maine, and South Carolina. During the past year, she was heavily involved in conceptualizing and developing an evaluation project of CDC-funded targeted testing and treatment of LTBI programs. Noreen also co-mentored a number of fellows, interns, and students while in the Division.

Lee Sallis of the Information Technology and Statistics Branch has left the division for a position outside CDC. Since April 16, 2001, when Lee joined the DTBE LAN Support Team, he provided friendly and professional technical assistance to our DTBE staff. We are most grateful for his contributions in establishing a culture of user-centric technical support in our Division. From the very outset, it was very easy for Lee to understand and apply the principle that IT serves a program purpose, that is, IT should facilitate the accomplishment of our CDC/NCHSTP/DTBE mission. As a dedicated IT professional loyal to his Program mission, Lee served as an outstanding example of polite, timely, and accountable user support. As a result of the recent changes in the IT infrastructure support at CDC and of Lee's own career development plans, he decided to move on and accepted a position as an Informatics Consultant in a Fortune 500 company located in midtown Atlanta. His last day at CDC was March 12, 2004.

Andrew Vernon, MD, is welcomed back to DTBE with his selection for the position of Chief, Clinical and Health Systems Research Branch (CHSRB), the position most recently held by Rick O'Brien, MD. As he assumes the CHSRB chief position, he will be following in the footsteps of a small but distinguished coterie of individuals who have led that branch, including Dr. Rick O'Brien, who held the position from 1982 to 1991 and again from 1996 to 2004; Larry Geiter, who served as chief from 1991 to 1996 while Rick was seconded to WHO; and Dr. Dixie Snider, who became chief of the Research Branch in 1976. For the past 18 months Andy has been serving as the Associate Director for Science for the National Center for HIV, STD, and TB Prevention. During his tenure as NCHSTP ADS, Andy was a guiding force on a wide range of scientific issues for the Center. Some of his many contributions include initiating the Center's peer review activities, coordinating ethical consultations on numerous high profile issues, strengthening the Centers human subjects protection activities, supporting NCHSTP EIS activities, advocating for scientific excellence, as well as maintaining his own scientific, teaching, and clinical portfolios. For example, Andy continues to provide medical services for patients with TB/HIV in Atlanta at the local Ryan White clinic. Prior to his assignment as NCHSTP Associate Director for Science, he served with distinction as the team leader for the TB Trials Consortium in the CHSRB.

CALENDAR OF EVENTS

July 7-9, 2004
 TB Nurse Case Management Course
 Ft. Myers, FL
 Florida Dept. of Health
 Bureau of TB and Refugee Health
 Website for information and to register:
www.doh.state.fl.us/disease_ctrl/tb

July 13-15, 2004
 TB Intensive
 San Francisco, CA
 Francis J. Curry National TB Center

Website for information and to apply:
http://www.nationaltbcenter.edu/catalogue/training_courses.cfm

July 28-30, 2004
 Florida Corrections TB Program
 Polk County, FL
 Florida Dept. of Health
 Bureau of TB and Refugee Health
 Website for information and to register:
www.doh.state.fl.us/disease_ctrl/tb

August 11-13, 2004
 TB Education and Training Network (TB ETN) 4th
 Annual Conference
 Atlanta, GA
 TB Education and Training Network
 Conference will be held at the Sheraton Colony
 Square Hotel
[\(http://www.sheratoncolony.com/\)](http://www.sheratoncolony.com/), 188 14th
 Street NE, Atlanta, Georgia.
 Register online at
<http://www.cdc.gov/nchstp/tb/TBETN/conference.htm>.

September 20, 2004
 AG Holley TB Skin Test Trainers Course
 Lantana, FL
 Florida Dept. of Health
 Bureau of TB and Refugee Health
 Website for information and to register:
www.doh.state.fl.us/disease_ctrl/tb

September 20-24, 2004
 AG Holley Clinical Course
 Lantana, FL
 Florida Dept. of Health
 Bureau of TB and Refugee Health
 Website for information and to register:
www.doh.state.fl.us/disease_ctrl/tb

October 13-15, 2004
 TB Nurse Case Management Course
 Gainesville, FL
 Florida Dept. of Health
 Bureau of TB and Refugee Health
 Website for information and to register:
www.doh.state.fl.us/disease_ctrl/tb

November 2-5, 2004
 TB Case Management and Contact Investigation
 San Francisco, CA
 Francis J. Curry National TB Center
 Website for information and to apply:
http://www.nationaltbcenter.edu/catalogue/training_courses.cfm

November 3-5, 2004
 Statewide TB Meeting
 Tallahassee, FL
 Florida Dept. of Health
 Bureau of TB and Refugee Health
 Website for information and to register:
www.doh.state.fl.us/disease_ctrl/tb

November 15-16, 2004
 First-Line Supervisor's Course
 Newark, New Jersey
 New Jersey Medical School National TB Center
 For more information, contact Lauren Moschetta
 Tel: (973) 972-1261 or e-mail:
moschelb@umdnj.edu
 Web site:
http://www.umdnj.edu/ntbcweb/et_frame.html

December 6-10, 2004
 AG Holley Clinical course
 Lantana, FL
 Florida Dept. of Health
 Bureau of TB and Refugee Health
 Website for information and to register:
www.doh.state.fl.us/disease_ctrl/tb

December 13, 2004
 AG Holley TB Skin Test Trainers Course
 Lantana, FL
 Florida Dept. of Health
 Bureau of TB and Refugee Health
 Website for information and to register:
www.doh.state.fl.us/disease_ctrl/tb

TB Education and Training Materials Submission Request

Please mail, fax, or e-mail completed request to the CDC National Prevention Information Network (NPIN), Attn: Manager, PO Box 6003, Rockville, Maryland, 20849-6003; fax: 301-562-1050; e-mail: info@findtbresources.org. For additional information call 800-458-5231 and press "1" for reference and referral staff who will direct your call.

Title of Material:			
Language:		Country of Origin:	
Author:		Date of Publication:	
Available From (organization that distributes the material):			
Contact/Ordering Information: (address, telephone, e-mail)			
Web Site Address (if applicable):			
Cost of Material:		Continuing Education Credits Available:	
Material Format: Please circle the most appropriate format			
Audiotape Bibliography Book Booklet Brochure/Pamphlet CD-ROM Coloring Book Comic Book	DVD Fact Sheet Flipbook Game Guideline Information Card Information Kit Journal	Manual Module Newsletter Online Course Online Resource Photo Novella Pocket Guide Poster/Wall Chart	Promotional Item Report Slide Set Study Guide Teaching Guide/Training Curriculum Tool Videotape
Target Audience: Please circle the appropriate target audience(s)			
Advocates African Americans Asians/Pacific Islanders Business and Labor Organizations Children/Adolescents Civil Surgeons Community Leaders Correctional Personnel Foreign-born/Immigrant General Public	Government Agencies Health Educators/Communicators Health Professionals Hispanics Homeless Infection Control and Occupational Health Workers Inmates International Agencies Lab Personnel	Long-term Care Residents Long-term Residential Care Providers Managers and Supervisors Medical and Nursing School Students Migrant Workers Native Americans Nurses Outreach Workers	Parents Persons with HIV/AIDS Persons with LTBI Persons with TB Physicians Policy Makers Social Service Providers Substance Abusers
Topic Area: Please circle the appropriate topic area(s)			
Advocacy/Communications BCG and Other Vaccines Case Management Children Comprehensive TB Materials Contact Investigation • Interviewing Corrections Cultural Competence Diagnosis • Chest Radiographs • Culture Examination • Laboratory Procedures • Screening	<ul style="list-style-type: none"> • Skin Test • Skin Test Practice Arms • Skin Test Rulers • Sputum Smear Examination Extrapulmonary TB Foreign-born/Immigrant General TB Information Guidelines, Policies, and Protocols History of TB HIV/AIDS Co-infection Homeless Persons Infection Control <ul style="list-style-type: none"> • Engineering Controls • Health Care Workers • Respiratory Protection 	Long-Term Care Facilities Managed Care Migrant Workers Multidrug-resistant TB Outbreaks Partnership Building Pregnant Women Program Evaluation Program Management • Directly Observed Treatment, Short-Course (DOTS) • DOTS-Plus	Racial/Ethnic Minorities Schools/Universities Shelters Substance Abuse Facilities Surveillance Training and Education Treatment • Adverse Reactions • Directly Observed Therapy • Latent TB Infection • Medication Information • Patient Adherence • TB Disease Workplace Settings
Please list format, audience, or topic area for your material if the appropriate option is not listed above:			
If your document is available electronically, please e-mail it to info@findtbresources.org . Thank you for your assistance.			

