



Dear Colleague:

As you know by now, certain changes are being planned for the next round of cooperative agreements. The Field Services and Evaluation Branch (FSEB) and our TB control partners are formulating appropriate guidance for the recompetition of the TB cooperative agreement in FY 2005. The FY 2005 cooperative agreement will most likely de-emphasize targeted testing to ensure that persons with TB and their contacts are identified and treated. The changes will place more emphasis on TB health disparities, foreign-born populations, and other special groups. Efforts will be made to distribute funds based on disease burden and local needs.

Please mark your calendars: June 9-11, 2004, has been set for the 2004 National TB Controllers Workshop, to be held in Atlanta, Georgia. Further details will be provided to you as they become available.

Division of TB Elimination (DTBE) staff have been very busy attending as well as organizing many meetings in recent weeks and months. Rather than recount all of the events, I will highlight a few items. On September 24 and 25, CDC staff met with representatives of other federal agencies in Bethesda, Maryland, for a face-to-face meeting of the Federal TB Task Force (TBTF). The TBTF was formed in 1991 in response to the resurgent TB epidemic of the late 1980s and early 1990s. Most recently, the TBTF has focused its attention on the Institute of Medicine (IOM) report *Ending Neglect: the Elimination of Tuberculosis in the United States*. Just as CDC developed and published its response to the IOM report, the TBTF has collaborated in the preparation of a federal response to the IOM report. An initial printing of that publication was presented to TBTF members at the meeting, and additional copies first became available from the printer on December 10, 2003. These will be distributed to the various federal agencies and to our partners, the National TB Controllers Association (NTCA), the National Coalition for the Elimination of TB (NCET), the American Lung Association (ALA), and Results International.

On October 1 and 2, the Advisory Council for the Elimination of Tuberculosis (ACET) met in Atlanta. Many long-time members have rotated off the Council and have been replaced by new members. A roster reflecting the new membership is attached at the back of this issue. We learned from Dr. Harold Jaffe, Director of the National Center for HIV, STD, and TB Prevention (NCHSTP), that the Division of AIDS, STD, and TB Laboratory Research (DASTLR) was administratively transferred to NCHSTP on October 1, 2003. We heard reports on the continuing challenges of TB control in jails, then devoted the rest of the day to discussions about the numerous projects and activities of CDC and our partners regarding TB in foreign-born persons. The next day

Dr. Zach Taylor gave updates on targeted testing projects, announcing that because of

deficiencies in the TB budget, most of the funding for the cooperative agreement targeted testing and treatment projects will be redirected to other priority activities. We also heard status reports on the revised infection control guidelines (to be

published in 2004) and the Strategic Plan for TB Education and Training, whose continuation is also threatened by inadequate funding. For more information on the ACET meeting, please see the summary in this issue.

A number of DTBE staff also attended the 34th World Conference on Lung Health, sponsored by the International Union Against TB and Lung Disease, from October 29 to November 2, 2003, in Paris, France. Almost 16,000 participants from 120 countries attended the event. We heard international experts speak on the recent epidemic of severe acute respiratory syndrome (SARS), the increasing burden of human immunodeficiency virus (HIV) infection on TB control, the value of nutrition in lung health, and the importance of continued and increased funding to sustain TB control. We all came away with a renewed sense of commitment and dedication to the global fight against tuberculosis.

As this calendar year comes to an end, I extend my best wishes for a healthy and productive 2004. I am grateful for your ongoing commitment.

Kenneth G. Castro, MD

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

HIGHLIGHTS FROM STATE AND LOCAL PROGRAMS

Missed Opportunity and Diagnostic Delays Lead to Multiple Secondary Cases

On July 11, 1994, a 34-year-old African-American female presented to the local health department with a complaint of productive cough, chest pain, weight loss, fatigue, and difficulty breathing. She indicated that she was a contact of a previously reported TB case patient; however, the case patient had not named her as a contact. Her tuberculin skin test (TST) result was 28 mm with blistering. Her chest x-ray was read as "abnormal - not TB." Sputum specimens were collected and submitted for smear and culture, with all results negative for AFB. After she failed to return to the clinic for her final culture results, clinic staff attempted to contact her, by telephone and then by letter, to refer her to her private physician for further evaluation. She did not respond, and her file was closed to public health follow-up. In retrospect, we now realize that the health department's action in closing her case without consideration of preventive therapy constituted a missed opportunity.

Missed opportunities like the one detailed above have been observed in many areas of the United States, and represent some of the most painful lessons learned by field staff. However, another missed opportunity is the failure to diagnose TB in a timely manner, thus delaying initiation of field activities designed to interrupt transmission of TB. To illustrate this point, please consider the rest of the story, which involves

the same patient 8 years later.

On August 27, 2002, the patient (by then 42 years old) reported to the emergency room of Hospital A, a moderately sized regional medical center. The patient complained of headache and a severe cough, stating that she had experienced these symptoms before. The physical exam revealed pharyngeal erythema, lymphadenopathy, and a purulent nasal discharge. The patient was diagnosed as having sinusitis, and was sent home with Bactrim (sulfamethoxazole-trimethoprim), prednisolone, and a cough suppressant. Total time for the visit was 2 hours and 24 minutes.

Three months later (on November 21, 2002), the patient returned to the emergency room of Hospital A. She complained of a 4-month cough, fever, chills, nausea, and vomiting. The physical exam revealed wheezing and pharyngeal erythema. A nursing note also documents that the patient reported having a sore throat. A chest x-ray was done at this visit, and the report reveals "Extensive infiltrates throughout the left lung. An area of cavitation is seen in the left upper lung field ... there has been a significant change compared with the older study of 8/31/01."¹ The patient was diagnosed with bronchitis and sent to the respiratory therapy department for breathing treatment with a bronchodilator. A note from the respiratory

¹ A search for records associated with an emergency room visit or hospitalization on 8/31/01 was initiated. Only the chest x-ray report was available for review. This report revealed left lung abnormalities as well, and that a "CT scan is suggested for evaluation of a possible nodule." No CT scan was obtained.

therapist states that “the patient tolerated treatment with no complications.” The patient was then sent home with a cough suppressant. Total time for this visit was 5 hours and 38 minutes.

Shortly after her second emergency room visit in Alabama, the patient traveled to Texas with her adult son, his wife, and their four children. Patient and family made this 12-hour road trip in a passenger van. Approximately 1 month later (on January 9, 2003) the patient reported to Hospital B in Texas. According to the patient, the emergency room staff released her with a presumptive diagnosis of the flu. Two weeks later, the patient returned to the emergency room at Hospital B and was diagnosed with pulmonary TB. The local health department was notified, and TST results were positive for the adult son, his wife, and their four children. All six were placed on preventive therapy by TB control staff in Texas.

Information regarding the index case’s diagnosis followed two separate tracks. The adult son in Texas notified the two adult daughters (residents of Alabama), and urged them to report to the health department. The State of Texas also reported the identification of this index case via the Interstate Reciprocal Notification process. Upon notification of their mother’s TB diagnosis in Texas, the two adult daughters in Alabama reported to the local health department for evaluation. A contact investigation was initiated, resulting in the identification of eight secondary cases of TB, seven of which were found in children ranging in age from 1 to 11 years. Two of the child contacts were confirmed as cases via gastric aspirate, and the remaining five all met the clinical case definition for TB. The eighth secondary case was identified as the son-in-law of the index case, and was confirmed by culture. All cases in this cluster are pansensitive. An additional 11 contacts in Alabama were identified with latent TB infection: six adults and five children who were 4 years of age and younger. All of these contacts were placed

on preventive therapy.

Discussion

Missed opportunities and diagnostic delays facilitate transmission of tuberculosis and the development of secondary cases. This is not a new phenomenon, yet discussion of this problem generally focuses on failures in the contact investigation. As evidenced by the public and private response in Texas, contact investigations are more likely to be successful in preventing disease when TB is suspected and diagnosed early. Public and private providers must “think TB.”

This case study reinforces a proposal made by Alabama’s Division of TB Control in December of 2002. At that time, the Division’s first Annual Training Plan was prepared and submitted for review. While Alabama has long supported training for TB field staff, the Annual Training Plan includes two new goals: provider education and expansion of the basic training (e.g., TB 101) to include community partners such as emergency room staff, infection control practitioners, and others.

We are pleased to report that one of these goals (expansion of basic training) will be achieved this year. Our TB 101 class has been opened to community partners from the Alabama Sheriffs Association, the Alabama Department of Corrections, and infection control practitioners. We continue to work toward our second goal of “provider education,” and are confident that these training efforts are both achievable and sustainable.

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Implementing Cohort Review in Washington State

Background

The cohort review method has been synonymous with New York City and its successful increase in TB treatment

completion rates, which over time has contributed to a sustained reduction in the number of TB cases. Starting in 2002, the Washington (WA) State Department of Health TB Program explored the feasibility of implementing cohort review at the state level. Foremost in the minds of program staff was the question: Why should we take on this challenge when we are already swamped with other work and are already doing a pretty good job with oversight of our cases? The methods, including staff motivation, that were used to take on this challenge will be described in this article. In a subsequent article, lessons learned and the outcomes stemming from implementation of cohort review in WA State will be discussed.

General Information about the Cohort Review Process in New York City

Cohort review is a systematic review of patients with tuberculosis (TB) disease and their contacts. A “cohort” of patients from a specific period of time (usually 3 months) is reviewed in terms of individual patient outcomes and program performance. Thus it is a management process used to motivate staff, identify program strengths and weaknesses, determine staff training and professional education needs, and hold staff accountable for completion of treatment for both TB disease and latent TB infection (LTBI).

Case managers know that their day-to-day efforts will be reflected in the cohort review several months later and that they are accountable for the services they provide. The review also allows clinical staff to ask expert clinicians and managers about patient care. Most important, when cohort reviews are being conducted, patients are less likely to “fall through the cracks” and receive inadequate care. Since cohort reviews began in New York City, the treatment completion rate there has increased from less than 50% to 93%. The components of the cohort review process are highlighted below.

- Case management – Every patient reported as a TB case is assigned to a case manager, whether he or she is seen at a health department clinic or in the private sector. Case managers are responsible for ensuring that patients adhere to treatment, comply with medical visits, and complete treatment. Case managers are also responsible for making sure that contacts are identified and evaluated, and complete treatment for LTBI, if appropriate.
- TB registry – Each patient’s case is documented in a computerized database of information about all persons with suspected or confirmed TB disease and their contacts. This could be the TB Information Management System (TIMS) or a locally developed database, which gives the “universe” or cohort of patients to be reviewed.
- Supervision and teamwork – Supervisors provide timely review and assistance to the health team. Through periodic reviews, they make sure there are no loose ends in managing each case. Case managers coordinate efforts of the clinical team and the outreach workers who identify contacts, do skin testing in the field, refer infected contacts to clinics, and return missing patients to service.
- Preparation – Supervisors and case managers prepare the case reviews to be presented by participating in biweekly reviews and a 2-month review by the medical manager. These periodic reviews ensure that all the case details are in place, from initial interview to compliance with and completion of treatment to contact investigation. Staff also get a chance to develop their presentation skills.
- Presentation – Case managers follow a specific format in presenting detailed information about each case

(demographics, site of disease, bacteriology, radiology, treatment, adherence, completion, contact investigation). The director and medical manager have an opportunity to ask pertinent questions, which are clarified by the case manager, supervisors, or colleagues.

- Review – Based on the case reviews, data about outcomes and programmatic indicators are tallied manually or by spreadsheet. The results are summarized to provide a “report card” for that quarter’s TB control efforts.
- Follow-up – After the cohort review session, staff update the registry, address problems that were identified, prepare a summary report for managers, provide medical consultation as needed, and develop staff training if such needs were indicated.

Why Cohort Review in WA State

Cohort review has been successful in New York City, but are there enough compelling reasons for implementing it in Washington State? Would it make a difference in a medium-morbidity setting that is geographically much larger than one metropolitan jurisdiction? Would it be a huge effort to undertake -- and for what gain? All of these questions were discussed and debated before the decision was made to begin implementation of this process.

In 2002, WA State reported 252 cases with a case rate of 4.1 per 100,000 persons, representing a 5% decrease in the state case rate as compared with 2001 (4.3 per 100,000). In addition to the WA State TB Program Manager, there are two Nursing Consultants who are responsible for oversight of cases in the northern and southern regions of the state. The Nursing Consultants provide oversight of TB cases and technical consultation to the local health jurisdiction staff who provide direct management of TB cases. Oversight is not

provided by the Nursing Consultants for the TB Program in Seattle & King County, which has a large separate program with a TB Program Director, TB Program Manager, Nurse Supervisor, and six nurse case managers. Seattle & King County by itself has approximately 160 cases a year.

The WA State TB Program Manager and one of the Nursing Consultants had attended cohort review presentations and observed cohort review in action. Both were very interested in using this method at the state level with the goal of eventually involving local health jurisdiction nurses who provide direct TB case management. Their excitement and enthusiasm was helpful in convincing other staff that this process would confer benefits, even if it might be time consuming.

We concluded that there were many positive reasons for implementing cohort review in WA State. Adopting this method would assist in improving treatment completion; Washington State’s completion of therapy rate had been 95% in 1997 but dropped to 89% in 2001. Our goal is to maintain or exceed the national objective of 90% completion of therapy in WA State.

Only 68% of infected contacts 15 years of age and older initiated treatment for LTBI in 2001 and 67% completed treatment in 2000 in WA State. Thus, another compelling reason to implement cohort review was to improve rates of initiation and completion of treatment of LTBI, especially for infected contacts 15 years of age and older, in order to meet national TB program objectives.

With planning and discussions about the 2005 CDC Cooperative Agreements starting in 2002, we thought cohort review would be imperative for ensuring that cases and contacts are appropriately and effectively followed from initiation of screening to completion of therapy. State programs will be evaluated based on performance and achievement of national and state objectives. Implementing cohort review in

WA State, in addition to improving case management, will be very useful for program evaluation.

After numerous discussions, staff agreed that this was a worthwhile effort for improving case management, ensuring completion of therapy, and meeting or exceeding national objectives.

Methods

Many meetings were held with the WA State TB Program Manager, the Nursing Consultants, the epidemiologist, the surveillance coordinator, the data entry compiler, and our CDC Consultant to ensure that everyone understood the purpose and process of cohort review. Information was gathered from the Bureau of TB Control, New York City Department of Health and Mental Hygiene, and the Charles P. Felton National TB Center on their process, methods, and tools.

We adapted the cohort review process for WA State and decided which cohort of TB cases to review at which point in time. A timeline was developed and decisions were made about appropriate outcome measures to evaluate, such as timeliness of lab collection and of receipt at the lab, and starting therapy after TB disease is suspected. The cohort review form was obtained from New York City and modified to meet WA State's needs and to add timeliness measurements that were felt to be of value in conducting programmatic evaluation.

Roles and responsibilities were clarified. The role of the epidemiologist was to analyze case and contact data based upon outcome measures that the TB program determined to be of importance to evaluate. For instance, in WA State, timeliness of reporting, adherence to medication, and HIV testing were added to the analysis as outcome measures. In addition, a data dictionary was created so that everyone involved in the cohort review would be familiar with the outcome measures. The

TIMS and the WA State TB Contacts Database were analyzed to provide case and contact summaries.

Cohort reviews were initiated at the beginning of May 2003 and another session was conducted at the end of May with state staff including the TB Program Manager, two TB Nursing Consultants, and the state TB epidemiologist. Bill Bower from the Charles P. Felton National TB Center and Judy Gibson, CDC Consultant, also participated in this first cohort review. Cases counted between April and June 2002 and those counted between July and September 2002 were reviewed in May. Cases counted between October and December 2002 were reviewed at the end of July. In addition, nurse case managers as well as the TB Program Director and other staff from Seattle & King County participated in cohort review for the first time in July 2003. We wanted to become more accustomed to the cohort review process initially, so we conducted them more frequently than the quarterly New York City model. Beginning in November 2003, cohort review sessions now occur on a quarterly basis with a review of cases counted about 8-10 months prior (for example, in November, cases counted January to March 2003 were reviewed).

The TB Nursing Consultants prepared for and presented the cases while the Program Manager served as the facilitator. Preliminary analyses of cases and contacts were provided at the beginning of the cohort review. After the cohort review sessions, the Nursing Consultants worked with the local health jurisdiction nurses to follow up on questions raised during the case presentations. Final analyses of cases and contacts were provided for the previous cohort at the following cohort review session.

Conclusion

The implementation of cohort review in WA State has been a team effort. Extra time was required to adapt the New York City

model to the needs of WA State. In addition, all staff had to be clear about the process, methods, and roles and responsibilities. It was worth the effort to have many discussions with staff. The methods and process have been altered periodically, with everyone recognizing and accepting that cohort review is a work in progress.

At the time of this writing, four cohort review sessions have taken place. Staff from Seattle & King County have collaborated with state staff to make the cohort review process comprehensive and successful. The TB Nursing Consultants have found these reviews to be helpful with state-level case oversight, especially as the cases are being reviewed and feedback is provided on treatment completion rates for cases and contacts. We will be sharing this method with local health jurisdiction (LHJ) staff in order to conduct future cohort review sessions with the LHJ case managers who provide direct care of the cases.

For further questions about cohort review in WA State, please contact Trang Kuss by telephone at (360) 236-3465 or by e-mail at trang.kuss@doh.wa.gov. For additional questions about the cohort review method, please contact Bill Bower at the Charles P. Felton National Tuberculosis Center by telephone at (212) 939-8258 or by e-mail at blb3@columbia.edu.

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New Training Initiatives by the TB Education Center, Texas

The Tuberculosis Education Center (TBEC), an affiliate of the Texas Department of Health (TDH)/Texas Center for Infectious Disease, is pleased to announce the launch

of three new training initiatives dealing with binational TB control along the Texas/Mexico border, the newly released TB treatment guidelines, and TB/bioterrorism (BT) linkages. As is the case with all TBEC courses, our goal is to ensure that health professionals participating receive up-to-date information and the highest quality training, so that at the completion of training they will have the enhanced skills needed for dealing with the problems they face on the front lines in the battle against TB.

Binational Programs: The Director of the TB Education Center, Barbara Seaworth, MD, has long been involved with the treatment of TB in the state of Texas and is recognized nationally as an expert on drug-resistant TB and MDR TB. In addition to treating patients at the Texas Center for Infectious Disease, Dr. Seaworth is the TB Consultant for the State of Texas and the Binational Project, and provides consultation services nationwide. Her experience with TB patients along the US-Mexico border resulted in the formation of the TB Education Center, with the assistance of the Health Education Training Center Alliance of Texas (HETCAT), developing cross-border training events in conjunction with the US-Mexico Border Health Association, the Ten Against TB (TATB) technical committee, the El Paso Health Department, the TDH Region 9 Office, and the TDH Region 8 Office in Del Rio. Training courses were held on September 10 and 11, 2003, in Juarez, Mexico, and on September 12 in El Paso, Texas, to address the issues of TB in correctional facilities on both sides of the border and the complications caused by the transient nature of correctional populations and the free movement of individuals across the US-Mexico border. Attendees and presenters came from both sides of the border during the 3 days of training; it is hoped that the exchange of information will lead to a higher level of cooperation and result in greater success rates in the treatment of TB in the Juarez/El Paso

metropolitan area. Training also took place in Ciudad Acuna, Mexico, on September 4, and was designed primarily for area doctors and nurses, with US as well as Mexican presenters and participants. As a result of these cross-border efforts, the TBEC hopes to include similar training events in 2004 as part of our goal of providing comprehensive TB training to health care professionals in the Texas area and Mexican communities along the US-Mexico border.

TB Treatment Guidelines: After serving on the TB Committee of the Infectious Diseases Society of America, which reviewed and provided input for the development of the new TB treatment guidelines, Dr. Barbara Seaworth recognized the immediate need to disseminate the information in the guidelines to public health practitioners. The first step TBEC took in this direction was to create a poster for distribution to clinicians, hospitals, and other providers. The poster presents in a concise, "quick-reference" format, the new treatment guidelines.

Step two was TBEC's course, "New Approaches to TB Treatment," first presented on May 23, 2003, at the TDH Region 7 Headquarters in Temple, TX. Participants included public health technicians, administrative support staff, nurses and doctors from the public and private sectors, and staff of civilian as well as military facilities. The participants were not only eager to learn about the new approaches to TB treatment, but were also open about sharing their own experiences in treating difficult TB cases. Following the enthusiastic response to training in Temple, the course was offered in San Antonio July 14, 2003, and the course is scheduled for presentation of the next 18 months to ensure coverage for the remainder of the state. The "New Approaches" curriculum includes an overview of the new TB treatment guidelines geared for licensed TB clinicians. The presentation is enhanced by review and discussion of how the guidelines

were used by Dr. Seaworth in her recommendations for management of cases on which she has consulted. The course also includes case studies that are selected and presented in order to specifically illustrate pertinent points in the guidelines. Course participants are guided in working through the case and determining the proper management approach required. Each exercise concludes with a facilitated discussion of the case, the recommended course of treatment, and a question and answer period. Future dates for this course will be posted on the TBEC Web site.

Two conferences entitled "Exploring TB/BT Linkages" were held in Dallas and San Antonio, Texas, in December 2003. These programs were developed to show the experiences of TB programs and the applications to bioterrorism preparedness against airborne pathogens. Using the TB module, the presentations underscored the role of public health protection as practiced by TB programs throughout the state. Linkages between TB and BT were described in terms of signs and symptoms, index of suspicion, physician and nurse public health expertise, diagnosis, case finding, contact investigation, infection control practices (including isolation and administrative, environmental, and personal protection programs), existing communicable disease laws designed to protect the public health, the dual use of resources such as those that provide for Level II Laboratory capabilities, and the communication of epidemiology data and analysis in outbreak situations.

For further information about the TB Education Center and its courses please visit the TBEC Web site:

www.tdh.state.tx.us/tcid/TB-Education-Ctr.htm

—Submitted by Faye McCarthy, RN,
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Consultation with African-American Organizations

The Advisory Council for the Elimination of Tuberculosis (ACET) and CDC cosponsored a consultation with national nongovernmental, African-American organizations and agencies whose programs could have an impact on TB control efforts in the African-American population. This was an initial step in addressing the disparity between the TB case rates of African Americans and other US-born racial/ethnic groups in the Southeastern United States. The consultation was intended to raise awareness about the disparity, solicit support for eliminating TB in US-born African Americans, and develop recommendations for accelerating the decline in TB rates among US-born African Americans in the Southeastern states.

The consultation, entitled "TB in America: Disparities in the Southeast," was held on May 13 and 14, 2003, at the Sheraton Colony Square Hotel in Atlanta. Approximately 40 people attended this consultation (not including observers from CDC). The participants comprised a diverse group that included academicians, health care providers, public health leaders, policy- and decision-makers, religious and community leaders, state and local health department representatives, and others who represent a broad spectrum of views.

Organizations Attending the ACET Consultation

Alpha Kappa Alpha Sorority, Inc.
 AME Church
 American Medical Association
 American Public Health Association
 Bureau of Communicable Disease Control, Texas DOH
 CDC
 Chicago Department of Public Health
 City of Atlanta Mayor's Office
 Denver Public Health Department
 Division of Immigration Health Services, US

Public Health Service
 Federal Bureau of Prisons
 Georgia Department of Human Resources
 Georgia Division of Public Health
 Georgia State Senate
 Howard University
 HRSA/Bureau of Primary Health Care
 Institute for Families in Society
 Jackson (Mississippi) Medical Mall Foundation
 Marion County (Indiana) Health Dept
 Dept of Internal Medicine, Meharry Medical College
 Metro Public Health Department of Nashville, Tennessee
 N.W. Public Health District I, Mississippi
 NAACP
 National Association of Black Social Workers
 National Association of Community Health Centers
 National Baptist Convention of America, Inc.
 National Black Methodists for Church Renewal
 NJMS National Tuberculosis Center
 Office of Minority Health (DHHS)
 Omega Psi Phi Fraternity, Inc.
 San Francisco TB Control, SF General Hospital
 South Carolina Department of Health Substance Abuse and Mental Health Services Admin
 University of Alabama-Birmingham
 University of South Carolina

The first day of this consultation provided participants with an overview of the TB problem and more specific information about TB in African Americans. On the second day, participants were assigned to smaller breakout groups and asked to develop specific recommendations for accelerating the decline in TB rates among US-born African Americans in the Southeastern states.

During the breakout sessions, the participants were asked a number of predetermined questions that covered several major topics, including level of community TB knowledge, how to increase

awareness of the TB problem, how to mobilize community resources, and how to enhance relationships between TB control programs and African-American communities in order to improve TB elimination activities.

The discussion groups identified a number of unmet needs and provided important comments and specific recommendations for activities to raise awareness and stimulate actions to address and reduce TB in racial/ethnic minorities. The following is a summary of the needs and recommendations:

Needs

- Reframing TB disparities will be important in creating political will.
- Media and available technology need to be used for the dissemination of information (realizing that some in the target population may not use cell phones and computers).
- Communities and health departments must “come together” to provide holistic care that addresses more than TB care.
- The private provider–public health disconnect must be addressed.
- Internal community issues that perpetuate and magnify communicable diseases must be addressed locally.
- “Southeast” should be defined as the geographic area where disparities are greatest and where there are enduring historical influences of racism, discrimination, and exploitation.
- Strategies need to reflect knowledge of the environment in which the TB patients live.
- Successful models (e.g., Mississippi) in the South exist and key elements/best practices

of those programs need to be disseminated.

- The African-American community needs to hear that TB is curable and preventable, and not an inherited condition.
- The African-American community needs easier-to-understand educational material.
- Advocates for TB elimination need one-page fact sheets describing the TB problem at the state and/or local level for presenters of TB information and advocates to hand out to community and political leaders.
- CDC needs to do more evaluation of existing TB programs in predominantly African-American communities.
- Notable figures are needed to advocate for TB elimination and reduce the associated stigma.
- The community needs to become more outraged about the TB problem, stop being so accepting.
- The consultants perceived a need to raise awareness among both medical and legislative leaders regarding the TB problem and the disparity among African Americans.
- A national advocacy group is needed to develop relationships with a variety of groups.
- More publications on the disparity issue in the Southeast are needed to help spread the word.

Recommendations

- Send TB experts to communities and community organizations to speak about the problem and what we can do about it.
- Use a number of venues to get the message out, including public service announcements, billboards, former patients, the

National Minority Health Education Network, media resources that have a largely African-American audience, direct person-to-person (even door-to-door) education, and local gathering points (churches, shelters, emergency rooms, liquor stores).

- Seek out and partner with the private sector, CBOs, and other organizations that serve the African-American community.
- Involve public school systems and form partnerships with historically black institutions of higher learning.
- Health departments should strive to ensure that the racial/ethnic composition of their staff is similar to that in the communities being served.
- Place TB on the Secretary's Health Disparities Report, and on the agenda of the American Public Health Association conference.
- CDC should improve or establish relationships with a variety of organizations such as the National Medical Association, the Black Women's Project, and African-American fraternities and sororities.
- Improve the relationships between the health departments and African-American communities. TB programs must acquire a better understanding of black culture, maintain a level of respect for the individual, evaluate and improve community access to TB services, and create more community coalitions.

Since the consultation was held, work has continued on a number of follow-up tasks. The first task was to develop and distribute an executive summary that participants

could use in their reports back to their organizations. In addition, a final participant list was sent to all attendees to facilitate communication between them. On June 5, 2003, the results of the consultation were presented to the full ACET committee. The next step was to advise ACET on potential follow-up activities based on the recommendations made at the consultation. An initial meeting has been held and recommendations are currently being finalized.

In addition to these activities, many consultation participants have been working on their own to inform others of the disparity in TB rates. They have also asked CDC officials to report on the disparity at their national and regional conferences. The National Coalition for the Elimination of Tuberculosis (NCET) has invited participants to join them. The consultants agreed to draft and co-sign a letter to Secretary Tommy Thompson expressing their concern over racial health disparities in TB among Americans.

*—Reported by H. Dave Crowder, MPH
Div of TB Elimination*

The TB Patient Management Project

The TB Patient Management Project is a DTBE-sponsored effort to collaborate with representatives from the National TB Controllers Association (NTCA) to assist in developing a solution for local and state health departments that need an information system to support the multitude of TB patient management activities. While all TB reporting jurisdictions use the TB Information Management System (TIMS) to report TB cases to the CDC TB Surveillance System, most programs have not implemented the patient management functions in this software application. The programs that have implemented the patient management functions rely very heavily on them and have incorporated the use of these data for management and clinical reporting.

Since the introduction of TIMS in 1993, many local and state programs have developed their own patient management systems; some have focused on a specific TB control activity (i.e., contact investigation) while a few have developed a comprehensive application. Even today, many local and state programs lack any information system capability to support patient management activities. While a recognized output of a patient management system is the mandated reporting requirements to CDC (RVCT, ARPE), it has been recognized that local and state programs need systems to assist in patient and program evaluation and management activities, information that is not reported to DTBE.

There are several challenges to this project. First, while our TB community relies on published guidelines for TB control and prevention activities (ATS/CDC guidelines), the management of TB patients is a local process and as such is influenced by local practices. This creates a challenge to those involved in information system (IS) development trying to identify TB patient management processes that are common across programs. Second, TB programs vary in their infrastructure. Some state programs are in charge of providing TB care to patients in their jurisdiction, while other states provide oversight and guidance to county-run programs in their jurisdiction. This impacts access to data and the need for confidentiality. Third, programs need systems that are interoperable so that a program can simply modify a system rather than restart the application development process. Interoperability includes the ability to interface with CDC's National Electronic Disease Surveillance System (NEDSS) and its program area modules, which will support the collection of surveillance data from state systems so that programs can reduce the amount of duplicate data entry. Lastly, while public health programs have recently received an infusion of funds to support local bioterrorism information

system infrastructure development, many public health programs do not have dedicated funds to support TB information system development, support, and maintenance.

To address these challenges, DTBE staff (representatives from Field Services and Evaluation Branch and the Information Technology and Statistics Branch) have partnered with an internationally recognized information system development company, Scientific Applications International Corporation (www.saic.com), along with Scientific Technologies Corporation (a subcontractor recognized for its work with local and state public health departments) to advance public health practice through information technology. With the involvement of contractor support, along with the use of industry-standard information system development technologies and processes, DTBE is committed to supporting two major outcomes from this project:

1. Document the functional requirements and identify core TB patient management practices and program evaluation activities across programs
2. Use this information to develop evaluation criteria to assess and evaluate various existing information system options.

The result will be a recommendation to DTBE, NTCA, and other stakeholders.

Project schedule/activities

A great deal of the ground work was accomplished by the NTCA Information Technology Working Group, who began in 2001 to identify core patient management data elements. With this invaluable contribution, the project team has launched several additional activities:

- Collaboration with the TB Surveillance NEDSS effort and other CDC NEDSS program area module initiatives (leads: STD, NIP)
- NTCA joint analysis and design meetings in Washington, DC, in

June 2003, in Atlanta in August 2003, and via a Webinar (Web seminar) in October 2003

- CDC joint analysis and design meeting in Atlanta in July 2003
- Field visits to select programs to validate program management and evaluation activities (state of South Carolina; city of Denver, CO; San Mateo County, CA; state of New Mexico; Austin-Travis County, TX; New York City; Chicago, IL; and Shelby County, AL)

The project team completed the documentation of core patient management requirements by September 2003. A draft set of information systems evaluation criteria were available by November 2003, with pilot testing of the criteria beginning in December 2003. The project team will be identifying and selecting existing systems between November and December 2003. Beginning in January 2004, SAIC's team will begin evaluating selected systems. The project team expects to deliver a preliminary recommendation to NTCA by June 2004 and a final recommendation addressing estimated costs for modifications and support by September 2004.

Concluding thoughts

- Two important features of this endeavor will be identifying common TB patient management and program evaluation functions, and using industry-standard information technology methods
- Project conclusion will not result in software development, but rather the evaluation of existing systems
- A recommendation outlining the selection of feasible systems, along with an assessment of necessary modifications and support needs, will be developed

The project team recognizes Stuart McMullen (currently Senior Public Health Advisor assigned to the Los Angeles County

TB Control Program) for his administration of the project during its inception phase while he was stationed in Atlanta.

For more information about this project, please contact Subroto Banerji at (404) 639-8065 or via e-mail at sbanerji@cdc.gov

—Reported by Subroto Banerji, MPH
Div of TB Elimination

Summary of October ACET Meeting

On October 1 and 2, the Advisory Council for the Elimination of Tuberculosis (ACET) met in Atlanta. Following are several highlights of the meeting. There has recently been a considerable turnover in the ACET membership, with a number of long-time members rotating off the council and new members joining. The new roster of ACET members is included as an attachment to this issue of *TB Notes*. After the welcoming remarks, Dr. Ed Thompson, CDC's Deputy Director for Public Health Services, described the Futures Initiative. Under this activity, CDC is re-examining its place in the broader public health system, using feedback from external partners to make strategic decisions that will guide programs over the next decade. Dr. Harold Jaffe, Director of the National Center for HIV, STD, and TB Prevention (NCHSTP), reported that the Division of AIDS, STD, and TB Laboratory Research (DASTLR) was administratively transferred from the National Center for Infectious Diseases (NCID) to NCHSTP on October 1, 2003. The transfer will not result in a decrease or increase to the NCHSTP budget. The Comprehensive TB Elimination Act of 2003 was introduced, calling for an FY 2004 appropriation of \$528 million for CDC's TB program; a Senate companion bill would authorize \$235 million. In my DTBE Director's Report, I described the recent activities and projects of DTBE's branches; after my remarks, ACET members discussed the TB budget and strategies for addressing unmet TB elimination needs. We at CDC acknowledged that several TB

activities are adversely impacted by the budget; e.g., dollars for targeted testing and LTBI treatment will be redistributed because of inadequate funding. ACET made a formal statement emphasizing that the budget is adversely impacting TB elimination strategies, and agreed to write a letter to the Secretary of the Dept. of Health and Human Services (DHHS) about the inadequacy of the TB budget for implementing all recommendations by the Institute of Medicine for TB elimination.

Dr. Amy Bloom of the US Agency for International Development (USAID) described USAID's global TB program to expand directly observed therapy, short-course (DOTS) through partnerships and capacity building. Dr. James McCauley, Director of Cook County Jail in Chicago, gave a status report on TB control in jails; he noted that corrections is one of the most important yet challenging issues to address in US TB control and elimination efforts. Dr. Mark Lobato of DTBE described a recent CDC-sponsored study of TB control activities in city and county jails. ACET acknowledged that TB prevention and control in correctional facilities is another area adversely affected by the TB budget. Dr. Diana Schneider of the Division of Immigration Health Services (DIHS), DHHS, gave an update on CDC's ongoing collaboration with the Bureau of Immigration and Customs Enforcement (ICE) in devising mechanisms that will address the problem of immigration detainees with TB. Several CDC staff then gave presentations on TB in foreign-born persons. Dr. Eileen Schneider described the progress made on the US/Mexico binational TB referral and case management project, which ensures continuity of care and completion of therapy for TB patients who migrate between the two countries. She reported that the binational card project has already improved communication and collaboration between ICE detention centers and local TB programs. Mr. Subroto Banerji of DTBE reported that the Electronic Disease Notification (EDN) system being developed

by CDC's Division of Global Migration and Quarantine (DGMQ) will initially focus on TB; currently, CDC is expecting the national roll-out of EDN-TB in September 2004. Dr. Mary Naughton of DGMQ reviewed the revised technical instructions for civil surgeons, and Dr. Dolly Katz of DTBE described an upcoming study of the epidemiology of TB in foreign-born persons in the United States and Canada. Dr. Masae Kawamura, the TB Controller for San Francisco, described activities her department has conducted to evaluate its progress in implementing the 1998 CDC guidelines for TB control in foreign-born persons. Ms. Elizabeth Williams, TB Surveillance Coordinator for the Arizona Dept of Health Services, described activities her state is conducting to address detainees with TB who are deported before they complete treatment. Arizona has a "Meet and Greet" program that arranges for Mexican nationals who are being deported to Mexico to be met at the border and offered TB treatment. After her comments, ACET recommended adding the issues of TB control in correctional settings and in foreign-born populations to ACET's letter to the Secretary of DHHS. In addition, ACET members agreed to form a new Foreign-born TB Workgroup in order to review the 1998 CDC guidelines on TB control in foreign-born persons, compile existing data, and determine elements missing from the guidelines (the workgroup will not address TB in undocumented persons).

The next day, the first presentation was an update by Dr. Zach Taylor on DTBE's targeted testing projects. He outlined several challenges and problems the grantees had encountered, indicating that currently available results reflect mixed success. Consequently, when CDC announces the new cooperative agreements in FY 2005, only those projects with viable targeted testing interventions and those with demonstrated effectiveness will be eligible for funding. Dr. Paul Jensen then discussed the status of the draft revised infection control guidelines for

health care settings. After the guidelines are cleared through CDC, the draft will be published in the *Federal Register* and comments addressed; the document will be revised, recleared through CDC, and published in the *MMWR Recommendations and Reports* series in 2004. The final topic was TB elimination among US-born African Americans, with Dr. Zach Taylor reporting on DTBE's efforts in response to recent recommendations. DTBE's activities have included initiating a newsletter, *The TB Challenge: Partnering to Eliminate TB in African Americans*; developing an *MMWR* article on TB disparities in the Southeastern United States; preparing a fact sheet template to be used by Southeastern states; and collaborating with NCHSTP in providing a DTBE booth at minority health meetings. Future steps will include conducting research in several Southeastern states to analyze treatment adherence problems in US-born blacks, and incorporating language in the next cooperative agreements that will address racial health disparities in TB in the United States. Dr. Stephanie Bailey, providing the perspective of the Southeast TB Workgroup, suggested that CDC remain involved with this activity. The ACET membership was very pleased that NTCA has formed a workgroup that will maintain the focus on TB in US-born blacks. Dr. Randall Reves of Denver, Colorado, reported on the Strategic Plan for TB Training and Education; a discussion ensued on the challenges and importance of funding and implementing this plan.

—Reported by Ann Lanner and
Kenneth G. Castro, MD
Div of TB Elimination

Update from the Evaluation Work Group (EWG)

Recently, representatives from seven state TB control programs (CA, FL, MD, NY, SC, TX, and VA) and DTBE formed the TB Evaluation Work Group (EWG) to develop a national evaluation plan, along with evaluation tools and materials, in order to

build state and local capacity in program evaluation. The EWG held its first meeting May 27-29, 2003, in Atlanta. During this meeting, the EWG determined the primary tasks the group will undertake in developing an evaluation plan and the tools needed to build evaluation capacity at the national, state, and local levels.

What has been accomplished to date?

The EWG assisted the National TB Controllers Association in conducting a needs assessment of state and big city TB programs to determine evaluation practices and tools that are currently being used. Eighty-one percent of state and big city TB programs participated in the needs assessment. Data from the needs assessment are being analyzed and the results will be shared in the near future.

How will the Evaluation Work Group assist my TB program?

The EWG is developing a strategic plan that is designed to improve and enhance TB program performance by

- assisting TB programs in assessing their evaluation needs
- developing appropriate and useful program performance measures, evaluation tools, and training
- building the interest and skills needed to perform beneficial evaluation

How can my TB program assist the Evaluation Work Group?

Representatives from TB programs drive the EWG by providing hands-on information about the evaluation process. All state and local TB programs can act as partners in this effort by

- providing feedback through needs assessments
- sharing evaluation tools
- reviewing draft tools
- providing support for evaluation in your TB program

If you would like more information about how you can become a part of this effort, please contact Mark Lobato at

MLobato@cdc.gov or Maureen Wilce at MWilce@cdc.gov.

—Reported by Betsy Carter, MPH, CHES
Mark Lobato, MD
Div of TB Elimination
and Carol Pozsik, RN, MPH, Director
TB Control Div, SC Dept of Health and
Environmental Control

The Stop TB Partnership at the World Health Organization

This article first appeared in the August / September 2003 edition of the TBI Monthly Update, a publication of the Tuberculosis Initiative at Princeton Project 55 (viewable online at <http://www.project55.org/tbi.html>). It was written by Nina Jenkins-Johnston, a Princeton University senior majoring in the Woodrow Wilson School of International and Public Affairs.

In the Woodrow Wilson School of International and Public Affairs (WWS), I have chosen to focus my studies on domestic and international health policy. During my junior year, my first independent project focused on efforts to reduce black infant mortality in New Jersey, and the second looked at efforts to combat diarrhea in children in rural areas of West Africa. After completing both of these projects, I decided that I wanted to get a real feel for what it was like to work in the international sector and to see what efforts were being made to improve global health. With the help of Dr. Richard Fluck, a visiting professor at Princeton from Franklin and Marshall College, I was able to obtain an internship with the Stop TB Partnership.

The Stop TB Partnership is a public-private sector partnership housed at the World Health Organization (WHO) in Geneva, Switzerland. Its mission is to help combat the growing TB epidemic worldwide. The Stop TB Partnership is dedicated to its efforts particularly because TB affects one third of the world's population and kills two million people each year, despite the fact

that it can be effectively cured with proper treatment. The Partnership currently has more than 100 members all over the world. One of its major challenges is to set up an information distribution system that would enable all members to benefit from the expertise, tools, and activities for the collective partnership. The Partnership expressed an interest in having an intern who would assist the Information Manager at the Partnership.

During my 6 weeks at the Partnership, I was mainly involved in the development of an online TB information center for the new Stop TB Web site. There was a need to create a comprehensive, well-structured center where health professionals and others involved in TB-related work could obtain research and educational materials. My supervisor and I worked with two organizations: Healthlink Worldwide and Source. Healthlink is a small information management NGO based in London, and Source is an international information support center designed to strengthen the management, use, and impact of information on health. The Partnership is hoping to contract with Healthlink for the ongoing administration of the TB resource center. With representatives from Healthlink, I helped develop mock-up pages of how to structure the resource center so that information could be posted and retrieved in the most navigable way.

In addition to my tasks as an assistant to the information manager, I also worked with the Stop TB Partnership's Communications and Advocacy team to prepare for the second Stop TB Partners' Forum meeting in New Delhi in December 2003. The first Partners' Forum meeting took place in Washington, DC, in October 2001 and was a milestone in the global effort to control TB. It brought together 200 participants from around the world, including representatives from 18 of the 22 high-burden countries. The forum in New Delhi this December is a follow-up to the first meeting. In preparation for this meeting, I helped the

Communications and Advocacy team compile a comprehensive media contact list for the six official WHO regions. I also helped update the online directory of all the partners in the Partnership. This latter task was the first step toward creating a searchable CD-ROM for the 2003 forum that would contain complete and updated information on all the Stop TB partners. The CD-ROM would provide contact information, addresses, and descriptions of what area of TB the partner was involved in.

At the end of the internship, I was asked to present my work to all the staff at the Partnership. Working at the Stop TB Partnership was a rewarding experience. It enabled me to gain insight into the many challenges that international organizations face in their efforts to control global health epidemics. It was certainly quite encouraging to actually witness and be a part of these efforts. This year I will be working with the Stop TB Partnership and the Woodrow Wilson School to ensure that other students interested in health policy are able to benefit from such an experience.

For more information about the Partnership please visit <http://www.stoptb.org/>.

—Submitted by Nina Jenkins-Johnston
Princeton University Class of 2004

TB ETN Updates

TB ETN is pleased to announce the steering committee members and subcommittee co-chairs for 2003-2004:

Steering Committee

Nfornuh Alenwi, Solidarity Health Foundation, Cameroon, Africa
Gabrielle Benenson, Centers for Disease Control and Prevention, Georgia
Rajita Bhavaraju, New Jersey Medical School National Tuberculosis Center
Betsy Carter, Centers for Disease Control and Prevention, Georgia
Maria Fraire, Centers for Disease Control and Prevention, Georgia

Joanne Maniscalco, Nassau County Department of Health, New York
Suzy Peters, Florida Bureau of Tuberculosis and Refugee Health
Edith Sampson, Cochise County Health Department, Arizona

Communications/Membership Subcommittee

Teri Lee Dyke, American Lung Association of Michigan
Vipra Ghimire,* Virginia Department of Health

Conference Planning Subcommittee

Kathy Hursen, Massachusetts Division of Tuberculosis Prevention
Karen Wigren, A.G. Holley State Hospital, Florida

Cultural Competency Subcommittee

Genevieve Greeley,* New Mexico Department of Health
Savitri Tsering, Wisconsin Tuberculosis Program

*Returning from 2002-2003

Member Highlight

Kathy Hursen, RN, MS, is the Director of Communication and Education at the Massachusetts Department of Public Health, Division of TB Prevention and Control. In addition to being a Registered Nurse, Kathy has a BS in Nursing and a masters degree in Nursing Management and Administration. Kathy heard about the TB Education and Training Network (TB ETN) from Maria Fraire at CDC about 3 years ago and is one of the original members.

Kathy's job responsibilities include

- Providing TB training and educational programs for the TB Division, health care providers, the general public, and other interested parties in Massachusetts

- Developing educational and training programs and courses to inform division staff and health care providers in Massachusetts about recent trends, policy changes, and recommendations in TB prevention and control
- Ensuring all educational resources are current as well as culturally and linguistically appropriate
- Developing and coordinating educational materials that are published in the Bureau newsletter and in other professional newsletters, information packets that are distributed to members of the news media, and information letters that are sent out such as in a large contact investigation
- Coordinating conferences sponsored by the Division of TB Prevention and Control.
- Providing consultation to division staff and other health care providers who prepare educational and training programs on TB prevention and control.

Kathy is an active member of the TB ETN steering committee and the conference planning subcommittee. "It has been a pleasure working with my colleagues who belong to the TB ETN. The committee work has provided an opportunity to learn about the latest strategies for developing education programs and materials for health care professionals, and high-risk communities."

Kathy stated a number of reasons for joining TB ETN, including the opportunities to obtain valuable information and resources for TB educators, collaborate with colleagues, share resources, obtain updated information about courses and training, and learn new skills.

When asked what she hopes TB ETN can accomplish in the next 2 years, she said that she would like to see the TB ETN

conferences continue to be held yearly to "increase TB educator's skills and improve collaboration among TB educators."

Kathy has been quite busy over the past year. She has been actively involved in many projects, including (1) the creation of the Northeast TB Training Consortium (with assistance from the New Jersey Medical School National TB Center), (2) the 3-day "TB Today!" course, (3) the Northeast TB Controllers Conference, (4) the 1-day TB clinic physicians conference, (5) four state-wide regional TB conferences, and (6) a TB and pregnancy course. In addition, she has developed many products, including a new TB treatment guidelines fact sheet, a round caliper for measuring TB skin test results, and several patient and community information brochures, which were created in collaboration with her colleague, Marilyn DelValle (coordinator of patient and community education). In addition, Kathy conducted an education needs assessment for the northeast region of the United States and gave a presentation on developing readable education materials for patients and communities. And, as if that's not enough to keep Kathy busy, she is also a guest lecturer at the following institutions:

- Boston University School of Public Health, Department of Environmental Health, Doctoral Seminar
- Atlantic Union College Nursing Program, Stoneham, MA
- Quincy College, Quincy, MA
- Framingham State College School of Nursing, Framingham, MA
- Harvard School of Public Health

Kathy is a member of numerous professional societies such as the International Union Against Tuberculosis and Lung Disease, the National Tuberculosis Nurse Consultant Coalition, Sigma Theta Tau, the American Nurses Association, and the Massachusetts Nurses Association.

Outside of work, Kathy enjoys photography, alpine skiing, rollerblading, yoga, tai chi, gardening, boating, traveling, and hiking.

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

TB ETN
CEBSB, Division of TB Elimination
CDC
1600 Clifton Rd., NE, MS E10
Atlanta, GA 30333

—Submitted by Maria Fraire, MPH, CHES
Div of TB Elimination

TB ETN Third Annual Conference

Approximately 100 TB Education and Training Network (TB ETN) members gathered in Atlanta for the third annual TB ETN conference in August 2003. The theme of this year's conference was "Oh, the Places TB Education Can Go..." Participants represented TB programs, federal agencies, hospitals, universities, the American Lung Association, National TB Model Centers, and international organizations interested in TB education and training issues.

Conference sessions focused on the systematic process of developing education and training materials and programs. A new feature of this year's conference allowed participants to attend skill-building breakout sessions of their choice in the areas of needs assessments and material and course development. Participants also enjoyed hearing from state and local programs during an educational materials discussion session in which TB ETN members from Georgia, Hawaii, Massachusetts, and Central Asia gave presentations on educational materials developed in their programs and lessons learned during the process. In addition, participants from Florida, Georgia, Indiana,

Massachusetts, Minnesota, New York State, San Diego, and Virginia shared materials developed in their programs at an educational materials display.

Highlights of the conference included the session "Making Materials Appropriate to Your Audience," presented by Janet Ohene-Frempong, a specialist in the area of health literacy and cross-cultural communications. Ms. Ohene-Frempong used her vast experience to demonstrate how to produce materials for adults with limited literacy skills and how to make materials culturally appropriate. Participants praised the session; several participants stated that Ms. Ohene-Frempong's excitement about the topic was infectious. Another highlight was a comical skit in the session "Planning and Strategy Development." Gabrielle Benenson from CDC, Vipra Ghimire from the Virginia Department of Health, and several staff from CDC enacted an "Oprah and Dr. Phil" talk show wherein guests shared training and education "problems" that they had encountered. Oprah (Ms. Benenson), Dr. Phil (Ms. Ghimire), and the audience helped the guests identify problems that had occurred and solutions to address the problems.

Conference participants enjoyed the opportunity to network at an evening social sponsored by the publisher Channing Bete. Numerous exhibitors, including Channing Bete, CDC, the National TB Model Centers, the National Prevention Information Network (NPIN), and the AIDS Education and Training Center (AETC), were available throughout the conference to provide information about the education and training resources that each organization offers.

Evaluations from the conference reveal that participants thought the conference was excellent and met their needs as TB educators/trainers. Many participants noted that they liked the dynamic speakers, the opportunity to network, and the skill-building breakouts. The TB ETN Conference Planning Committee has already begun

reviewing the evaluations for ideas for next year's conference. It is sure to be as exciting as this year, so don't miss out!

For more information about the TB Education and Training Network, visit <http://www.cdc.gov/nchstp/tb/TBETN/default.htm>. If you would like to join TB ETN, please send an e-mail requesting a registration form to TBETN@cdc.gov, or send a request by mail to CDC/DTBE/CEBSB, 1600 Clifton Rd, NE, MS-E10, Atlanta, GA, 30333.

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

UPDATE FROM THE CLINICAL AND HEALTH SYSTEMS RESEARCH BRANCH

Potential Cost Savings by TB Treatment Regimen Choice

Revised TB treatment recommendations published in June 2003 included the 4-month continuation-phase use of once-weekly rifapentine and isoniazid for patients at low risk for treatment relapse or failure¹ (i.e., adult, HIV-negative patients with noncavitary pulmonary TB whose 2-month sputum smear is negative for acid fast bacilli, for a total of 6 months of therapy.) The availability of this and other regimens provides alternatives that allow providers to tailor treatment to patient characteristics in order to enhance safety, tolerability, and adherence. The regimens also provide opportunities for cost savings for TB programs.

Figure 1 lists the various regimens for treatment of culture-positive pulmonary TB caused by drug-susceptible organisms. There are four initial-phase regimens, each associated with one, two, or three options for the continuation phase. Regimens 1-3 last 6 months, with regimen 4 lasting 9 months and reserved for patients who cannot take pyrazinamide.

Table 1 presents estimated costs per patient to TB programs and to society to implement the various regimens. Since the medications have different costs and since treatment can be administered daily, three times weekly, biweekly, or once weekly, it is helpful to view the total costs associated with each regimen. Direct costs are those incurred by TB programs for medications and personnel in conducting directly observed therapy (DOT). Total costs add patient productivity losses to the direct costs to estimate the costs to society. All doses are assumed to be administered by DOT. The costs of DOT were estimated by applying the Medicare allowable charge for a home DOT visit (\$49)² and converting it to a cost by multiplying it by 0.502, which is the average cost-to-charge ratio for pulmonary diseases.³ Patient productivity losses are estimated based on computations of a daily wage from the Bureau of Labor Statistics Average Weekly Earnings,⁴ adjusted upwards by 22 percent to include benefits.⁵ Since most TB programs purchase their medications through the Public Health Service (PHS), estimates of PHS prices are used. All costs are reported in 2001 dollars.

In the initial phase, assuming doses for an average 70-kg person, the standard regimen of 2 months of daily HRZE costs approximately \$1,200 in direct costs and \$2,400 total. The least costly of the three regimens for non-pyrazinamide-resistant disease is 2 weeks of daily (5 days per week) isoniazid (H), rifampin (R), pyrazinamide (Z), and ethambutol (E), followed by 6 weeks of biweekly HRZE, at approximately \$700 in direct costs and \$1,400 total — about 42 percent less than the cost of the standard daily regimen. Next least costly is the regimen of 2 months of thrice-weekly HRZE, at \$800 in direct and \$1,500 in total costs, which is 36% less costly than the standard regimen.

Among the 4-month continuation-phase regimens, the standard daily regimen of HR

costs approximately \$2,300 in direct costs and \$5,000 total. The newly recommended regimen of 4 months of once-weekly H and rifapentine (RPT) is the least costly, at \$600 in direct costs and \$1,100 total. This regimen is 78 percent less costly than the standard continuation-phase regimen. Next, at 60 percent less costly than the standard, is biweekly HR, at \$900 in direct and \$2,000 in total costs. It is followed by thrice-weekly HR, at \$1,400 in direct costs and \$3,000 total, a 40 percent cost savings over the standard.

Combining initial- and continuation-phase regimens, the standard daily regimen of 2 months of HRZE followed by 4 months of daily HR, each dose provided by DOT, costs approximately \$3,500 in direct costs and \$7,400 total. The least costly option is 2 weeks of daily HRZE followed by 6 weeks of biweekly HRZE followed by once-weekly H/RPT. This regimen costs the TB program about \$1,300 and costs society about \$2,500, for a cost savings of 66 percent over the standard daily 6-month regimen. Combining the same .5HRZE/1.5HRZE2 initial phase with biweekly HR for the continuation phase is the second least costly, for a savings of 54% over the standard regimen. An initial phase of daily HRZE followed by a continuation phase of once-weekly H/RPT results in cost savings of 52%. Next is the standard daily initial phase combined with biweekly HR in the continuation phase, for a cost savings of 40 percent. An initial phase provided thrice weekly followed by a continuation phase also provided thrice weekly results in nearly similar savings of 39 percent.

While cost savings could be achieved by TB programs using less costly alternatives to the standard regimen, care must be taken to match the correct regimen to patient characteristics to minimize the risk of active TB relapse or treatment failure. The continuation-phase regimen of once-weekly H/RPT is only recommended for HIV-negative patients with drug-susceptible TB disease that does not show cavitation and is

not sputum-smear positive after 2 months of treatment. Also, the biweekly HR continuation-phase regimen is not recommended for HIV-infected patients whose CD4 cell count is less than 100/ml. However, the number of TB patients who are eligible to receive the least costly regimens is considerable and cost savings can be substantial. Adherence may also be enhanced by use of the intermittent regimens.

—Reported by Suzanne Marks, MPH, MA
Div of TB Elimination

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The following figure shows drug regimens for culture-positive pulmonary TB caused by drug-susceptible organisms.

Regimen	Initial phase		Continuation phase			Range of total doses (minimal duration)	Rating* (evidence) [†]	
	Drugs	Interval and doses [‡] (minimal duration)	Regimen	Drugs	Interval and doses ^{‡§} (minimal duration)		HIV-	HIV+
1	INH RIF PZA EMB	Seven days per week for 56 doses (8 wk) or 5 d/wk for 40 doses (8 wk) [¶]	1a	INH/RIF	Seven days per week for 126 doses (18 wk) or 5 d/wk for 90 doses (18 wk) [¶]	182–130 (26 wk)	A (I)	A (II)
			1b	INH/RIF	Twice weekly for 36 doses (18 wk)	92–76 (26 wk)	A (I)	A (II) [‡]
			1c**	INH/RPT	Once weekly for 18 doses (18 wk)	74–58 (26 wk)	B (I)	E (I)
2	INH RIF PZA EMB	Seven days per week for 14 doses (2 wk), then twice weekly for 12 doses (6 wk) or 5 d/wk for 10 doses (2 wk), [¶] then twice weekly for 12 doses (6 wk)	2a	INH/RIF	Twice weekly for 36 doses (18 wk)	62–58 (26 wk)	A (II)	B (II) [‡]
			2b**	INH/RPT	Once weekly for 18 doses (18 wk)	44–40 (26 wk)	B (I)	E (I)
3	INH RIF PZA EMB	Three times weekly for 24 doses (8 wk)	3a	INH/RIF	Three times weekly for 54 doses (18 wk)	78 (26 wk)	B (I)	B (II)
4	INH RIF EMB	Seven days per week for 56 doses (8 wk) or 5 d/wk for 40 doses (8 wk) [¶]	4a	INH/RIF	Seven days per week for 217 doses (31 wk) or 5 d/wk for 155 doses (31 wk) [¶]	273–195 (39 wk)	C (I)	C (II)
			4b	INH/RIF	Twice weekly for 62 doses (31 wk)	118–102 (39 wk)	C (I)	C (II)

Definition of abbreviations: EMB = Ethambutol; INH = isoniazid; PZA = pyrazinamide; RIF = rifampin; RPT = rifapentine.

* Definitions of evidence ratings: A = preferred; B = acceptable alternative; C = offer when A and B cannot be given; E = should never be given.

† Definition of evidence ratings: I = randomized clinical trial; II = data from clinical trials that were not randomized or were conducted in other populations; III = expert opinion.

‡ When DOT is used, drugs may be given 5 days/week and the necessary number of doses adjusted accordingly. Although there are no studies that compare five with seven daily doses, extensive experience indicates this would be an effective practice.

§ Patients with cavitation on initial chest radiograph and positive cultures at completion of 2 months of therapy should receive a 7-month (31 week; either 217 doses [daily] or 62 doses [twice weekly]) continuation phase.

¶ Five-day-a-week administration is always given by DOT. Rating for 5 day/week regimens is AIII.

** Not recommended for HIV-infected patients with CD4⁺ cell counts <100 cells/μl.

*** Options 1c and 2b should be used only in HIV-negative patients who have negative sputum smears at the time of completion of 2 months of therapy and who do not have cavitation on initial chest radiograph (see text). For patients started on this regimen and found to have a positive culture from the 2-month specimen, treatment should be extended an extra 3 months.

Figure 1. TB drug regimens, from the ATS/CDC/IDSA Treatment of Tuberculosis statement.

The table below shows the estimated costs per patient of using the various TB treatment regimens.

TB Treatment Regimen Implementation Costs

<u>Regimen</u>		<u>Total Doses</u>	<u>Est. PHS Tot Med Cost</u>	<u>Estimated DOT Personnel Cost</u>	<u>Estimated Patient Productivity Loss</u>	<u>Est. Direct Costs</u>	<u>Est. Total Cost</u>	<u>Percent Cost Reduction From Daily Standard</u>	<u>Population</u>
Active TB, Initial phase									
1	2HRZE (300 mg, 600 mg, 1500 mg, 1200 mg)	40	\$235	\$984	\$1,195	\$1,219	\$2,414		
4	2HRE (300 mg, 600 mg, 1200 mg)	40	\$137	\$984	\$1,195	\$1,121	\$2,316	4.08%	
3	2HRZE3 (900 mg, 600 mg, 2500 mg, 2000 mg)	24	\$221	\$590	\$717	\$811	\$1,528	36.69%	
2	.5HRZE/1.5HRZE2 (300,600,1500,1200/900,600,3000,2800)	22	\$198	\$541	\$657	\$739	\$1,396	42.17%	
Active TB, Continuation Phase									
4a	7HR (300 mg, 600 mg)	155	\$173	\$3,813	\$4,630	\$3,985	\$8,616	-72.22%	
1a	4HR (300 mg, 600 mg)	90	\$100	\$2,214	\$2,689	\$2,314	\$5,003		
4b	7HR2 (900 mg, 600 mg)	62	\$78	\$1,525	\$1,852	\$1,603	\$3,455	30.93%	
3a	4HR3 (900 mg, 600 mg)	54	\$68	\$1,328	\$1,613	\$1,396	\$3,009	39.84%	
1b,2a	4HR2 (900 mg, 600 mg)	36	\$45	\$886	\$1,075	\$931	\$2,006	59.90%	
1c,2b	4HRPT1 (900 mg, 600 mg)	18	\$140	\$443	\$538	\$583	\$1,121	77.60%	
Active TB, Initial and Continuation Phases Together									
4/4a	2HRE/7HR	195	\$309	\$4,797	\$5,825	\$5,106	\$10,932	-47.39%	
1/1a	2HRZE/4HR	130	\$336	\$3,198	\$3,884	\$3,533	\$7,417		Drug Susceptible (DS)
4/4b	2HRE/7HR2	102	\$215	\$2,509	\$3,047	\$2,724	\$5,771	22.19%	
3/3a	2HRZE3/4HR3	78	\$289	\$1,919	\$2,330	\$2,208	\$4,538	38.82%	
1/1b	2HRZE/4HR2	76	\$281	\$1,869	\$2,270	\$2,150	\$4,421	40.40%	DS pts except HIV+ with <100 CD4
1/1c	2HRZE/4HRPT1	58	\$375	\$1,427	\$1,733	\$1,802	\$3,535	52.34%	DS pts, HIV-, non-cavitary, not culture positive at 2 mo.
2/2a	.5HRZE/1.5HRZE2/4HR2	58	\$243	\$1,427	\$1,733	\$1,670	\$3,402	54.13%	DS pts except HIV+ with <100 CD4
2/2b	.5HRZE/1.5HRZE2/4HRPT1	40	\$338	\$984	\$1,195	\$1,322	\$2,517	66.07%	DS pts, HIV-, non-cavitary, not culture positive at 2 mo.

Estimates provided by Suzanne Marks, MPH, MA

Personnel costs are estimates based on the Medicare allowable charge for a home DOT visit (\$49), converted to a cost (multiply by 0.502)

Patient productivity losses are estimated to be one quarter day's earnings, using average weekly earnings adjusted to include benefits

Direct costs are total costs minus patient productivity losses. Costs are in 2001 dollars

**UPDATE FROM THE
COMMUNICATIONS, EDUCATION,
AND BEHAVIORAL STUDIES
BRANCH**

**Update on Education and Training
Activities in the PARTNERS MDRTB
Project**

The PARTNERS TB Control Program is a consortium of health organizations brought together by Harvard University and is funded by a grant from the Bill and Melinda Gates Foundation to address the problem of drug-resistant TB in Peru. In addition, the PARTNERS program seeks to create an exportable model for other countries to use in their multidrug-resistant TB (MDRTB) control programs. The program has four objectives:

1. To demonstrate the success of the project and take it to scale in Peru.
2. To define the necessary infrastructure and establish it in Peru to sustain a successful integrated program independent of PARTNERS
3. To articulate the components of a replicable generic model, drawing on lessons from Peru and Russia.
4. To provide strategies and a demonstration platform to strengthen the global TB control effort

As the PARTNERS MDRTB project closes its third year, significant progress has been made and considerable challenges lie ahead. As the project expands from Lima to the rest of Peru, large numbers of health care personnel must be trained to adequately manage MDRTB patients. Five separate regional training sessions were held all over Peru in the spring of 2003. These sessions were conducted for physicians, nurses, and health promoters who serve as DOTS outreach workers.

Based on the education and training needs assessment that was conducted in spring 2001, many other activities have been

developed or planned. Some of the principal findings from the needs assessment: (1) training for HCWs on MDRTB is limited; (2) MDRTB educational materials for HCWs are lacking; (3) MDRTB training needs included knowledge and management of adverse reactions to second-line drugs, management of comorbid conditions, infection control, HCW-patient communication, and patient emotional support; (4) educational MDRTB materials for patients and their families are needed.

An MDRTB clinical management pocket guide for physicians was published in September 2003 to be used as a reference in clinical management of MDRTB and comorbid conditions, as well as adverse reactions. A series of trainings on TB infection control for health care workers has been scheduled for January 2004; these plans include the publication of a training module on infection control. Also in September, the project printed a patient education flipbook for MDRTB, which is designed to be used by health care workers in educating patients about MDRTB and the treatment process. The flipbook can improve provider-patient communication and ensure consistent information is delivered by the health care worker. In addition, health care workers will have a patient education pamphlet with information about MDRTB that can be provided to the MDRTB patients when they leave the health centers. This pamphlet will be printed in January 2004.

These advances and the development of these educational materials have taken place in the midst of a number of personnel changes within the Peruvian Ministry of Health, as well as in other PARTNERS member organizations. The most significant changes have taken place within the Ministry and include changes to the head of the National TB Program, and loss of staff for the TB program as health sector reform takes hold. Also, the Minister of Health of Peru was replaced in July 2003, and with the new Minister will come new personnel in

key leadership positions. The work of the PARTNERS project continues to move forward, but the changing faces signify a learning process for the new personnel and a readjustment for all involved.

The project continues to enroll new patients, expands to cover more of Peru, and seeks lessons learned and possible models in order to provide examples for other countries desiring to begin a DOTS-Plus program for the treatment of MDRTB.

—*Reported by Jacob Creswell, MPH
Div of TB Elimination*

UPDATE FROM THE INTERNATIONAL RESEARCH AND PROGRAMS BRANCH

Infection Control Efforts in Orel, Russian Federation

Against the backdrop of a major TB epidemic, the risk of TB among health care workers in Russia exceeds the risk in the general population more than 20-fold. Further, Russia has among the highest levels of multidrug-resistant TB (MDRTB) in the world. Patients who have MDRTB can remain infectious for prolonged periods because drugs are less effective in rendering these patients noninfectious. Thus, health care facilities should be particularly alert to the need for preventing transmission of *M. tuberculosis* in settings in which MDRTB patients reside or receive care. The occurrence of TB, including MDR TB, among health care personnel and prison guards in Orel heightens anxiety about institutional transmission. In response, CDC, the US Agency for International Development (USAID), the World Health Organization (WHO), and Russian partners are implementing a program to combat drug-resistant TB, which includes infection control measures to protect health care personnel, patients, prison personnel, and other prisoners from nosocomial TB transmission.

To initiate this infection-control effort, Dr. Paul Jensen (then with CDC's National Institute for Occupational Safety and Health [NIOSH], currently with NCHSTP/DTBE), Dr. Peter Cegielski (DTBE), and Dr. Ernie Moyer (NIOSH) presented an infection control training course to civilian and prison staff on October 17, 2001, in Orel. After the training course, infection control assessments of the Orel Dispensary and of a pre-trial detention center were conducted. The infection control assessments involved "following" the patients and specimens throughout the facility and observing administrative controls, environmental controls, and respiratory protection efforts along the way. Recommendations were presented to Dr. Boris Yakovlevich Kazionny, Chief TB Physician. Dr. Kazionny immediately implemented many administrative controls (separating smear-positive from smear-negative patients, minimizing worker exposures where possible, scheduling procedures for smear-positive patients after those for smear-negative patients, and continued case identification among workers). In addition, a respiratory protection program (use of respirators) was initiated, and workers in high-risk environments are wearing locally available FFP2 respirators certified by the European Committee for Standardization (CEN, Comité Européen de Normalisation). CEN-certified respirators undergo a total inward leakage test on a human subjects test panel to measure respirator fit characteristics as part of the certification criteria. NIOSH-certified N-95 filtering facepiece respirators are not required to meet any fit test criterion. The two models of CEN-certified respirators fit better than two models of NIOSH-certified N-95 filtering facepiece respirators used in Orel.

Mr. Gustavo Aquino, a CDC public health advisor assigned to Russia, developed a grant application to implement infection controls, which was funded by USAID to assist in the implementation of environmental controls and respirators in

both the civilian and the prison sectors. To date, most of our efforts have been focused on the Orel Central Tuberculosis Dispensary; however, outreach to the prison sector has begun.

Workers at the Orel Dispensary and at the local pre-trial detention center have been fit tested for respirators. At each facility, staff members were given qualitative fit-test kits (Bitrex™) and a lead professional was trained to conduct routine respirator fit testing. The lead fit-test professional for each facility has continued to fit-test workers and distribute respirators as needed. One question often asked of us was, "How long can we use a respirator?" During return trips, we attempted to collect data to answer this question. Workers were fit-tested again with their old respirator and fit-tested with a new one. Nearly 80% of the workers passed on the retest of the old respirator, even after 3 months of intermittent usage. The old respirators were then tested by NIOSH to evaluate their filter efficiency. With the exception of one respirator, all would have passed the NIOSH certification test for filter penetration. The one that failed did so only by a few 100ths of a percent (note, five percent penetration is allowed in NIOSH certification). The biggest weakness in the respirators used (3M 9320 and 3M 9322) appeared to be the thin rubber bands used for head straps. The straps tend to stretch permanently after one use. Workers tied knots and did other innovative things to keep a tight seal between the respirator and face. Our recommendation is generally to follow manufacturer and NIOSH recommendations for respirator reuse. NIOSH states that the service time (i.e., reuse) is "limited by considerations of hygiene, damage, and breathing resistance." Absent that, each worker can develop his or her own change-out schedule based on the physical and hygienic condition of the respirator, the fit of the respirator (which can be verified by on-site staff), and his or her comfort level in reusing respirators. Unfortunately, resource-limited countries do not have the luxury of unlimited

supplies of respirators and rely on their reuse. Another frequently asked question has been, "How can we disinfect these respirators prior to reuse?" CDC/NIOSH has initiated a research effort to answer this important question.

Three environmental controls were recommended. Shielded, upper-room ultraviolet germicidal irradiation (UVGI) was recommended in certain areas (unshielded UVGI is commonly used when no workers or patients are present). Russian regulations specifically state that unshielded UVGI can only be used for specific amounts of time and only when the rooms are unoccupied. The regulations do not mention using shielded UVGI with people present and operating 24 hours a day, 7 days a week. Though this technology is used in the United States and many other countries, there is a reluctance in Russia to use such technology (more on UVGI will be presented in a future issue of *TB Notes*). An additional control is the use of ventilated booths or rooms for sputum induction or collection. A design was presented to local manufacturers, and after completion of the process of tender, a local company was awarded a contract to construct 25 sputum booths. The booths will be distributed throughout the region (both civilian and prison sectors). Finally, ventilation of the infectious patient areas and procedure rooms was recommended. Preliminary plans and estimates have been collected, and negotiations with the local administration for additional funding are ongoing. We hope to start the ventilation project by spring 2004.

The Russian Federation is an enjoyable region in which to work because the hospital administrators and staff, prison system administrators and staff, local governmental administrators, USAID staff, and WHO staff are dedicated to the prevention of the spread of TB within their respective facilities. Because of the raised awareness of TB and the methodical implementation of selected infection-control interventions, Orel

TB Dispensary will be a model infection control center for the rest of the Russian Federation.

—Reported by Paul Jensen, PhD, PE, CIH
Div of TB Elimination

TRAINING AND EDUCATIONAL MATERIALS

The Francis J. Curry National Tuberculosis Model Center (CNTC) has recently released five new clinical and programmatic education resources. These new materials can be ordered or viewed online via CNTC's Web site, www.nationaltbcenter.edu. They come in multiple formats — Web-based, compact disk (CD), and print — and are suitable for self-study, for program development, and in support of instructor-led training. All are free of charge. A short description of each product follows.

Contact Investigation in the Work Place Toolbox (CD and Web-Based)

Designed for TB controllers, program managers, and public health nurses, this toolbox is a compilation of instruments and resources for use when a contact investigation extends into a worksite. Using these materials, health department staff will be able to-

- follow step-by-step instructions for implementing contact investigation and follow-up
- develop protocols for including a worksite in an investigation
- adapt standard templates for local use

The toolbox provides letters, forms, policies, and referenced materials designed to be downloaded and modified.

Diagnosis and Treatment of Latent Tuberculosis Infection: An Audio Presentation (CD with Listener's Guide)

This product is an update of the Center's previous clinical education tool, "Diagnosis

and Treatment of LTBI in the 21st Century." This revised tool addresses recent changes and recommendations for the diagnosis, treatment, and management of latent tuberculosis infection (LTBI). The listener's guide provides a series of tables to use to determine risk factors for LTBI, criteria for interpreting the tuberculin skin test, and guidelines for treatment regimens.

Contact Investigation: A Case Study for Instructors (Web-Based)

This case study is the first in a series of online instructional resources for TB control program staff who are responsible for teaching others how to conduct an investigation for contacts to an active case of TB. The case study is designed to be one component of an instructor's larger training curriculum on contact investigation. The instructor can use the case study to challenge learners to apply course concepts to a "real life" situation and provides trainers with instructor and participant tools.

The "Instructor Files" contain-

- An annotated *Instructor's Version* of the case study
- PowerPoint slides
- Masters for overhead transparencies
- An instructor's evaluation form

The "Participant Files" contain-

- One reproducible master copy of *Participant's Version* of the case study
- One reproducible master copy of the *Participant's Answer Key*

LTBI: A Case Study for Instructors (Web-Based)

This is the second in a series of online case study training resources for instructors, and was developed for training clinicians about TB disease and latent TB infection (LTBI). The case study is designed to be one component of an instructor's larger training curriculum. The instructor can use the case study to challenge learners to apply course concepts to a "real life" situation.

This case study focuses on the proper

procedures for diagnosing and treating persons with LTBI so that new cases of active TB can be prevented. Key issues include the identification of persons at increased risk for the development of TB once infected with *M. tuberculosis*; administration of tuberculin skin tests and interpretation of the results; ruling out active TB; treatment options for LTBI; and monitoring patients being treated for LTBI.

The "Instructor Files" contain-

- An annotated *Instructor's Version* of the case study
- PowerPoint slides
- Masters for overhead transparencies
- An instructor's evaluation form

The "Participant Files" contain-

- One reproducible master copy of *Participant's Version* of the case study
- One reproducible master copy of the *Participant's Answer Key*

Pediatric TB: A Guide to the Gastric Aspirate Procedure (Web-Based)

This online resource was developed to educate clinicians about gastric aspirate (GA) collection. Clinicians are provided an overview of the procedure and given a step-by-step guide for gastric aspiration. Using the resource, clinicians will be able to-

- Determine when to use the GA procedure
- Identify the steps to collect GA
- List the tools needed to collect GA

In addition, clinicians can view online a video of the GA procedure (versions for high-speed and dial-up systems), access sample policies and procedures for GA, and download educational materials for providers and families.

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

NEW CDC PUBLICATIONS

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PERSONNEL NOTES

Philip Baptiste, MEd. accepted the position of Project Manager with the DTBE Information Technology and Statistics Branch (ITSB) effective September 22, 2003. Beginning in 1997, Philip had served in Atlanta, Georgia, as a Program Consultant with the Division of Cancer Prevention and Control (DCPC). In 2002, he served with the Public Health Practice Program Office (PHPPO) as Technical Consulting Officer for the Health Alert Network (HAN). Philip began his career with CDC in 1989 as a disease intervention specialist (DIS) with the Division of Sexually Transmitted Diseases Prevention (DSTDP), assigned to the Fulton County (Georgia) Health Department. He was reassigned to the Mecklenburg County Health Department

in 1991 in Charlotte, NC, where he worked as a DIS until his promotion to front-line supervisor, and transfer to the Tampa, Florida, Hillsborough County Health Department in 1993. In 1995, he transferred to another DSTDP front-line supervisor assignment in Kansas City, MO. Philip is a member of the CDC/ATSDR Noontime Toastmasters and the Watsonian Society of public health advisors.

Regina Bess has been selected as a Health Education Specialist in DTBE's Communications, Education, and Behavioral Studies Branch (CEBSB). No newcomer to CEBSB, Regina served as a Visual Information Specialist in the Division (from 1993 to 1996 and then from 2000 to 2003), but began taking on new responsibilities and duties beginning November 30.

Sandy Browning has joined the Clinical and Health Systems Research Branch of DTBE in an Epidemiologist position. She will coordinate activities involved in the field testing and evaluation of the new *QuantIFERON* test for tuberculosis. She began her CDC laboratory career in 1976; the majority of her research work was done in HIV/AIDS. In 1996 she was selected for the Management Leadership Development Program and worked with the National Vaccine Program Office as a communication/policy intern for one year. Prior to joining DTBE, Sandy worked for NCID/OD as database coordinator of the survey for US laboratories retaining wild poliovirus materials. Identification of the laboratories retaining such materials completes the US Phase I portion of global polio eradication.

Gail Burns-Grant has been selected as a Team Leader in the Field Services and Evaluation Branch (FSEB), Field Operations Section I. Gail came to work with DTBE in August 1991, after serving in several assignments in the CDC Sexually Transmitted Disease (STD) program. Gail was assigned to a multidisciplinary team at

Jackson Memorial Hospital, Miami, Florida. In addition to these responsibilities, she served as the acting TB program manager for Dade County. Gail was selected in 1993 for a first-line supervisory position in the new public health associate training program in New York City (Harlem and Washington Heights). While assigned to NYC, Gail was selected as the regional manager for the borough of Brooklyn, TB Outreach Services. In 1996, Gail was selected as a project officer in the National Center for Injury Prevention and Control, Family and Intimate Partner Violence Team. After a year, Gail returned to DTBE as a program consultant and has had responsibilities for the Southeast, Northeast, Mid-Atlantic, and Southwest states. Gail assumed the responsibilities of Team Leader, DTBE, FOS I, in August 2003 after returning from an IETA assignment to the Global AIDS program in South Africa, where she served for 3 months as the programs' deputy director. In addition to her project officer responsibilities for the Southeast states, she is working with project areas funded by CDC to intensify TB prevention, control, and elimination activities in African-American communities.

Puneet Dewan, MD, joined the Field Services and Evaluation Branch as the Field Medical Officer assigned to the San Francisco Department of Public Health on December 1, 2003. Puneet has served as an Epidemic Intelligence Service Officer with DTBE's International Research and Programs Branch and was the project officer for a variety of TB epidemiologic research and program-building efforts in the former Soviet Union and Southeast Asia. He has also had the opportunity to serve as a WHO consultant evaluating TB program collaborations with the private medical sector in India. Before joining CDC in 2001, he was an internal medicine resident at the University of Washington, Seattle, and holds an MD from the University of California at Los Angeles (UCLA).

Eduard Eduardo, MPH, has joined DTBE in the Surveillance, Epidemiology, and Outbreak Investigations Branch (SEOIB). Eduard, a contractor with Westat, will be the project coordinator for the TB Epidemiologic Studies Consortium (TBESC) Task Order 5, "Prevalence of LTBI in high-risk populations in the US" and Task Order 13, "Factors associated with acceptance of, adherence to, and toxicity from treatment for LTBI." Eduard received his MPH in international health from the Rollins School of Public Health at Emory University. For his master's thesis, he worked with staff from CDC's Lead Poisoning Prevention Branch (LPPB) on a study examining blood lead levels and risk factors for lead poisoning in a Mexican smelting community. After completing his thesis, he continued to work in LPPB. He then completed an Association of Schools of Public Health (ASPH) fellowship with CDC's National Immunization Program on the epidemiology and surveillance of measles, mumps, and rubella.

Stefan Goldberg, MD, relocated from Seattle, Washington, where he had been a staff physician in the Seattle & King County Public Health TB Clinic since 1991. Recently, he served as Acting TB Program Director there until the end of 2002. Stefan is from Boulder, Colorado, and attended Columbia College in New York City, where he majored in comparative literature. He attended medical school at the University of Colorado in Denver, graduating in 1981. He completed his residency in internal medicine at Kings County Hospital in Brooklyn, NY, then worked for a year in Nepal at the Pheriche Aid Post of the Himalayan Rescue Association, near the base of Mt. Everest. He performed emergency room work for several years between climbing expeditions, then completed a fellowship in pulmonary and critical care medicine at the University of Washington in Seattle, studying high-altitude physiology. After about 2 years divided between private practice pulmonary medicine and part-time TB clinic work, he gradually increased his work in the TB

program, participating in several CDC-sponsored studies, including work with the TB Trials Consortium (TBTC), contact investigations among foreign-born persons, and the TB Epidemiologic Studies Consortium (TBESC).

Maryam Haddad, MSN, MPH, is a senior epidemiologist in the Outbreak Investigations Team, Surveillance, Epidemiology, and Outbreak Investigations Branch (SEOIB). Maryam is a board-certified family nurse practitioner and has a masters degree in public health from Emory University. She completed her Epidemic Intelligence Service (EIS) assignment at the Utah Department of Health in June 2003, and joined SEOIB in July 2003. During her tenure as an EIS Officer, Maryam established and co-managed public health surveillance for the 2002 Olympic and Paralympic Winter Games; performed serosurveys of exposed farmers and veterinarians after a rabbit calcivirus outbreak; responded to Norwalk virus-like outbreaks in a school, a ski resort, and a buffet restaurant; worked on a West Nile Virus outbreak in Louisiana and a Hepatitis A outbreak in rural Utah; and performed a serosurvey following a coccidioidomycosis outbreak. Maryam also brings strong analytical skills to her new position, having worked on studies of risk factors for invasive *Streptococcus pneumoniae* disease in Utah children and a possible increase in pediatric dental abscesses. Maryam is a Commissioned Officer in the US Public Health Service, and is fluent in French and Spanish.

Elizabeth Kalayil, MPH, is the newest addition to the Communications, Education, and Behavioral Studies Branch (CEBSB). Elizabeth joined DTBE as an Association of Schools of Public Health (ASPH) fellow in Health Education and Health Communications on September 2, 2003. She graduated in May 2002 from Emory University in Atlanta with an MPH degree in international health. While in graduate school, Elizabeth completed an internship

with the World Health Organization (WHO) Regional Office for Africa, where she served as a liaison between WHO and the Zimbabwe AIDS Prevention and Support Organization in the implementation of the Psychosocial Support (PSS) Project for HIV-infected pregnant women. Elizabeth comes to us from Kentucky, where she was working for the Kentucky Refugee Ministries as an HIV Program Assistant. She will be working on a number of health education and communication projects.

Jodi Keyserling, MPH, has joined DTBE's Surveillance, Epidemiology, and Outbreak Investigations Branch (SEOIB) as a Public Health Prevention Service (PHPS) fellow and will be working on the Surveillance Team for the next year. She recently completed her MPH from the Rollins School of Public Health at Emory University and has a bachelors degree in public policy analysis from the University of North Carolina. Before joining the PHPS program, Jodi worked as a legislative assistant for Congressman David Price; as a research associate with CARE in Washington, DC; as a project assistant for the DeKalb County Board of Health Refugee Clinic; and as a fellow with the Oak Ridge Institute for Science and Education (ORISE) with CDC's Division of Reproductive Health. She will be working on the TB surveillance public-use data set as well as other Surveillance Team Projects. Jodi is a native of Washington, DC, and an avid runner.

John Kuharik is retiring from CDC as of January 2, 2004. During his 31 years as a public health advisor with CDC, John has been assigned to several state and city health departments, starting with the Sexually Transmitted Disease (STD) control programs in New York City and New Jersey, in the early 1970s. His career in TB control began in 1976 in western Pennsylvania, where he worked for 2 years before being transferred to Alcorn County, Mississippi, to assist in the control of a community outbreak of multidrug-resistant TB. John also participated in the TB screening of

Cuban refugees at Fort Chaffe, Arkansas, at the time of the Mariel boatlift in 1980. John served as Director of the TB Control Program in the Chicago Department of Public Health from 1981 through 1996, and in the early 1990s served as co-chair of the Countywide TB Task Force. He was successful in implementing a modern TB case register system, directly observed therapy for hard-to-reach patients, short-course chemotherapy, computerization of the TB central office and clinics — including an online network — and prevention programs targeted toward high-risk groups. In 1992 John accepted, on behalf of the Chicago TB program, the Bureau of Public Health Outstanding Achievement Award for integrating TB prevention services throughout the Chicago Health Department neighborhood health centers. Since 1996, John has served as the Chicago TB program's senior public health advisor, involved in training of new staff, database evaluation, TIMS, and the implementation of community outreach programs. In 1998 he served a temporary duty assignment as Director of Primary Care for the Chicago HIV Program. In 2003 he assisted with the control of a TB outbreak among a homeless population in Seattle, Washington. John graduated from Rider University in 1971, and served 3 years in the US Army, including the 95th Evacuation Hospital in DaNang, South Vietnam, in 1968. John and his wife Jessie are avid bicyclists and have plans for bicycle adventures in the western United States and Europe.

Bruce MacLachlan, MEd, joined the Field Services and Evaluation Branch (FSEB) as the program consultant for the Midwestern States (Kansas, Nebraska, South Dakota, North Dakota, Minnesota, Iowa, and Missouri) on November 17, 2003. Bruce comes to DTBE from the Office of Terrorism Preparedness and Emergency Response of CDC where he was a senior public health advisor in the Operations Division with responsibilities for training and exercise activities for the Emergency Response Team. Prior to that, he spent a number of

years working in international health activities with both the Global Immunization Division of the National Immunization Program (NIP) and the Division of Global Health of the Epidemiology Program Office (EPO). During that time he was project officer on a number of projects in Africa and the Middle East. He also had assignments with USAID, WHO, and other international health organizations on a number of relief and development projects. Bruce started his career in public health in 1974 in Kansas City with the Sexually Transmitted Disease (STD) program, followed by three field assignments with the San Francisco and Los Angeles project areas in California. Before coming to Atlanta he spent 2 years working on CDC prevention projects in Micronesia with the former Trust Territories. Bruce is a graduate of the University of Notre Dame and also holds a masters degree in education from Ohio University.

Kelly McCarrier, MA, MPH, has joined the DTBE Clinical and Health Services Research Branch (CHSRB) as an ASPH fellow with the Health Services Research (HSR) team. He recently completed two complementary graduate degree programs, earning an MPH in health education and behavioral sciences, as well as an MA in applied health psychology from the University of Arizona. With 6 years of experience in psychological, public health, and evaluation research, Kelly has worked on a wide range of projects, including his most recent position as project manager of both the Arizona Dept. of Health Services Adult Tobacco Survey and the comprehensive program evaluation of a county DUI / Drug Court Initiative. Kelly also has deep interests internationally. During his undergraduate studies, he pursued studies abroad in east Africa, where he investigated traditional medicine and healing practices of the Maasai and Kikuyu tribal groups, as well as local medicinal plant availability. Kelly will be involved in the ethnographic foreign-born study, as well as other HSR team projects and Evaluation

Working Group activities.

Lolem Ngong, MPH, joined the Surveillance, Epidemiology, and Outbreak Investigations Branch (SEOIB) on December 8, 2003. A contractor, she is the new project coordinator for Task Order 9, "The epidemiology of TB in the foreign-born," within the TB Epidemiologic Studies Consortium and will be working with Dolly Katz, PhD.

Lynelle Phillips, MPH, Nurse Consultant for the Missouri Department of Health and Senior Services, has accepted the position of public health advisor assigned to the Missouri Division of Tuberculosis Disease Elimination. Lynelle began her career at CDC in 1991 as an Environmental Health Scientist with the Agency for Toxic Substances and Disease Registry. She then served as the Nurse Consultant for the Vaccine Safety and Development Activity in the National Immunization Program until 1996, when she moved to Missouri. She has been employed by the State of Missouri as the TB Nurse Consultant for the past 7 years. She has a masters degree in public health from Emory University in Atlanta and has worked as a critical care nurse in cardiac units in Columbus, Ohio, and Atlanta, Georgia. She will continue to serve the Missouri Department of Health and Senior Services, and began her new role as Public Health Advisor on September 8, 2003.

Paul Regan has joined the Field Services and Evaluation Branch (FSEB) as a public health advisor assigned to the Alabama Department of Health. In this position, Paul will support and provide disease intervention activities in an eight-county area. Additional duties will include monthly interaction at the division level, where Paul will assist in central office projects. Division-level projects will include export, analysis, and presentation of epidemiologic data from each of Alabama's 11 public health areas. Paul comes to DTBE from New Orleans, Louisiana, where he worked in the TB

control program as a Disease Intervention Specialist II. His assignments included conducting contact investigations, case management, and health seminars. Prior to that, Paul worked with the Louisiana Dept. of Corrections for 8 years as a Probation and Parole Officer.

Tamara Roman of the Surveillance, Epidemiology, and Outbreak Investigations Branch (SEOIB) has been selected for a new position as Management and Program Analyst in that branch, which became effective November 30, 2003. In this new role, Tammy is taking over the role that Kelly Martin held when she was here, including (but not limited to) issues related to clerical, administrative, and policy practices; serving as the branch's primary contact on personnel actions (including performance evaluation); records management; and contract invoicing issues. Tammy has been a Program Operations Assistant in SEOIB since July 2001, when she came to CDC from the private sector.

Jo Ann Shoup, MSW, MS, has joined the Surveillance, Epidemiology, and Outbreak Investigations Branch (SEOIB) as a Public Health Prevention Service (PHPS) fellow. Jo Ann will be with SEOIB for one year working with the Epidemiology Team on the project "Applying a new conceptual framework to evaluate TB surveillance and action and measure costs: developing state-wide demonstration projects in Florida and Texas." Jo Ann comes to SEOIB with experience in clinical psychology, and has a masters degree in social work (MSW) and a master of science degree in health care policy and management.

Anna Teplinskaya, MD, MPH, joined the Clinical and Health Systems Research Branch of DTBE as a health care analyst. Anna, who is originally from Ukraine, earned her medical degree from Ukraine Medical Academy and a masters degree in public health from Emory University in Atlanta, Georgia. As a physician, she worked for many years with patients (Chernobyl

workers) who received excessive radiation during the Ukraine Chernobyl disaster. Her work included research and evaluation of public health interventions for posttraumatic stress disorder, depression, and cardiovascular disorders resulting from severe stress. Following graduation from Emory University she worked as a postdoctoral fellow in the Emory Cardiology Division.

Melissa Valdez, MPH, a contractor with Westat, has joined the DTBE Surveillance, Epidemiology, and Outbreak Investigations Branch (SEOIB), and will be working as project coordinator for the TB Epidemiologic Studies Consortium (TBESC) Task Order 8, "A national genotyping registry for a molecular epidemiological analysis of multidrug-resistant *M. tuberculosis*, USA and/or Canada." Melissa recently graduated from the Rollins School of Public Health at Emory University with a masters degree in public health in epidemiology, and did her thesis work on "A case-control molecular epidemiology study assessing the sociodemographic and clinical risk factors associated with the *M. tuberculosis* W-Beijing family," with advisors from the Division of AIDS, STD, and TB Laboratory Research (DASTLR) and SEOIB. Melissa is not new to CDC as she has been working as a fellow with the Oak Ridge Institute for Science and Education (ORISE) since May 2002 in the Retroviral Diseases Branch at CDC's National Center for Infectious Diseases (NCID).

Bridget Young, a contractor with Westat, will be working with the Surveillance, Epidemiology, and Outbreak Investigations Branch (SEOIB) as a research assistant for TBESC Task Order 10, "Identifying and overcoming barriers to treatment adherence for latent TB infection (LTBI) and active TB disease among high-priority populations in the Southeast US." She graduated in December 2002 with a bachelor of science degree in applied biology from the Georgia Institute of Technology.

IN MEMORIAM

Clyde Edward Turner, Jr., of Decatur, GA, died at the age of 59 on Friday, October 17, 2003, as a result of an automobile accident. He was on duty at the time of the accident, carrying out his duties as an outreach worker. He was employed by the State of Georgia Health Department, where he worked with tuberculosis patients. In 1992 Ed began serving as an outreach worker with the TB program of the Fulton County Department of Health and Wellness. He worked tirelessly and with compassion in providing contact tracing, DOT, and follow-up of lost or recalcitrant patients. Several years later he transferred to the DeKalb County Board of Health where he served as outreach worker and hospital liaison until his death.

Ed graduated with honors from Druid Hills High School and received a merit scholarship to Georgia Tech. Later he received a masters degree from Emory University in Social Work. Ed Turner was an active member of the Religious Society of Friends in Decatur, Georgia. Ed was a man full of compassion and love for people and the patients in his care. He will be greatly missed.

CALENDAR OF EVENTS

February 4-8, 2004

**26th Annual Keystone Update:
Allergy/Clinical Immunology, Asthma,
and Pulmonary Medicine
Keystone, Colorado**

Tel: (800) 844-2305 or (303) 398-1000

Web site for information or to register:

<http://www.njc.org/education/keystone8.html>

February 23-24, 2004

**TB Case Management for Nurses
Newark, New Jersey**

NJ Medical School National TB Center

Contact: Education and Training Dept.

Tel: (973) 972-0979

Web site for information:

http://www.umdni.edu/ntbcweb/et_frame.html

February 25-28, 2004

**The Denver TB Course
Denver, Colorado**

Coordinator: Catheryne Queen

Tel: (303) 398 1700

Fax: (303) 398-1806

Web site for information:

<http://nationaljewish.org/tbcourse.html>

February 26-28, 2004

**2004 IUATLD North American Region 8th
Annual Conference - Working Without
Borders to Stop TB**

Austin, Texas

Contact: Kitty McAndrews

Tel: (312) 243-2000

Fax: (312) 243-3954

E-mail: TB@alamc.org

Web site for information or to register:

<http://lungchicago.org/societies/IUATLD.asp>
or www.iuatld.org

February 29-March 3, 2004

**NCID 2004 International Conference on
Emerging Infectious Diseases
Atlanta, Georgia**

National Center for Infectious Diseases,
CDC

Web site for information or to register:

<http://www.cdc.gov/iceid/>

March 4-7, 2004

**International Society for Infectious
Diseases 11th Annual Conference
Cancun, MEXICO**

International Society for Infectious Diseases
(ISID)

Web site for information or to register:

<http://www.isid.org/>

March 29-April 6, 2004

**IUATLD International TB Course
Granada, NICARAGUA**

Deadline for application: Dec. 31, 2003;

Official language: Spanish

E-mail: courses@iuatld.org

Web site for information:

http://www.iuatld.org/full_picture/en/frameset/frameset.phtml

[t/frameset.phtml](http://www.iuatld.org/full_picture/en/frameset/frameset.phtml)

April 12-30, 2004

**IUATLD International TB Course
Ho Chi Minh City, VIETNAM**

Deadline for application: Jan. 31, 2004

E-mail: courses@iuatld.org

Web site for information:

http://www.iuatld.org/full_picture/en/frameset/frameset.phtml

April 19-21, 2004

**Effective TB Interviewing and Contact
Investigation**

Newark, New Jersey

NJ Medical School National TB Center

Contact: Education and Training Dept.

Tel: (973) 972-0979

Web site for information:

http://www.umdni.edu/ntbcweb/et_frame.html

April 21-24, 2004

**The Denver TB Course
Denver, Colorado**

Coordinator: Catheryne Queen

Tel: (303) 398-1700

Fax: (303) 398-1806

Web site for information:

<http://nationaljewish.org/tbcourse.html>

May 21-26, 2004

**ATS 2004: American Thoracic Society
International Conference**

Orlando, Florida

Web site for information:

<http://www.thoracic.org/ic/ic2004/conference.asp>

June 23-26, 2004

**2004 IUATLD European Region 3rd
Annual Conference**

Moscow, RUSSIA

E-mail: gbmigliori@fsm.it

Web site for information: The 3rd

Conference of the UNION

Attachment

The current Advisory Council for the
Elimination of TB roster is attached.