



DEPARTMENT OF HEALTH & HUMAN SERVICES
Public Health Service



TB Notes
No. 1, 2002

Dear Colleague:

The Advisory Council for the Elimination of Tuberculosis (ACET) met in Atlanta on February 6 and 7, 2002. Following are a few highlights: After the NCHSTP Director's report, I provided updates on DTBE activities that would not be covered in the ACET agenda, such as the first meeting of the TB Epidemiologic Studies Consortium in December 2001, the TIMS summit with NTCA in November 2001, and progress in the areas of education and training, outbreak investigations, and international technical assistance. Drs. Masae Kawamura, TB Controller for San Francisco, and Mark Lobato of the Field Services Branch then discussed the report being prepared on detention of foreign-born TB patients by the Immigration and Naturalization Service (INS); ACET approved the report's recommendations to improve treatment outcomes among INS detainees. The recommendations are as follows: "To reduce the risk of exporting or re-importing persons with active TB identified while in INS custody, ACET recommends to the Departments of Health and Human Services and Justice that they form an interagency policy group involving other key organizations and entities to work toward a consensus on the following measures: 1) Explore the feasibility of treating INS detainees in the United States until TB is cured in the least restrictive setting. Consideration should be given to changing or amending current policies or federal laws for detainees... 2) Work with professional correctional associations to improve adherence to local public health laws and CDC guidelines... 3) Enact policies requiring report of cases and suspects in INS custody prior to the transfer or deportation of an INS detainee with TB... 4) Expand the medical hold authority of the Division of Immigration Health Services..." The report will be revised for submission to the *CDC Morbidity and Mortality Weekly Report (MMWR)*. Dr. Elsa Villarino of the Research and Evaluation Branch reported that DTBE plans to summarize the initial recommendations for using the Quantiferon[®] test, which was approved last November by the Food and Drug Administration as an aid in the diagnosis of latent TB infection. Dr. Renee Ridzon of the Surveillance and Epidemiology Branch (SEB) discussed the meeting that was held on January 23 and 24 in Atlanta to obtain comments from outside consultants on the proposed revisions to CDC's "Guidelines for preventing the transmission of *Mycobacterium tuberculosis* in health-care facilities, 1994" (*MMWR* 1994;43[No. RR-13]). The meeting was productive; we currently have no firm publication date for the revised guidelines. Related to this, OSHA has reopened the docket for public comments on the section of their Standard which deals with TB infection control. In a session on TB elimination in the Southeastern states and on racial and ethnic disparities, Dr. George Counts of the CDC's Division of Sexually Transmitted Diseases reported on that division's goal of eliminating racial health disparities as part of its Syphilis Elimination Plan. Mr. Lex Gibson discussed the Southeast TB Strategic Plan

and disparity issues for African Americans. This is an important area of concern for many TB controllers as well as for CDC, and may warrant a separate meeting in the future to address the disparity in TB risk in African Americans and other racial and ethnic minorities. An update on TB laboratory capacity was followed by an update from Dr. Peter McElroy of SEB on the reported adverse events associated with taking 2 months of rifampin and pyrazinamide (2RZ) to treat latent TB infection (LTBI). To date, CDC has received reports of adverse events related to any LTBI treatment in 132 persons. Of these, 35 persons met the case definition for having adverse events associated with 2RZ (liver injury from 2RZ resulting in admission to a hospital, or death). Of these 35 persons, 7 died. To date, CDC staff members have investigated 28 cases, including 6 of the fatalities. No risk factors for death have been identified thus far. CDC's revised recommendations for the use of 2RZ for the treatment of LTBI are as follows: 1) The 2-month RIF-PZA treatment regimen for LTBI should be used with caution, especially in patients also taking other medications associated with liver injury and those with alcoholism. 2) For persons not infected with HIV, 9 months of daily INH is still the preferred treatment for LTBI; 4 months of daily RIF is an acceptable alternative. Two months of RIF-PZA may be useful when the completion of longer treatment courses is unlikely and when the patient can be monitored closely. 3) Available data do not suggest excessive risk for severe hepatitis associated with RIF-PZA treatment among HIV-infected persons. However, experience from trials may not translate to all clinical practice settings, and it may be prudent to use 9 months of daily INH for treatment of HIV-infected persons with LTBI when completion of treatment can be assured. 4) No more than a 2-week supply of RIF-PZA should be dispensed at a time (with a PZA dose not exceeding 20 mg/kg per day and a maximum of 2 gm/d) to facilitate periodic clinical assessments. Patients should be reassessed in person by a health care provider at 2, 4, and 6 weeks of treatment for adherence, tolerance, and adverse effects, and at 8 weeks to document treatment completion. 5) Serum aminotransferase and bilirubin levels should be measured at baseline and at 2, 4, and 6 weeks of treatment in patients taking RIF-PZA.

CDC has several new publications available or in progress. On Friday, February 8, the summary of U.S. TB cases reported in 2000 was published in the *MMWR*. The article was initially scheduled for publication in November 2001, but was rescheduled after *MMWR* required publication of updates on anthrax and bioterrorism investigations. The summary is based on data from the national TB surveillance system and provides data for 2000 with comparisons to previous years, through 1992. Much of this information has been published in tabular format in the DTBE national surveillance report, *Reported Tuberculosis in the United States, 2000*, and is also available on DTBE's Web site at www.cdc.gov/nchstp/tb/surv/surv2000/default.htm. Also, Dr. Mary Reichler has an article entitled "An evaluation of investigations conducted to detect and prevent transmission of tuberculosis" in the February 27, 2002, issue of the *Journal of the American Medical Association*. Thirdly, the most recent statement on the treatment of TB is now in its final draft and is scheduled for publication later this year in the *American Journal of Respiratory and Critical Care Medicine*. This document, which is a joint statement of the CDC and the American Thoracic Society (ATS) and is also

cosponsored by the Infectious Diseases Society of America, will update the 1994 ATS/CDC guidelines.

As previously announced, the 4th World Congress on Tuberculosis will be held in Washington, DC, June 3-5. Cosponsored by CDC, the National Institutes of Health, and the World Health Organization/Special Programme for Research and Training in Tropical Diseases, the Congress will evaluate the state of the global TB epidemic since the last TB World Congress, which was held in 1992; review the status of TB research; and identify research gaps. The meeting, which will cover fundamental, translational, and operational research topics, should be of interest to global TB control officials, TB researchers, health systems services researchers, policymakers and funders, as well as infectious disease and pulmonary physicians. The Program Committee invited researchers to submit abstracts, which were due by March 1, and notification of acceptance will be sent out on or about April 1. For international travelers only, a limited amount of travel support may be available for those presenting posters or "late-breaker" talks. Detailed information regarding the meeting program can be found at the Web site www.niaid.nih.gov/dmid/tuberculosis/tbcongress/.

World TB Day is observed every year on March 24. This annual event commemorates the date when Robert Koch announced his discovery of the microbe that causes TB. Around the world, nongovernmental organizations and others take advantage of the increased interest that World TB day generates to describe their own TB-related problems and solutions, and to support worldwide TB control efforts. I hope that each year you are taking the opportunity afforded by this globally recognized event to garner press coverage of your local TB problems and concerns and to involve others in the fight to eliminate TB — a fight that we can and must win, and that we will win, through all of our continued dedicated efforts! Now is the time to grasp a vision; a vision of coming together on World TB Day in the near future to celebrate the elimination of TB in this country.

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.

TB Notes

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Division of TB Elimination ♦ National Center for HIV, STD, and TB Prevention

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HIGHLIGHTS FROM STATE AND LOCAL PROGRAMS

Housing Homeless TB Patients in California

Homelessness has long been recognized as an important predictor of poor adherence to TB therapy. During the years from 1994 to 1996, the California Department of Health Services (CDHS), TB Control Branch (TBCB), received Report of Verified Case of TB (RVCT) forms that identified an average of 339 (7.36%) TB patients as having been homeless each year.

Homeless patients are among the most difficult to cure because they are often difficult to locate. In order to ensure that patients could be located for the administration of consistent directly observed therapy (DOT) and thereby complete therapy within 12 months, TBCB decided that a housing component should be added to the TB control program.

In 1996, at the behest of the California Tuberculosis Controllers Association and the California Conference of Local Health Officers, TBCB proposed a change to the Governor's budget that added \$2.9 million for fiscal year 1997/98 for a program addressing the needs of homeless and unstably housed TB patients in California. The funds were also to be used to detain persistently nonadherent patients. TBCB allocated housing funds to local health jurisdictions (LHJs) by a formula based on the number of homeless patients they had reported.

Soon after the inception of the program, it became clear that providing housing alone was not the solution. In addition to housing, patients needed food, transportation, and other services. Some homeless patients who did not want housing could be kept on treatment by being provided with other incentives and enablers. Finally, it was determined that other solutions were needed to prevent patients from becoming homeless in the first place, and the problems that lead to homelessness should be addressed. Providing additional funding for other compliance-enhancing measures and for less restrictive alternatives to detention might reduce the need for detention and improve completion of treatment (COT).

Therefore, about 6 months into the program, TBCB broadened the scope of services provided to include compliance-enhancing measures and less restrictive alternatives to detention. The branch also extended the target population served by this program to include persons at risk of becoming homeless as a result of their TB diagnosis. TBCB increased services to homeless patients who refused housing in an attempt to stabilize their lives enough to improve compliance with DOT.

Broadening the scope of services provided, however, created a need for additional personnel at the local level to provide these services. Not only were homeless patients provided with shelter and food; they now received increased DOT, case management, and social services. Since FY 1999, approximately 47% of the total

housing budget allocated to the LHJs is currently spent for personnel who provide direct services to clients. It supports 22.7 positions statewide (13.1 outreach, 0.9 field investigation, 6.0 case management, 2.5 social work, and 0.2 miscellaneous; numbers rounded to one decimal). The remaining 53% of the housing budget is spent on food and shelter.

Methods

TBCB collected data over the 2-year period of January 1, 1998, through December 31, 1999, using a data collection instrument called the Report of Homeless Tuberculosis Patient or Suspect (RHTP). Local health departments were asked to complete an RHTP on each patient with known or suspected TB who was homeless within the 12 months prior to diagnosis, at the time of diagnosis, or at any time prior to the final disposition of treatment, whether or not housing was provided. The purpose was to ascertain the outcome of housing and treatment for every homeless TB patient or suspect identified in the state during that period. The RHTP collected information on whether or not the patient had been offered and accepted housing, how long the patient was actually housed, the type and duration of housing provided, and the reasons for which the patient left housing. By linking the RHTP to the RVCT for the same patient, the demographic characteristics and the outcome of therapy could be correlated to the housing provided. Additionally, the RHTP was linked to the system by which LHJs invoice the State to determine the cost per day and per patient for providing the housing.

Results

TBCB received 620 RHTPs of suspects and cases over this 2-year period for both homeless cases and suspects. Of the 620 patients, 327 (52.7%) were offered housing. However, when the analysis excludes one jurisdiction in which only 24.2% (70/289)

were offered housing, the percentage for the remainder of the State jumps to 73.1%.

The branch examined RHTPs to determine the reasons for which the remaining 293 patients were not offered housing; we were able to determine the reason for 228 of these. Of the 228, 144 (63.1%) actually had some form of shelter, although technically homeless because they had no official address. TB was ruled out in another 35 (15.4%) patients. An additional 38 either moved, died, or were lost to follow-up, leaving only 11 (4.8%) patients who were not offered housing for undetermined reasons.

Of those offered housing, 92.3% were actually housed. In fiscal year 1998/99, the only year for which we had complete fiscal data, 263 patients were housed for 19,078 days at a cost to CDHS of \$586,538, an average of \$2,230 (73 days) per patient and \$30.74 per day of housing. We were unable to determine the amount of local funding spent on housing or the number or additional patients that may have been housed using local funds.

The majority (73.8%) were housed in single room occupancy (SRO) hotels. An additional 21.4% stayed in "other" facilities. The category "other" includes apartments, homes, and some inpatient facilities. Only a very few patients were housed in YMCAs (<1.0%), rehabilitation centers (<1.0%), or board and care facilities (4.1%).

Thirty-nine patients were offered housing, but were not actually housed using CDHS funds. Of these, 7.7% refused housing, 46.2% were actually housed by another program, and 18% were detained, incarcerated, or hospitalized. Treatment was terminated for one patient, leaving 10 (25.6%) patients who were not housed for various other or unspecified reasons.

We received follow-up RHTPs on 243

(84.3%) of the 288 patients housed by the program. Of these, 87 (35.8%) patients left housing because their treatment was terminated. Another 93 (38.2%) either moved to or were detained in other facilities. They therefore remained housed for the continuation of their treatment.

We attempted to determine the treatment status of each patient at the time housing was terminated. As mentioned above, over 35% left housing because treatment was terminated. Another 22.2% left housing but continued treatment in the community and 22.6% left because TB was ruled out as a diagnosis. Only 19.3% left because they moved out of the area or died, or for unknown reasons. It is important to remember that these figures do not necessarily reflect the final outcomes of these cases.

How well does the RVCT capture the extent of homelessness among TB cases?

To better understand the magnitude of the problem, we compared RHTP and RVCT data for 1998, the year for which RHTP data were most complete. Together, these two data sources identified 287 homeless TB patients, 45 (16%) of whom were not identified as homeless on their RVCTs. This suggests that the RVCT may underestimate the number of homeless persons with TB by 16%. A possible reason is that incarcerated patients are not usually reported as homeless, but may actually be homeless when released from jail. Nor does the RVCT system capture the number of patients who become homeless subsequent to diagnosis.

We determined patient characteristics of 585 persons with TB reported as homeless on either the RHTP or RVCT in 1998/99. Eighty-two percent of homeless persons were men, and 38% were foreign-born persons. Fifty-eight percent were non-Hispanic white persons, 29% were black persons, 8% were American Indians, 2%

were Asian/Pacific Islanders, and 2% were unknown. In terms of substance abuse, 15% of homeless patients reported injecting drug use, 30% noninjecting drug use, and 49% excess alcohol use in the past year. The RHTP captured homeless patient demographics that were significantly different from those captured on the RVCT. This comparison suggested that more American Indian, Hispanic, and foreign-born persons may be homeless prior to or at the time of diagnosis than was previously thought.

Trends in treatment outcomes for homeless persons with TB identified on RVCT.

We also looked at treatment outcomes for homeless patients (as identified on the RVCT) before and after the implementation of this program. The analysis is based on the most recent follow-up RVCT available, and is restricted to patients who began treatment and had no resistance to rifampin. The rate of completion in less than 12 months had already risen from 57.4% in 1995 to 66.3% in 1996 and then to 69.2% in 1997. In 1998, the first year of the program, the rate of completion in less than 12 months fell to 66.0%, but rose again to 69.3% in 1999. The rate of completion in over 12 months fell from 13.8% in 1995 to 8.9% in 1996 and 8.4% in 1997, rose to 12.9% in 1998 and then finally fell to 7.5% in 1999. Similarly, the rate for the category of "died" fluctuated between 6.3% and 10% in these years.

Categories for outcomes that may have been influenced by the housing program are "lost" and "moved." The proportion of homeless patients listed on the most recent Case Completion Report as "lost" has decreased steadily from 7.8% in 1996 to 3.3% in 1999. The proportion listed on the most recent Case Completion Report as "moved" dropped from 8.9% among the homeless in 1996 to 4.2% in 1999.

We also analyzed the Case Completion Report (RVCT Follow-up 2) submitted by the jurisdiction that originally reported the case, disregarding subsequent Case Completion Reports submitted by other jurisdictions into which the patient moved. This allows us to determine the outcomes of case management in the jurisdiction that originally reported the case. We were interested in determining if the provision of housing services stabilized patients' living conditions so they would not need to move. This analysis showed that the proportion of homeless patients classified as "moved" decreased from 14.8% in 1996 to 10% in 1998 and to 7% in 1999.

Conclusions

There is evidence to suggest that housing patients had a positive effect on the outcome of therapy. The implementation of this program corresponded with a decreasing proportion of homeless patients whose most recent RVCT 2 indicated that their status was "lost" or "moved." However, since the implementation of the housing program coincided with the implementation of other interventions (e.g., food, increased incentives, enablers, social services, and DOT), it is difficult to precisely determine the effect of the housing program in California. The housing program also coincided with intensified efforts by the CDHS TB Registry to follow up with local health departments to ensure that "moved" was not a final disposition. The latter intervention would not have impacted the proportion of homeless TB patients who move out of the jurisdiction that originally reported them. The trend toward decreasing movement out of the original reporting jurisdiction suggests more successful case management in the original jurisdiction, which may have been aided by the provision of housing.

Housing can be one way to improve TB control while improving patients' lives for at least a short period of time. In addition, while patients are housed, the job of providing

DOT and support services is made easier and more cost effective by reducing the time health workers spend searching for patients. However, completion of therapy rates among the homeless remain unacceptably low. The persistent application of many interventions tailored to the individual needs of homeless patients is needed to further improve treatment outcomes.

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Application of Aggregate Reports to Program Management in Florida

The Aggregate Reports for TB program Evaluation marked a dramatic shift towards improved TB program management and accountability when they were introduced in 1999. Only after completing two cycles of the Contacts Report and one cycle of Targeted Testing did we begin to realize the full potential of these reports.

The reactions of the Florida Department of Health (DOH) TB program field staff were probably much the same as those of staff in other states when the seemingly complicated report formats and new definitions first appeared. They had to learn not just a new vocabulary and new definitions but, in some ways, a completely different way of looking at TB control. This new view of affairs meant that more is not necessarily better; that priorities must be set and results measured. The focus is not on numbers, but on outcomes.

Florida already had in place the nucleus of a TB case management information system before TIMS came along with its case management capabilities. The Florida system, the Health Clinic Management System, or HCMS, contained a registration module, a TB case management and RVCT module, a laboratory module, and limited *ad*

hoc report generation capability. It was logical, if not simple, to base a management reports module for the Aggregate Reports on this platform.

We reached the decision to automate the Aggregate Reports after completing the preliminary contact reports for 1999. With the realization that Florida's 67 county health departments (CHDs) were required to consult treatment records and manual statistical tabulations on approximately 9500 contacts for nearly 1200 cases just for one report, we had to rethink our approach to the preparation of these reports. Through the statewide Quality Improvement process, we also discovered that the old CDC Program Management Reports were being completed and interpreted differently among CHDs. The inescapable conclusion we reached was the necessity of designing a system to standardize and automate the reports.

There is no way to express in simple terms the programming requirements for automating these reports. It is not simply a matter of designing a set of screens that can be used to load the HCMS database to produce the reports for a given cohort year. The committee of users we convened to assist in developing the specifications was forced to develop decision rules applicable to a variety of situations. For example, what cutoffs should be used to count the contacts to cases reported late in the cohort year whose evaluation and treatment took place in the next year?

The initial reports had to be tested, compared to audit reports, and completely validated or returned to the programmer for correction over a period of months, in the course of which the program identified some stellar analytic thinkers. The Contacts Report was completed first, followed in late August 2001 by the Targeted Testing Report. The system was then used to produce the final Contacts Report for 1999, the Preliminary Contacts Report for 2000,

and the preliminary Targeted Testing Report for 2000.

If this article were only about the automation of the Aggregate Reports, it could stop here with grateful congratulations to the project managers and programmers who designed the system. But happily the story doesn't stop here.

It is a truism more often expressed than acted upon that data are not collected for their own sake but to serve a purpose. The Aggregate Reports were designed for TB program evaluation as their title indicates, not simply at the national or even the state level but locally as well. Florida has discovered that the aggregate reports can help the CHD TB programs obtain a snapshot of their operating efficiency.

To serve this purpose, we have developed a summary report that compares operating results at the local level to state averages and state goals. This enables each health department TB program to see how it compares to other health departments, whether it is using its resources in the most efficient way, and whether its program is effective in meeting the highest priority needs.

The measures used in the Contacts Report include the following:

- Other contacts as a percentage of total contacts
- No contacts rate for smear-positive cases
- No contacts rate for smear-negative cases
- Contacts per smear-positive case
- Contacts per smear-negative case
- Evaluation rate for contacts to smear-positive cases
- Evaluation rate for contacts to smear-negative cases
- Evaluation rate for contacts to "other" cases
- Disease rates for smear-positive,

- smear-negative, and “other” contacts (individually)
- LTBI rates for smear-positive, smear-negative, and “other” contacts (individually)
- Treatment rates for contacts with LTBI
- Contacts chose to stop plus contacts lost to follow-up, as a percentage of total contacts who began treatment
- Completion rates for contacts with LTBI

Certain assumptions underlie these measures. First, a decision to test is a decision to treat. And second, a decision to treat is a decision to complete. Thus, the program should allocate resources to ensure completion of therapy for contacts found to have LTBI.

Line 1, “other” contacts as a percentage of total contacts, is measured to show the percentage of effort given to lower-priority contacts. The amount is not an issue as long as the local TB program has the resources to serve these clients, **and** its evaluation, treatment, and completion rates for higher-priority contacts meet state standards.

In Lines 2 and 3, the goal for “no contacts” is zero. The state program assumes that every TB case has contacts; and the objective of a contact investigation is to find and evaluate those contacts. There is no goal for number of contacts to “other” cases that presumably have a lower priority.

The goal for lines 4 and 5 is 10 contacts per smear-positive and smear-negative case.

For lines 6-8, Evaluation, the goal is 90%. The whole idea of a contact investigation is to identify and evaluate contacts for possible disease or infection resulting from their exposure to the index case. If the contacts aren't evaluated, the contact investigation is just wasted effort.

There is no goal for lines 9 and 10, TB

disease or LTBI, but these measures do serve a beneficial purpose. They show that the contact investigations are achieving tangible results. Also, the LTBI rate may reflect the LTBI background rate in certain population groups. Certainly if the LTBI rate is higher than expected for that community or population group, this may be an indication that the contact investigation net was not spread widely enough, particularly when combined with a low ratio of contacts per case or a high no-contacts rate (or both).

Finally, the goal for lines 11 and 12, Treatment and Completion rates, is 90% for each category. This is the bottom line, both figuratively and literally.

But if line 12 fails to meet expectations, the reason might be found in Line 13, “Contacts who choose to stop or who are lost to follow-up.” This rate is compared to a standard of <10%. The rationale underlying this measure is that all contacts receiving treatment for LTBI should be case-managed, and case management should concentrate on persons who show signs that they may not complete treatment. If more than 10% of those who begin treatment fail to complete it, the local program cannot possibly meet the State's 90% completion goal.

While the preceding analysis has focused on identifying weaknesses in the CHD's contact investigation program, the reverse also applies. Strong points are highlighted and documented so that we also know whom to praise for good work as well.

Clearly, it is not sufficient to simply compare health department TB programs one to another or to the state goals. For this process to be useful, it should lend itself to program analysis and management purposes. Also, it should be reproducible at the local level so managers can see how they are progressing periodically. To

achieve the second purpose, the program proposes to develop a special HCMS screen that can be accessed locally to display the summary report at any given time for any given time period.

The first priority, program analysis and management, is achieved by understanding what the report shows, and the process to that end seems self-evident. Low contacts per case or high “no-contacts” ratios suggest problems with the contact identification process. This is a critical deficiency, because persons who are not identified cannot be evaluated.

If the evaluation rate is low, it is equally obvious that the deficiency is critical, because persons who are not evaluated cannot be treated. This deficiency may indicate problems in an aspect of the program other than the contact identification process. If this is the problem, the corrective action will differ from that required if the contacts are not being identified. One may be an interviewing deficiency, the other a deficiency in the follow-up procedure to locate and test the contact.

There are also different interpretations that can be given a finding that LTBI rates are too low or too high. The program manager must give some thought to the findings to determine what, if anything, is the significance of the variance from the expected rates.

Persons who have LTBI associated with an infectious TB patient with whom they have contact should be treated. This is the only way to interrupt the transmission of TB. If the treatment rate is low, why is this so and what measures are needed to improve program performance? The same is true for treatment completion. If a person starts treatment, he or she should finish unless there are clinical reasons why completion is not possible. The percentages shown for “contact lost to follow-up” or “contact chose

to stop” may provide an explanation as to why treatment completion is low.

It should be evident by now that many of the same measures can be applied to the targeted testing report. Certainly the same principles apply. It should be noted that the Florida DOH chose to implement the targeted testing report beginning with cohort year 2000 for **all clients** tested or “screened” for LTBI by the county health departments. By doing this, we get summary data of all TB “screening” being done by CHDs across the state and an indication of the degree to which targeted testing guidelines have been implemented throughout Florida. It seems clear that these reports give management a powerful tool with which to analyze their programs’ effectiveness. In a time of diminishing resources, programs need every tool possible to deliver measurable results.

—Reported by John T. Miller, Bureau of TB
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Florida Dept of Health

DTBE Staff Called to Respond to the Terrorist Attacks and Bioterrorism Threats

The September 11 attacks to the World Trade Center and Pentagon and later bioterrorism attacks required a prompt, extensive response from all public health officials. The response from CDC was massive, and persons from all over the agency were deployed to assist in public health efforts relating to these events.

After the September 11 attacks, all four of the division Epidemic Intelligence Service (EIS) Officers were in the first wave of CDC responders. McKenzie Andre, MD, Puneet Dewan, MD, Lisa Nelson, MD, and Lorna Thorpe, PhD, traveled to New York City to assist. During this deployment, the officers worked 12-hour shifts in selected hospitals

conducting surveillance for disaster-related injuries. With the long shifts at the hospital and sometimes commutes of up to 3 hours, the officers had time for little else besides their work.

Shortly thereafter, with the anthrax attacks, additional DTBE personnel were enlisted to assist with public health efforts. Some personnel were assigned to work in the Emergency Operations Center at CDC in Atlanta, while others were deployed for field work in Connecticut, the New York City area, or Washington, DC. DTBE personnel who were involved in emergency assignments either in Atlanta or the field include the following:

- Communications and Education Branch: Gaby Benenson, MPH, Regina Bess, Nick DeLuca, MA, Ann Lanner, Wanda Walton, MEd
- Surveillance and Epidemiology Branch: McKenzie Andre, MD, Lauren Lambert, Scott McCombs, MPH, Peter McElroy, PhD, Renee Ridzon, MD, Philip Spradling, MD
- International Activities office: Tracy Agerton, MPH, Paul Arguin, MD, Alicia Fry, MD, Kayla Laserson, ScD, Elizabeth Talbot, MD
- Field Services Branch: Phillip Finley, Judy Gibson, MSN, RN, Darryl Hardge, Michele Thomas, Peg Tipple, MD
- Office of the Director: Joe Posid
- Research and Evaluation Branch: Lorna Bozeman

Work in Atlanta consisted mostly of answering the many public inquiries and other assignments in the CDC Emergency Operations Center. Even in-house, DTBE staff contributed to bioterrorism-related efforts. Under a very tight time schedule, several staff members of the Communications and Education Branch prepared educational materials for persons exposed to anthrax and taking a 60-day course of antibiotics: "What You Need to Know About Anthrax," and "Questions and

Answers for People Who Are Taking 60 Days of Antibiotics to Prevent Inhalational (Lung) Anthrax," and fact sheets on doxycycline and ciprofloxacin.

In the field, division staff assisted with environmental sampling and epidemiologic studies. DTBE's staff expertise in aerosol transmission of infectious agents, respiratory protection and engineering controls, and adherence with long-term antimicrobial medications proved useful in assistance with the CDC response.

All DTBE staff were affected by these events, even those who were not deployed. Staff members who were not assigned emergency duties worked long hours to cover work duties for colleagues who were deployed. Although work on these events has been completed, DTBE staff remain willing to assist with further emergency public health efforts, as needed.

*—Reported by Renee Ridzon, MD
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UPDATES FROM THE COMMUNICATIONS AND EDUCATION BRANCH

TB Education and Training Network: "Bringing Together TB Education and Training Professionals"

The TB Education and Training Network (TB ETN) is actively seeking new members. The goals of the Network are to further TB education and training by

- Building, strengthening, and maintaining collaboration,
- Providing a mechanism for sharing resources to avoid duplication,
- Developing, improving, and maintaining access to resources,
- Providing updated information about TB

- courses and training initiatives, and
- Assisting members in skill building.

Benefits of TB ETN Membership include the opportunity to

- Network and collaborate with other TB professionals,
- Exchange ideas, information, and experiences,
- Access and share resources,
- Collaborate on training and education research,
- Receive updated information about TB courses and training initiatives,
- Build TB education and training related skills, and
- Pilot-test and preview *new* communication and education materials.

Membership is open to all persons who have an interest in TB education and training issues. There are two types of membership status:

Active member. These are individuals who have the lead role for TB education and training in their agencies. Active members have the opportunity to participate in all TB ETN activities, receive priority registration for all TB ETN meetings and activities, vote on TB ETN business-related issues, and serve on subcommittees.

Information-only member. These are individuals who do not have a lead role in TB education and training in their agencies or do not wish to actively participate in TB ETN activities. Information-only members receive information about TB ETN meetings, activities, and other pertinent news via e-mail postings to the membership. Information-only members are not eligible to vote on TB ETN business-related issues or serve on subcommittees.

New members may join the TB ETN at any time during the year. There are no membership fees. In order to keep the membership list current, the steering

committee may, on an as-needed basis, request members to re-register. If you are interested in joining TB ETN, please complete the registration form at the back of this issue and submit it to Vivian Siler by fax at (404) 639-8960. If you have any questions about TB ETN, please feel free to contact Maria Fraire at (404) 639-5317 or by e-mail at mff8@cdc.gov, or Gabrielle Benenson at (404) 639-5320 or by e-mail at gkb6@cdc.gov.

—Reported by Maria Fraire, MPH, CHES
Division of TB Elimination

TB Information Guide CD-ROM, Version 2.0

Due to the popularity of the CD-ROM entitled *TB Information Guide*, the Communications and Education Branch has released Version 2.0 with updated contents and improved usability. The *TB Information Guide* CD-ROM includes many of the materials found on the Division of TB Elimination (DTBE) Web site. The CD-ROM was designed as a quick resource for those who do not have time to connect to the Internet or for those who have intermittent access to the Internet. The six sections of the CD-ROM are as follows:

Educational Materials: Health care provider and patient education and training materials.

Major TB Guidelines: Guidelines from CDC's *Morbidity and Mortality Weekly Reports* and joint statements from CDC and the American Thoracic Society (ATS).

Morbidity & Mortality Weekly Reports: TB-related articles from CDC's *Morbidity and Mortality Weekly Report (MMWR)*. *MMWRs* are sorted by subject and by publication year.

Surveillance Reports: Tabular and graphic

information about reported TB cases from 59 reporting areas.

Slide Sets: Various slide sets developed as accompaniments to select publications.

Ordering Information: Information on how to order free materials from DTBE.

For quick and easy use, the CD-ROM runs automatically when inserted into the computer and utilizes an Internet browser (you do not need Internet access). Version 2 provides materials in both HTML and PDF format. The HTML format was added to comply with Section 508 of the Rehabilitation Act of 1973, as amended, a law that ensures individuals with disabilities increased access to electronic and information technology provided by the federal government. Please note that this CD-ROM does not operate on Macintosh computers.

The *CDC TB Information Guide* CD-ROM can be requested in the following ways:

- Through the DTBE's on-line ordering system: www.cdc.gov/nchstp/tb
- By mailing or faxing a DTBE Educational and Training Materials Order Form
- Through the CDC Voice and Fax Information System by calling, toll-free, 1-888-232-3228 and requesting the *TB Information Guide*, order #99-6879.

*—Reported by Betsy Carter, MPH, CHES
Division of TB Elimination*

Updates on the Program Managers Course

Overview of the TB Program Managers Course

The overall purpose of the TB Program Managers Course is to improve the planning and managerial capabilities of new TB program managers throughout the country.

The course is designed for TB controllers, program managers, public health advisors, and nurse consultants with programmatic responsibilities at the state, city, and regional (within a state) levels. Optimally, a course participant should have occupied a TB program management position for at least 6 months but no more than 3 years.

2001 TB Program Managers Course

The Communications and Education Branch (CEB) would like to thank the faculty and participants of the October 2001 *TB Program Managers Course* for making the course such a success. CEB appreciates the faculty's hard work in preparing the materials for their sessions and the participants' hard work during the course. Overall evaluation results indicate the following:

- 94% of the participants improved their knowledge scores from precourse test to postcourse test;
- 97% of participants rated the overall quality of the course as excellent or good; and
- 76% of the participants indicated that at least 8 of the 12 knowledge, skill, and ability (KSA) areas were adequately covered (46% indicated that all 12 KSA areas were adequately covered).

This year's 5-day training was divided into 16 sessions. Each session stood alone as a block of instruction, but was sequenced to build logically on the sessions preceding it. The course sessions included TB Prevention and Control Programs in the United States, Active Case Surveillance, Using Epidemiology to Identify High-Risk Groups, Effective Treatment Completion Strategies, Appropriate Regimens and Case Management, Infection Control and Health Department TB Clinics, Contact Investigations, Outbreak Investigations, Targeted Testing and Treatment of Latent TB Infection, Reaching High-Risk Populations, Using Data for Program

Planning and Evaluation, Quality Assurance and Monitoring Cases, Media Relations, Coordinating Efforts through Training and Education, Forging Partnerships, and a Charge to Participants.

The course stressed practical application of planning, management, and evaluation concepts to the specific issues and concerns of TB programs. Skills essential to TB program management were presented, followed by exercises that encouraged participants to practice using the skills in the classroom setting. At the end of each session, participants were asked to address specific questions in a *Planning Guide*, which required them to synthesize concepts presented in the session and apply them to their own programs. The *Planning Guide* was a tangible product that participants took home from the course, to serve as a record of personal course discoveries and, more importantly, as a road map for improving the effectiveness of their TB prevention and control efforts.

The 2002 TB Program Managers Course Plans are now underway for the 2002 *TB Program Managers Course* to be held October 21-25 in Atlanta. As you read above, the *TB Program Managers Course* is a multisession program (17 sessions are planned for 2002) designed for TB Program Managers, Nurse Consultants, Public Health Advisors, and TB Controllers who have programmatic responsibilities at the State, city, or regional level. There are no registration fees for attending the course, but attendees (or their programs) are responsible for their own travel, hotel, and per diem expenses. The course will be held in Atlanta at the Sheraton Colony Square Hotel (at 14th Street and Peachtree).

As in the past, the 2002 *TB Program Managers Course* will be limited to 30 participants who have been nominated by a DTBE program consultant.

The criteria for course participants are as follows:

- Employment as a TB Controller, TB Program Manager, Nurse Consultant, or Public Health Advisor,
- Programmatic responsibilities at the state, city, or regional level,
- Six months to 3 years of experience in a TB program management position,
- A score of 90% or greater on the prerequisite pretest (basic TB knowledge),
- Consultant recommendation.

—Reported by Scott McCoy, MEd, EdS
Division of TB Elimination

REPORT FROM THE COMPUTER AND STATISTICS BRANCH

Summary of the NTCA and CDC TIMS Summit

The following is a summary of the Tuberculosis Information Management System (TIMS) summit convened and attended by members of the National TB Controllers Association (NTCA) and CDC/DTBE staff on November 6 and 7, 2001, in Atlanta, Georgia. Jose Becerra, MD, MPH, of CDC and Randall Reves, MD, of the NTCA served as co-moderators of the summit.

Background: To design and develop the TIMS patient management module, CDC conducted a thorough joint application development process in 1993/94 that included input from TB controllers. Throughout the development of TIMS, TB controllers have been concerned about the ability of the TIMS patient management module to fill the needs of TB control programs. The mismatch between this expectation and the actual product has been

a cause of great concern among TB controllers, complicated by staff turnover (both at headquarters and in the field), and by the serious defects that plagued the first versions of TIMS. An Information Technology Working Group of the NTCA was formed to work with DTBE on addressing the need for patient management systems that could enhance TB control as well as addressing public health reporting requirements. As a result of fruitful discussions generated at a session organized by the Information Technology Working Group at the June NTCA meeting, a subsequent meeting was sponsored by CDC/DTBE in Atlanta in November. The TB control professionals of the NTCA and CDC who attended the TIMS summit meeting did so for several reasons: to review the modules that have been developed by various local programs; to determine which modules, or components of modules, are the most successful and adaptable to other programs; to prepare for the technology of the future via discussions about the National Electronic Disease Surveillance System (NEDSS); and to eventually present jointly with CDC a robust and usable product.

Meeting summary: Jose Becerra, MD, MPH, chief of the Computer and Statistics Branch of DTBE, presented a review of CDC's current activities regarding TIMS. He indicated that representatives of the NTCA and of CDC are exploring short-term options to make TIMS, as is, more useful to those low-incidence areas that may need it (e.g., exporting data into MS Access for reports customization and linkages with other databases).

Dr. Becerra then described CDC's priorities for future activities: "For those areas with their own systems, we want, first, to make sure that our TIMS import utility is more widely tested before we put it in full production mode; and second, to start to work on defining a common business process model and a core data dictionary

for TB case management." He pointed out that California has produced useful documentation, including a first attempt to correspond to the NEDSS conceptual data model, and that Alabama is already very close (90%) to completing a Web-enabled system that includes HIV/AIDS, STD, and TB data elements and seems to comply with current NEDSS standards. He introduced Carol Berglund as the CDC point of contact and, in collaboration with NTCA, a facilitator for this case management task. He stated that a subject-matter expert on TB case management will be provided by NTCA and the Field Services Branch of DTBE (editor's note/update: Stuart McMullen has agreed to serve in this capacity). He also introduced Dave Elmore as DTBE's technical lead for the transition from TIMS to the NEDSS-TB program area module (PAM). According to Dr. Becerra, the TIMS surveillance module will be the first module worked on in NEDSS; the development of a case management module will be considered later. DTBE staff will meet with NEDSS project staff for a joint application development (JAD) session at an undetermined date.

Randall Reves, MD, of the Denver Public Health Department, presented the NTCA's perspective regarding TIMS. He began by stating that there is a long-overdue need for a TB patient management system for many programs and that far too many programs have been attempting the task on their own, patching together many different and often duplicative "quick fixes" in order to better and more efficiently accomplish the job of patient care and TB control.

He went on to state that it had been unrealistic to expect TIMS to be able to adequately address all patient care and TB control issues for every program, and that a NEDSS version developed in Atlanta might be inadequate as well. He pointed out that the presentations by the summit participants from Alabama, Wisconsin, Florida,

Oklahoma, New Mexico, and California had provided excellent demonstrations of how TB controllers should have been working toward their objectives all along: starting at the very basic level — what TB controllers must do to get their jobs done — and making that set of requirements drive the information system. He cited as a good example the way in which the contact investigation data management system had been developed in Alabama, integrating those complex data into the overall TB and public health data management system in the state (including such documentation as DNA fingerprints).

Dr. Reves continued by saying that there are many common elements in what TB controllers do, and that there is a willingness and need to work together to improve TB control data management systems for those who are not as far along in the process. One group of persons at the meeting worked on a comparison of the data dictionaries that are being developed by a number of TB control programs as a first step toward defining those elements common to all programs. He stated, "We are working toward providing TB programs with a menu of systems that have already been developed, with the pros and cons of each, so that programs will not have to 'reinvent' what other programs have already developed for patient and program management - whether they involve the use of TIMS in more efficient ways, or other systems that will provide the data on reporting but not by direct TIMS entry (once the import function is working). These activities need to be fostered." He went on to state that some of these common elements being developed will be of local or state concern, but others will no doubt become part of the NEDSS system, which will eliminate some of the need for dual data entry. Another group of TB controllers attending the meeting spent some time working with CDC staff on this issue.

For further information on the TIMS summit, please contact Dr. Jose Becerra at (404) 639-8122, Dr. Randall Reves at (303) 436-7297, or Dennis Minnice at (312) 746-5987.

*—Reported by Jose Becerra, MD, MPH
Division of TB Elimination
Randall Reves, MD
Denver Public Health Department
and Dennis Minnice, MPH
Director, TB Program
Chicago Department of Public Health*

INTERNATIONAL NOTES

The Tuberculosis Coalition for Technical Assistance (TBCTA)

The TBCTA: As part of the global effort against TB, six organizations involved in TB control have formed a unique and free-standing partnership, the Tuberculosis Coalition for Technical Assistance (TBCTA). Each of the partner organizations has a TB-specific agenda as well as expertise and experience. Together, the partners of TBCTA form a formidable force that stimulates political commitment in the selected countries, and provides strategic direction and leadership, technical expertise, and related resources to the global effort to reduce the burden of TB. Examples of expertise and activities undertaken by the TBCTA include technical assistance, assessments, assistance with program and project development, training and workshops, supports for intracountry and intercountry meetings, program review missions, and consensus-building meetings.

Purpose: The purpose of the TBCTA is to (1) substantially improve and expand the capacity of the US Agency for International Development (USAID) to respond to the global TB epidemic by providing state-of-the-art, context-appropriate, technically sound and cost-effective consultation and

technical assistance to high-incidence countries and USAID missions; and (2) complement and enlarge upon existing global TB control efforts, such as the Stop TB Initiative, the programs of the World Health Organization, and the activities of the individual TBCTA partners. The ultimate goal is to reduce the global burden of TB and its attendant mortality, thus significantly improving human health, well-being, and development, particularly among the poor.

The Partners: The World Health Organization (WHO), headquartered in Geneva, has a presence in virtually all developing countries as well as having responsibility for defining the international health policy for TB control. It provides technical assistance and advice to countries on policy formulation, project planning and implementation, and monitoring and evaluation of TB control activities. WHO maintains the global surveillance and monitoring of TB incidence, drug resistance, and status of TB control programs.

The International Union Against Tuberculosis and Lung Disease (IUATLD), a nongovernment organization (NGO) headquartered in Paris, is composed of constituent, organizational, and individual members. There are IUATLD regional organizations in North America, Latin America, Africa, Europe, Asia, and the Middle East. The IUATLD disseminates information on TB and lung disease; coordinates and assists the work of its members throughout the world; and maintains close links with WHO, other UN agencies, and government and nongovernment organizations in the health and development sector. The IUATLD's expertise and its activities are focused on the areas of technical assistance, education, and research.

The American Lung Association (ALA), based in New York City, is the oldest voluntary association in the United States,

having been founded in 1904, and has 78 state and local organizations throughout the country. It is the U.S. constituent member to the IUATLD. Its mission is the prevention and control of lung disease and it works primarily through public education, public policy, and advocacy activities. The ALA works internationally solely in the areas of advocacy and in fostering the development of international protocols.

The American Thoracic Society (ATS), also based in New York City, was founded in 1905. It is a 14,000-member educational and scientific society and is the major U.S. medical professional organization with an interest in TB. The ATS has considerable experience in collaborating with the Centers for Disease Control and Prevention (CDC) in developing guidelines for TB prevention and control, which are used both in the United States and in other parts of the world. The ATS publishes a highly respected and widely read scientific journal. In addition, the Society conducts an annual international conference that attracts 15,000-16,000 attendees. The conference is a major forum for the presentation of new information about TB and its control, and provides an arena for TB training and education as well. Broad-range specific technical expertise is represented in the organization.

The Centers for Disease Control and Prevention (CDC), based in Atlanta, is one of the United States' federal public health agencies. It promotes health and quality of life by working to prevent and control disease, injury, and disability. Within CDC, the Division of Tuberculosis Elimination (DTBE) is responsible for domestic and international TB prevention and control activities. These activities are carried out along with other centers in the CDC and in collaboration with state and local health departments, academic and research institutions, and other partners such as ministries of health in foreign countries, and domestic and international NGOs. CDC

provides technical assistance and consultation in a broad range of TB control areas.

The Royal Netherlands Tuberculosis Association (KNCV), based in The Hague, was established in 1903 as a unique public-private partnership. KNCV promotes effective and efficient TB control within national and international contexts and acts as an implementing agency for projects financed by the Dutch government and other Dutch international foundations. Since the 1980s, KNCV has contributed to the development and implementation of effective TB control programs in low-income countries. It also hosts the International Tuberculosis Surveillance Center (ITSC) and the Tuberculosis Surveillance Research Unit (TSRU); contributes to international policy development, especially within its collaboration with WHO and the IUATLD; and collaborates with numerous international organizations. KNCV has highly qualified staff in a wide variety of fields of experience and expertise, many of whom have years of experience working or living in developing countries.

In short, TBCTA is a unique coalition of partners who are collectively and individually well-positioned to mobilize political commitment and human and financial resources from a variety of sources, and to ensure the quality of the TB control efforts.

Expanding the Partnership: The TBCTA aims to contribute to the objective of accelerating directly observed treatment, short-course (DOTS) expansion in line with the Amsterdam Declaration through the current six-member coalition and through an expansion of the partnership, especially in high-burden countries and through their national programs for TB control. The issue of expansion of the partnership is twofold: (1) Each of the current six members of the TBCTA can make arrangements with other partners to implement activities described in

this proposal. In order to keep the management transparent, the TBCTA has decided that the Coalition member is the one responsible to the Coalition for the proper implementation. In all cases, the TBCTA will strive to strengthen and expand in-country organization and human and programmatic capacity in order to achieve sustainable development. (2) Other donors or agencies can apply to the TBCTA to implement activities on their behalf. For example, ACIDI-CIDA (the Canadian International Development Agency) and DFID (the UK's Department for International Development) have already approached the Coalition regarding this possibility. When other donor/agency funding becomes a reality, the Coalition will take every precaution to ensure that the separate management and administration of the different donor resources will be safeguarded. The vast experience of the Coalition members in dealing with various donors in the past guarantees this process.

The TBCTA envisions expanding to other professional societies, public and private organizations, and/or universities. This includes both organizations already involved in TB control at country level and newcomers with the interest and motivation to join the effort. Specifically, this expansion could include organizations involved in advocacy and lobbying. If so, such efforts would complement the USAID resources and build on the experience and system established by the Coalition in contributing to DOTS expansion.

For more information about the TBCTA, readers can contact the following individuals:

Dr. Peter Gondrie, Ms. Elsbeth Gosens, or
Ms. Clara Habraken
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P.O. Box 146
2501 CC The Hague, The Netherlands
Telephone: 31-70-358-7222

FAX: 31-70-358-4004

*—Reported by Charles Wells, MD
Division of TB Elimination*

New U.S. Department of State Forms for Overseas Health Assessment

“Out with the old and in with the new” is a common saying, but it has never been more aptly used than for the overseas health assessment document, Optional Form-157 (OF-157). The U.S. Department of State has been responsible for updating the information on the OF-157 since 1949. The most recent OF-157, last updated in 1986, became outdated in 1990 when the Immigration and Nationality Act (INA) was amended. In collaboration with the Department of State, the Immigration and Naturalization Service, state TB controllers, and overseas U.S. embassy–assigned examining physicians (panel physicians), CDC’s Division of TB Elimination and Division of Global Migration and Quarantine (DQ) developed four new forms. These are the DS-2053 (replacing the OF-157) and three accompanying worksheets (DS-3024, DS-3025, DS-3026). All four will now be used during the overseas migration health assessment.

These four new medical forms will be completed by the panel physicians or the International Organization for Migration physicians for immigrant and refugee applicants, respectively. The DS-2053 is a summary of the three worksheets and contains serologic results. This form has been updated to be in compliance with all the changes in immigration law. It has check boxes for easier recording and collection of data, more space for panel physicians to use to write comments, larger boxes for recording laboratory findings, and a space to show if vaccination entry requirements have been met or waived.

The DS-2053 is designed to be used with the chest x-ray and classification worksheet (DS-3024), vaccination worksheet (DS-3025), and medical history and physical examination worksheet (DS-3026) to provide additional essential health information to the U.S. embassies, the receiving health departments and providers, and DQ.

The rationale behind developing the additional worksheets was twofold:

- The worksheets will provide more detailed and specific information about the results of the overseas health assessment; this is needed by receiving health departments to provide adequate care and follow-up.
- The worksheets can also function as a quality assessment tool through which DQ can monitor compliance of panel physicians with the regulations and Technical Instructions for the overseas examination (developed by DQ).

The new chest x-ray worksheet (DS-3024) is of most interest to the TB control programs. It provides additional information about how the panel physician determined the classification for a TB condition in the immigrant or refugee applicant. It is designed as a self-guided algorithm to help the panel physician determine the following:

- The need for a chest radiograph,
- The classification of findings on the chest radiograph (whether suggestive of active or inactive TB),
- The need for sputum smears (based on chest radiograph findings and clinical signs and symptoms), and
- The final TB classification of the applicant.

The chest x-ray and classification worksheet will therefore provide a method for determining how the physician arrived at the TB classification in order to help DQ identify inadequacies in the classification process.

On March 28, 2001, the Department of State notified the consular officials at U.S. embassies of the new forms. The time frame for implementation has been left to the discretion of the individual U.S. embassies. By late fall of 2001, most countries were using these forms to report the results of overseas health assessments.

The forms are available at the Consular Sections of U.S. embassies. Detailed instructions for their use are available at: <http://www.cdc.gov/ncidod/dq/dsforms/>. The next revision of the forms is anticipated to be in 2004, after further essential input from TB controllers.

—Submitted by Mary Naughton, MD, MPH, TB Medical Officer, and Susan T. Cookson, MD Division of Global Migration and Quarantine

UPDATES FROM THE RESEARCH AND EVALUATION BRANCH

Evaluating Contact Investigation Programs

The contact investigation (CI) is a key strategy in the elimination of TB, and TB programs have established a variety of structures and practices to use in conducting these investigations. Recent studies conducted by DTBE staff and others have shown that TB control programs vary widely in their success in achieving outcomes related to identifying, screening, and appropriately treating contacts. These findings demonstrate the need for some programs to revise their contact investigation procedures. But what changes should be made? What aspects of the CI program work well as is and what areas need enhancement?

To answer these questions, local TB

programs need a way to evaluate their current program processes and practices to appropriately plan and implement improvements and recommendations. CDC has developed a framework for public health program evaluation.¹ This well-researched framework provides an adaptable six-step process for public health programs to use in evaluating their programs and operations. However, for those unfamiliar with evaluation concepts, understanding how to apply the framework and identifying appropriate resources can be difficult and time-consuming.

To help local TB programs build capacity for the evaluation of contact investigation processes, the Prevention Effectiveness Section (PES) of DTBE's Research and Evaluation Branch (REB) initiated a project that involves partnering with two health departments in the use of the CDC evaluation framework and applying the evaluation concepts to their programs. The ultimate goal of the project is to develop a translated version of the framework specific for TB-program managers and staff. Such a translated guide of the evaluation framework will enable even those new to program evaluation to easily identify and apply the six-step process to a self-evaluation of their contact investigation practices.

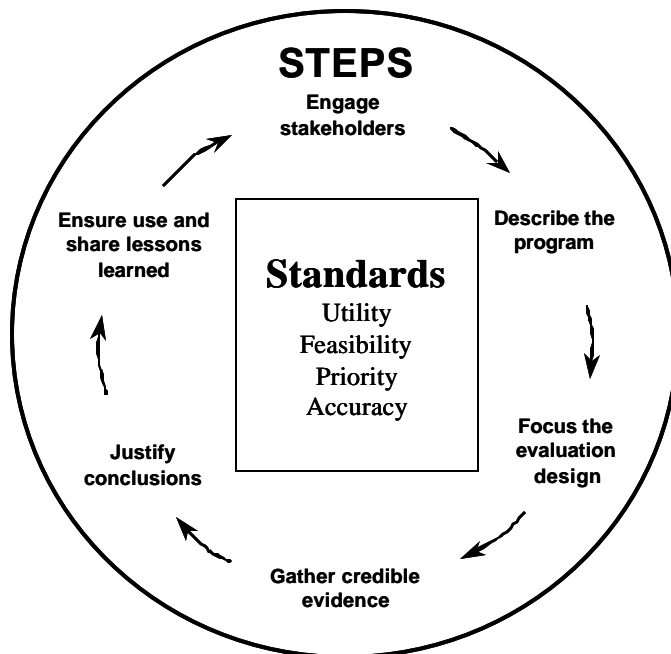
Over the past year, the two grantees, the Massachusetts and New Jersey health departments, have been designing and conducting their evaluations. In Massachusetts, a partnership between state and local TB staff to facilitate CIs has been in place for 5 years. Case managers at local health departments coordinate with state-level case managers to ensure that the CI protocol is implemented. The protocol includes use of the concentric circle approach to identify contacts, time lines for accomplishing tasks, and systems for ensuring proper exchange of information among state, local, and private providers.

The state aggregates and oversees CI data to ensure nothing falls through gaps. State staff led the self-evaluation effort in five local TB programs.

In Newark, the New Jersey health department selected to self-evaluate the implementation and effectiveness of its specially developed protocol for conducting expanded CIs in congregate facilities. The protocol aims to ensure that all potentially exposed persons are included in the investigation, while not depleting resources or unnecessarily testing the unexposed. This protocol involves collaboration between the investigator and supervisor to determine if such a CI is necessary, a systematic environment assessment to determine likelihood of transmission, and a communication / education plan to allay fears and promote effective testing and treatment. The evaluation process will also document details of the protocol to facilitate translation to other programs.

While each program may report findings from their evaluations at a later time, the evaluators learned much about the evaluation process and how it can work for contact investigation program activities. The lessons they have learned may help guide other TB programs in understanding how evaluation can be applied to their contact investigation activities to provide them with useful, practical information for program enhancement. Lessons learned from each of the six steps in the framework are presented below.

Step 1: When using the CDC framework, the first step in the process is to identify “stakeholders.” These are the people who are interested in contact investigations and will ultimately be affected by the evaluation. By identifying the stakeholders, and engaging key stakeholders throughout the process, the evaluators ensure that the evaluation is relevant and provides useful information. There are three main



Recommended framework for program evaluation

categories of stakeholders for contact investigations: 1) the state and local health department staff who conduct contact investigations and their managers and supervisors; 2) the persons receiving services, i.e., TB patients or suspects, contacts of cases, TB care providers and other health service providers, managers or employees at schools, jails, congregate facilities, or private businesses, and the general public; and 3) those who will directly use evaluation findings to enhance the programs and improve services.

Step 2: Once the key players have been identified, the next step in the process is to clearly and thoroughly describe the contact investigation system and its relationship to the general TB control program. This description ensures that all participants share the same understanding about what contact investigations are, how they are conducted, why they are needed, what program resources are used in conducting these investigations, and what effects are anticipated for each activity. One key feature of CDC’s framework is developing a logic model that graphically describes how the

different aspects of contact investigation link together to achieve the expected results. The graphic serves as a communication tool as well as explicitly showing how activities logically result in outcomes.

Step 3: From the description and logic model, the evaluators should then be able to focus evaluation questions and develop their data collection strategies. The evaluation question selected in Massachusetts was, "How well does our new case or suspect assessment tool work in five participating local TB control programs?" The evaluators decided to conduct a process evaluation to assess how well the new tool is being implemented by the five programs and an outcome evaluation comparing patient-level outcomes collected before the new tool was implemented and after its adoption. In New Jersey, the evaluation question was, "How useful and effective is our protocol for expanding contact investigations in congregate settings?" The evaluation methods centered on comparing case studies of investigations in which the protocol was fully implemented with case studies of investigations in which the protocol was not implemented. Outcomes, including those related to resource use, were also compared.

Step 4: Identifying indicators and selecting sources for data should be a simple process, given the work done in the early steps. The evaluators selected similar indicators, including process indicators: program organization and infrastructure, staff training, adherence to protocol steps, use of forms or records, staff perceptions, intensity of resource use, and outcome indicators: number of contacts identified, percentage of contacts fully tested, percentage of contacts testing positive for disease or LTBI, percentage of contacts started on treatment, and percentage of contacts completing treatment. The data sources that were selected matched each indicator, and included policies, practice

instructions, training agendas and records, case files or records of contact investigations, completed forms or other written documentation, interviews with investigators and supervisors, and aggregate reports or forms. All data sources were assessed to ensure that they were reliable and considered valid by the stakeholders before data collection began.

Step 5: Analyzing data and determining findings also flow from the previous steps. Content analysis, domain analysis, and other methods were used to analyze qualitative data and statistical methods were applied to the quantitative data. To ensure that the evaluation findings could be easily understood by all stakeholders, simple data analysis methods were selected. With data in hand, the evaluators once again went back to the logic model to compare the data collected on implementation and results against original intentions and levels of success defined previously. These facts were then discussed and interpreted by the stakeholders to provide meaning and context. Findings were developed that identified what objectives and goals were met or unmet and why.

Step 6: The most important step is an on-going process to ensure that the findings from the evaluation are used. Currently, the findings are being used to

- assess contact investigation process and practice as it is implemented,
- target areas for enhancement or improvement,
- develop standardized tools for data collection during interviews and field visits,
- develop strategies to make necessary changes to operations,
- prioritize program activities and resources,
- identify effective policies, procedures, or practices for replication,
- organize key information for training staff and informing those outside the

program,

- garner political support by demonstrating effectiveness of contact investigations,
- understand the implications of policy and guidelines on the investigation process, and
- identify areas for future research and evaluation.

The last use completes the circular nature of the framework. As information is obtained, more information is needed and more questions emerge. The process is repeated and will become routine for the TB programs. A learning cycle is established as programs strive for continuous quality improvement in their contact investigations and in other aspects of their operations. For more information on the Framework for Program Evaluation in Public Health, please see <http://www.cdc.gov/eval/framework.htm> or contact Maureen Wilce at 404-639-8123.

—Submitted by Maureen Wilce, MS
Division of TB Elimination

Reference

1. CDC. Framework for program evaluation in public health. *MMWR* 1999;48(RR-11).

UPDATES FROM THE SURVEILLANCE AND EPIDEMIOLOGY BRANCH

TB Epidemiologic Studies Consortium

The first meeting of the new TB Epidemiologic Studies consortium (TBESC) was held December 5-7 in Atlanta, Georgia. This meeting was critical for setting the consortium in motion. The primary purpose of the TBESC is to design and carry out epidemiologic, behavioral, economic, laboratory, and operational research to evaluate interventions to prevent TB. The TBESC consists of 22 collaborating sites.

The ability to combine the work of researchers with different areas of expertise and focus on specific problems will give the TBESC a unique ability to have an important impact. With the task of developing a research agenda, the TBESC will not be working in a vacuum. Rather, it has clear guidance from the Institute of Medicine report which provides a framework to use in developing the research agenda. The TBESC is modeled as an investigator-driven collaboration of peer intellectual contribution. The idea is that researchers and TB controllers can do more together than individually. We hope that the partnerships created by TBESC will make for more successful science.

The TBESC consists of a formal partnership between academic centers and TB control programs. This partnership is distinct from other federally funded activities, such as the relationship that NIH has with academic centers or that DTBE has with TB control programs through its cooperative agreements. We hope this mixture will help the TBESC conduct the highest quality research with strong programmatic relevance. DTBE has been working to bring this concept to fruition for over 2 years. The founding principal has been to develop a group of experts who can be involved in all the activities related to advancing TB control:

- debating a research agenda
- designing and conducting research studies
- publishing the scientific findings
- implementing the research results
- measuring the impact

The TBESC was modeled after the TB Trials Consortium (TBTC). However, the scientific focus of the TBTC is on clinical trials, while the TBESC's activities will be more diverse. In addition, the TBTC started from a single study and grew into a smoothly functioning consortium; the TBESC started out as a consortium and is

now developing the ground rules that will be used to guide its activities. The TBESC will be managed through a contractual relationship between CDC and consortium members.

—Reported by Scott J.N. McNabb, PhD, MS
Division of TB Elimination

The Importance of DNA Fingerprinting in TB Control Efforts

The following was adapted from an article presented at the meeting of the National TB Controllers Association in June 2001.

Overview

DNA fingerprinting has been used successfully in conjunction with traditional laboratory and epidemiologic methods to differentiate *M. tuberculosis* strains, to help identify new TB case-patients, and to confirm suspected laboratory contamination events. The restriction fragment length polymorphism (RFLP) technique, which is based on a repeating genetic element called insertion sequence 6110 (IS6110), is detectable only in species of the *M. tuberculosis* complex. This genetic element occurs in varying numbers of copies and in different positions on the chromosome, and thus results in a unique genotype, or fingerprint, that is useful for characterizing the strain of *M. tuberculosis* that has infected a particular individual. Though RFLP has limitations (e.g., high cost, length of time required to culture the organism, and specialized training and laboratory equipment needed), it has been used with success to characterize *M. tuberculosis* strains worldwide and to help in public health follow-up.

Application of Genotyping to TB Control Efforts

Genotyping technology has been used effectively in outbreak investigations and in the identification of TB cases falsely

reported as positive owing to laboratory cross-contamination. Genotyping can be used to augment traditional contact investigations and to further our understanding of risk factors and transmission patterns by identifying new contacts who would not be detected by routine contact investigations alone; these data could also be used to identify TB disease attributable to relapse (versus recent infection). In addition, DNA fingerprinting can be used as a surveillance tool to assess the effectiveness of TB control programs by examining strain variation throughout a geographic area over time. For example, if TB control efforts were effective, one would predict that the strains of *M. tuberculosis* in circulation in the area would not be genetically similar. This will be particularly useful in areas with current low incidences as we come closer to eliminating TB in the United States.

Incorporating Genotyping into TB Control Efforts in the US

The incorporation of genotyping methodology into routine TB control efforts represents a challenge. Although these techniques may continue to evolve, those currently in use have shown their utility as effective tools for both epidemiologic and program management purposes. An educational campaign should be initiated to disseminate information regarding current genotyping methodology to TB controllers and public health workers, so that they may better interpret and use these data in routine TB control efforts. To this end, CDC is now providing technical assistance in the development of a hands-on manual for TB controllers.

Genotyping Network Update

The National Tuberculosis Genotyping and Surveillance Network (NTGSN) was established in 1996 as a 5-year project involving seven regional genotyping laboratories and sentinel surveillance sites in the United States. *M. tuberculosis*

isolates from the TB patients at each sentinel site were genotyped using one or more molecular technologies. Routine surveillance data were collected for each culture-positive case-patient. In addition, follow-up interviews were conducted for case-patients that had *M. tuberculosis* isolates that were genetically identical to isolates of other patients in the surveillance area. The project period is now at an end, and findings from the project will be presented later this year in a special issue of the CDC journal *Emerging Infectious Diseases*.

—Reported by Scott McNabb, PhD, MS
Division of TB Elimination

NEWS BRIEFS

The interferon gamma assay, a whole-blood test for latent TB infection, was recently approved by the Food and Drug Administration. This test is an in vitro assay for cell-mediated immune reactivity to *M. tuberculosis*. Unlike the tuberculin skin test (TST), this assay requires a single patient visit, assesses response to both *M. tuberculosis* and nontuberculous mycobacteria simultaneously, and does not boost anamnestic immune responses. It appears that interpretation of the whole-blood interferon gamma assay is less subjective than is the TST, and the test may be affected less by prior BCG vaccination and reactivity to nontuberculous mycobacteria than the TST. The utility of this test in clinical practice remains to be evaluated. (Mazurek, GH, LoBue PA, Daley CL, Bernardo J, Lardizabal AA, Bishai WR, Iademarco MF, Rothel JS. Comparison of a whole-blood interferon gamma assay with tuberculin skin testing for detecting latent *Mycobacterium tuberculosis* infection. *JAMA* 2001;286:1740-7).

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The Global Alliance for TB Drug Development has recently purchased rights

from Chiron Corporation to a promising new compound, PA-824, which may eventually lead to a more effective, shorter course treatment for TB, especially in developing countries. The drug still needs to undergo rigorous clinical trials and FDA approval.

TRAINING AND EDUCATIONAL MATERIALS

New Training and Education Materials from Canada: "TB and Me"

A new patient education package for TB is available, entitled "TB and Me." The package consists of the following items:

- A 15-minute upbeat video, in English, aimed at patients or clients with active or latent TB. The video emphasizes adherence to treatment and explains such basic questions as "How did I get TB?", "Will I infect others with TB?", "How do I get rid of TB?", "What are these pills all about?", and "What are the side effects of the TB pills?". The approach is a very positive one with emphasis on self-efficacy, taking responsibility for one's treatment, and positive outcomes. The video is appropriate for individual or group viewing and discussion.
- Patient instructional booklets (25 included with each video order) that reinforce the information presented in the video. The booklets also have a patient medication diary.
- A CD-ROM, in English, that guides patients easily through its structured content on a computer. This easy-to-use CD-ROM addresses basic patient concerns about active and latent TB and treatment. Like the video, the CD "TB and Me" emphasizes adherence to

treatment, lists possible adverse effects, and presents a positive message to the patient or client. The CD can be used for individual instruction or for group instruction with a facilitator. A posttest is built into the program to test knowledge. The CD-ROM is PC/Windows and Macintosh compatible.

The "TB and Me" educational materials can be purchased as a complete package (video, booklets, and CD-ROM) or any of the components can be purchased individually.

To obtain an order form, please e-mail Dr. Richard Zoutman directly with your fax number and he will fax the form to you. Please note that there are TWO versions of the order form, one for Canadian orders that takes into account Canadian sales taxes, and one for orders from outside of Canada. Please be sure to request the correct order form. After you have filled out the form, simply fax it back to Dr. Zoutman at the fax number indicated on the form. His address and his telephone and fax numbers are below.

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NEW CDC PUBLICATIONS

Besser RE, Pakiz B, Schulte JM, Alvarado S, Zell ER, Kenyon TA, Onorato IM. Risk factors for positive Mantoux tuberculin skin tests in children in San Diego, California:

evidence for boosting and possible foodborne transmission. *Pediatrics* 2001; 108(2): 305-310.

Bock NN, Sales RM, Rogers T, DeVoe B. A spoonful of sugar... : improving adherence to tuberculosis treatment using financial incentives. *Int J Tuberc Lung Dis* 2001; 5(1): 96-98.

Conover C, Ridzon R, Valway S, et al. Outbreak of multidrug-resistant tuberculosis at a methadone treatment program. *Int J Tuberc Lung Dis* 2001;5(1):59-64.

Dale JW, Brittain D, Cataldi AA, Cousins D, Crawford JT, et al. Spacer oligonucleotide typing of bacteria of the *Mycobacterium tuberculosis* complex: recommendations for standardised nomenclature. *Int J Tuberc Lung Dis* 2001;5(3):216-219.

Fitzpatrick LK, Hardacker JA, Heirendt W, Agerton T, Streicher A, Melnyk H, Ridzon R, Valway S, Onorato I. A preventable outbreak of tuberculosis investigated through an intricate social network. *Clin Infect Dis* 2001;33:1801-1806.

Johnson J, Okwera A, Hom DL, Mayanja H, Kityo CM, Nsubuga P, Nakibali JG, Loughlin AM, Yun H, Mugenyi PN, Vernon A, Mugerwa RD, Ellner JJ, Whalen CC. Duration of efficacy of treatment of latent tuberculosis infection in HIV-infected adults. *AIDS* 2001;15:2137-2147.

Lounis N, Bentoucha A, Truffot-Pernot C, Ji B, O'Brien RJ, Vernon A, Roscigno G, Grosset J. Effectiveness of once-weekly rifapentine- and moxifloxacin-containing regimens against *Mycobacterium tuberculosis* in mice. *Antimicrob Agent Chemother* 2001;45:3482-3486.

Murthy KJR, Frieden TR, Yazdani A, Hreshikesh P. Public-private partnership in tuberculosis control: experience in Hyderabad, India. *Int J Tuberc Lung Dis*

2001;5(4):354-359.

O'Brien R (responsible author). Global Alliance for TB Drug Development. Scientific blueprint for TB drug development. *Tuberculosis* 2001;81(Suppl 1):1-52.

Range N, Ipuge YA, O'Brien RJ, et al. Trend in HIV prevalence among tuberculosis patients in Tanzania, 1991-1998. *Int J Tuberc Lung Dis* 2001; 5(5): 405-412.

Sackoff JE, Torian LV, Frieden TR. TB prevention in HIV clinics in New York City. *Int J Tuberc Lung Dis* 2001;5(2):123-128.

Saiman L, San Gabriel P, Schulte JM, Vargas MP, Kenyon T, Onorato IM. Risk factors for latent tuberculosis infection among children in New York City. *Pediatrics* 2001;107(5):999-1003.

Schulte JM, Valway SE, McCray E, Onorato IM. Tuberculosis cases reported among migrant farm workers in the United States, 1993-97. *Journal of Health Care for the Poor and Underserved* 2001;12(3):311-322.

Small PM and Fujiwara PI. Management of tuberculosis in the United States. *N Engl J Med* 2001;345(3):189-200.

Tanzania Tuberculin Survey Collaboration. Tuberculosis control in the era of the HIV epidemic: risk of tuberculosis infection in Tanzania, 1983-1998. *Int J Tuberc Lung Dis* 2001;5(2):103-112.

Taylor Z, O'Brien RJ. TB elimination: are we willing to pay the price? (editorial). *Am J Respir Crit Care Med* 2001;163:1-2.

Tuberculosis Research Centre, Chetput, Chennai, India. Trends in the prevalence and incidence of tuberculosis in South India. *Int J Tuberc Lung Dis* 2001;5(2):142-157.

Villarino, EM and Clair M. Tuberculosis due to environment, biology, or both? *Chest*

2001;120(5):11435-1437. Editorial.

PERSONNEL NOTES

Lauri Bazerman, MS, completed her 2-year ASPH fellowship with the Field Services Branch (FSB) in December 2001. During her time with DTBE, Lauri spearheaded an evaluation of the CDC recommendations for TB prevention and control in jails. This project is an important contribution to understanding the present state of TB control in correctional settings. Lauri also worked on evaluating the California TB Indicators Project (TIP). For her role in that project, Lauri was nominated for the Carl W. Tyler, Jr., Award for Excellence in Public Health Practice offered by ASPH and CDC. Lauri has relocated to Providence, Rhode Island, where she will be consulting on a community-based needs assessment and working to assist the community in setting health priorities. We wish Lauri good luck in her new public health career.

Betty Boulter joined the Epidemiologic Studies Section of the Surveillance and Epidemiology Branch (SEB), DTBE, as a Program Analyst in early December 2001. She will help develop and support the financial side of the newly formed Tuberculosis Epidemiologic Studies (TBES) Consortium. Betty received her BA in General Business from the University of Maryland. She has worked in various capacities in grants and contracts organizations for over 25 years, and has been employed at all levels of government, including federal, state, and local as well as for private nonprofit organizations. She has been with CDC in the Procurement and Grants Office for the past 17 years and worked most recently as the Chief, Information Technology Section, where she and her staff were responsible for purchasing all of the computer equipment, software, and services required by all of CDC's organizations. During her time with

CDC she has also worked with contracts involving scientific research and studies, purchase and maintenance of scientific equipment, consultant services, and financial management systems.

Jeanne Courval, PhD, MPH, has joined DTBE as a research statistician in the Surveillance and Epidemiology Branch. She graduated from Columbia University School of Public Health in 1993 with a PhD in epidemiology and strong training in biostatistics and epidemiologic methods. Her primary area of interest is infectious diseases, especially tropical public health, and health needs of underserved populations. From 1993 to 1998, Jeanne was an assistant professor in the Department of Epidemiology at Michigan State University in East Lansing, Michigan, where she participated in the development of a masters in epidemiology program which accepted its first students in fall 1994. While at Michigan State University, her research areas included efforts to field test newly developed malaria diagnostic methods, analysis of clinical trials of new treatments for severe malaria, and investigation of associations between consumption of sport-caught Great Lakes fish and human reproductive health outcomes. Another major area of interest is the epidemiology of drug resistance, especially application of molecular technologies to study the occurrence and spread of drug resistance. Her primary focus in this research has been drug-resistant malaria, but she has also had experience with investigations of the development of drug resistance in amebiasis, nosocomially acquired enterococcus, and schistosomiasis. After relocating to Atlanta in 1998, she began working with CDC in the Hospital Infections Program in 1999 as a research specialist, moved to the Division of Parasitic Diseases in 2000 as a research epidemiologist (both in the National Center for Infectious Diseases), and came to DTBE in

September 2001 as a research statistician.

Charles ("Chuck") Woodrow Gaines retired from CDC on January 3, 2002, after serving many years as an effective and knowledgeable TB control public health advisor. Chuck joined CDC with the Sexually Transmitted Disease (STD) program on November 14, 1971, as a Co-Op, a position which later came to be known as Disease Intervention Specialist. His first STD assignment was with the Detroit, Michigan, Department of Health. Chuck's next move with the STD program took him to Gary, Indiana. In 1974 he joined the Division of TB Control and transferred to New York City. He had a 5-year tour of duty in NYC, where he worked as a clinic manager at the Bedford-Stuyvesant TB Clinic, at Kings County Hospital, at Metropolitan Hospital, and at Staten Island. In 1980, he transferred to Philadelphia, Pennsylvania, as the TB program manager. In 1980 he assisted with the Cuban Refugee Program at Ft. Chaffee, Arkansas. He was also a member of the team that assisted with the first documented outbreak of drug-resistant TB that occurred in 1976/77 in rural Alcorn County, Mississippi. In 1982, he moved to Chicago as the assistant TB Program Manager under John Kuharik. Later, he returned to the STD program as the district program manager in Toledo, Ohio. Leaving Ohio in 1990, he served as the assistant to the program manager in the Jackson, Mississippi, STD program and as assistant to the program manager for the STD program in Richmond, Virginia, in 1993. In 1997 he came to CDC headquarters in Atlanta, Georgia, to accept responsibilities in the Division of TB Elimination as a program consultant and project officer. His work with TB control officers and other public health officials resulted in enhanced TB prevention and control activities in the Western regions of the United States. Chuck was responsible for managing and providing consultation and technical assistance to over 12 project

areas, mostly Western states, including Alaska. He took great pride in providing direction, leadership, and proper stewardship of each project's use of federal funds in achieving national TB goals and objectives. Chuck leaves a rich and robust legacy of communicable disease interventions and experience upon his retirement from the CDC. He is looking forward to being "captain of leisure time" as he guides his fishing boat in search of the Big One. We wish him great success and happiness.

Kashef Ijaz, MD, MPH, joined DTBE in the Surveillance and Epidemiology Branch (SEB) on January 13, 2002. He has 7 years of experience in public health and community medicine and 6 years of experience working in TB control as a medical epidemiologist in Arkansas. Dr. Ijaz has extensive experience in TB outbreak investigations, public health field work, high-risk population groups (prisons, shelters and nursing homes.), TB molecular and genetic epidemiology and a host of other TB experiences. He obtained his medical degree from King Edward Medical College, University of Punjab, Lahore, Pakistan, and his masters degree in public health from the University of Oklahoma Health Sciences Center in Oklahoma City, Oklahoma. He joined SEB as a medical epidemiologist in the Outbreak Investigation Section.

Scott Jones of the Field Services Branch has transferred from his position as a Program Consultant in Atlanta after having accepted a reassignment to Montgomery, Alabama. He will serve as the senior public health advisor for the Alabama Department of Public Health. He will work closely with Nancy B. Keenon, Director of TB Control for Alabama, and will provide assistance and technical support to the state. Scott has been an outstanding Program Consultant with Field Operations Section II of FSB since he arrived at headquarters in November 1998. He has provided strong

guidance, direction, and support to his project areas over the course of the past 3 years, and has taken a very active role with numerous assignments within the division. Scott will bring to his new assignment his field experiences in New Orleans, South Carolina, Kentucky, and Texas. His report date for Montgomery was November 18, 2001.

Dhananjay Manthripragada has joined the staff of the Surveillance and Epidemiology Branch as a visiting student researcher from Duke University in North Carolina. Dhananjay brings with him a wide range of public health experience, including stints with the Occupational Safety and Health Division of the World Health Organization in Geneva and the Government Relations Department of the American Public Health Association in Washington, DC. In addition, Dhananjay has contributed to a number of grass-roots public health initiatives in Brazil, Greece, and India. Dhananjay has been a part of the SEB team since the beginning of October 2001. He has been learning about and contributing to DTBE efforts with the 2RZ investigation, the 1998-2000 transgender TB outbreak in Baltimore/NYC, and the ongoing investigation into the cluster of TB cases among exotic dancers and their close contacts in Wichita, Kansas.

Stuart McMullen has rejoined DTBE and the Field Services Branch (FSB) after his assignment to the Global AIDS Program. Stuart will begin his new assignment at headquarters as the FSB information technology coordinator for the case management module of TIMS/NEDDS. Stuart has been with CDC since 1989, beginning his career with the Sexually Transmitted Disease (STD) program in Miami, Florida. His next two assignments continued with the STD program in Philadelphia (1991/92) and Los Angeles (1992/93). It was during his Los Angeles (LA) assignment that Stuart joined DTBE in June 1993. During his tenure in LA, he was

involved in projects relating to high-risk populations and multidrug-resistant TB, conducted quality assurance reviews, and worked with nursing managers on reporting requirements. He managed the Satellite TB Clinic Food and Housing Homeless Incentive Program, developed database systems, developed incentive programs, and carried out numerous other activities in LA. In 1996 Stuart was promoted to the position of senior public health advisor to the California Department of Health Services, TB Control Branch in Berkeley, California. Stuart reported to Atlanta on November 28.

Sonal Munsiff, MD, has been selected as the Director of the New York City TB Control Program where she has been serving as the Acting Director since December 2000. As a Medical Officer for CDC in the Division of TB Elimination, Dr. Munsiff will remain with the New York City Department of Health. She is board certified in internal medicine and infectious diseases and has a broad range of experience in the field of TB. She has been with the TB Program since the height of the recent TB epidemic in New York City in 1992, initially as physician-in-charge at the Morrisania chest clinic, then as medical consultant for the Queens and Bronx regions and from 1996 as Director of the Epidemiology Unit for the program. She became quite familiar with the epidemiology and management of TB in the City over the past decade. Dr. Munsiff is interested in further developing research in the epidemiology and treatment of drug-resistant TB, clinical aspects of TB in HIV-infected persons, the global epidemiology of TB particularly as it affects the TB incidence in New York City, and the challenges of identifying and treating persons with latent TB infection who are at high risk of developing disease.

John Seggerson, DTBE's Associate Director for External Relations, retired from CDC on January 3, 2002. John is well known as an enthusiastic and seemingly

tireless advocate of and contributor to public health programs and especially to TB control. His 38-year career with CDC began in June 1963. Soon after graduating with a major in history from St. Joseph's College, he joined CDC as a cooperative employee of the Division of Venereal Disease Control assigned to the Chicago Board of Health. In 1964-65, he was responsible for management of the Venereal Disease Control Unit of the Cook County (Illinois) Health Department. His work in TB began in 1965 when he transferred to the Division of TB Control and was assigned to northeastern Pennsylvania to coordinate projects in Wilkes-Barre, Scranton, and Kingston. He transferred to Buffalo, New York, in 1967 and for 2 years was the TB program manager at the Erie County Health Department. He was assigned to the Bureau of TB Control, New York State Department of Health, in 1968 and served for 2 years as the manager of the statewide program. In 1970 he was selected for the supervisory public health advisor position in CDC's Region III office in Philadelphia. In 1972 he was appointed Acting Associate Regional Health Director and Program Director for Disease Control with responsibility for CDC programs and supervision of STD, TB, immunization, and lead prevention field staff in Region III. He became Director, Division of Prevention, in 1974 and had broad responsibility for Region III's CDC-funded programs and field staff in STD, TB, immunization, lead prevention, and rat control. In 1977 John transferred from the regional office to the Division of TB Control in Atlanta and served as Chief of the Program Services Branch for 19 years. In that capacity, he nurtured the new TB cooperative agreements of the early 1980s and played a major role in managing the division's funding of state, city, and territorial programs. He was also responsible for the division's training and education activities; programmatic, technical, and management consultation and assistance; national surveillance

system; evaluation of TB programs; and supervision of CDC staff assigned to state and local health departments. In recognition of John's unique attributes and interpersonal skills in networking and partnership-building, he was appointed Associate Director for External Relations, DTBE in August 1996. In that capacity, he lead the division's work and coordination with non-CDC government, private, professional, and voluntary organizations and agencies. Among those groups with which John established new and strengthened affiliations are the National Coalition for TB Elimination, the American Lung Association, the American Thoracic Society, the National TB Controllers Association, and the National TB Nurse Coalition. He was responsible for coordinating efforts of the Federal TB Task Force and assisting with coordination of the Department of Health and Human Services Advisory Council for the Elimination of Tuberculosis. He also provided the division's oversight of the three CDC-funded Model TB Centers in New York City, Newark, and San Francisco and played a lead role in planning and producing the annual National TB Controllers Conferences.

John had several special assignments, including the Indochinese Refugee Health Screening Program at Fort Indiantown Gap, Pennsylvania, in 1975; the Legionnaire's Disease Investigation Team in 1976; the Cuban Refugee Screening Program in 1980; and the TB Review Team in Southeast Asia in 1986. He served on numerous national and state committees and task forces, was a member of several American Lung Association-sponsored TB program review teams, and was an active contributor to the planning for World TB Day from 1997 through 2000. In 1988/89, he was President of the Watsonian Society, a CDC organization for public health advisors that was established in 1986.

Everyone who has worked with John through the years knows what a loss his

departure represents. His loyalty to CDC, dedication to the DTBE mission, and ability to challenge and inspire his coworkers will be greatly missed. It is difficult to visualize the division without John. Some staff have affectionately said that he would work until CDC's mission had been completed and turn off the lights the day CDC closes. Although his plans for the future are not firm at this time, he hopes to continue to be involved in public health and TB. He said, "TB elimination for me is more than a job - it is a passion, and I do not intend to give it up in retirement." This is good news and provides incentive to those who remain to work toward the day when John can come back and turn off the lights.

Erika Vitek, MD, joined DTBE's International Activities in November as a senior service fellow. She received her MD from the First Moscow Medical Academy in 1989 and worked as an epidemiologist in the Russian National Diphtheria Unit in Gabrichevsky Institute, Moscow. She also worked as a trainer for CDC epidemiology courses for visiting epidemiologists from the former Soviet Union. She joined the Communications and Education Branch of DTBE in 2000, where she assisted staff in developing training materials for field activities in Russia. Erika will be working on TB prevention and control efforts in countries in Eastern Europe and Russia with a focus on multidrug-resistant (MDR) TB. She will be involved in a number of diverse activities including developing protocols, technical papers, scientific manuscripts, translating technical written materials between Russian and English, and conducting monitoring missions to field sites to evaluate progress in programmatic activities.

IN MEMORIAM

Lydia B. Edwards, MD, died in Bedford, Massachusetts, on November 7, 2001, at

the age of 96. She was born in Berkeley, California, on June 6, 1905. Educated at the Ecole Superieure in Brussels, Belgium, the Mozarteum in Salzburg, Austria, the University of Rome, and the University of Paris, she graduated from Radcliffe College in 1927 and Johns Hopkins Medical School in 1932, where she later served as Director of the Pediatric Outpatient Department and Director of the Children's Tuberculosis Clinic. In 1943 she was appointed to the U.S. Public Health Service, at the time the only woman to be a commissioned officer therein, and served for the duration of World War II in Yugoslavia. In 1946 Dr. Edwards joined the National Institutes of Health TB Research Program in Bethesda, Maryland, and in 1948 was asked by the World Health Organization to help expand the anti-TB program throughout the world. From 1948 to 1955 she was based in Copenhagen, Denmark, and traveled throughout Europe, India, Russia, and Japan to support and oversee the program. From 1955 until her retirement as Colonel in 1973, Dr. Edwards continued her work with the Public Health Service in Bethesda, living in Washington, DC. During retirement, she served as a tutor at a public school in Washington; lectured on epidemiology at Johns Hopkins School of Epidemiology; and was an active member of Friends of the National Zoo, the Women's National Democratic Club, the Chevy Chase Club, the Colonial Dames Society, and Radcliffe and Johns Hopkins alumnae/alumni groups. She was honored by the Johns Hopkins School of Hygiene and Public Health as a "Hero of Public Health" and by Radcliffe College for her work in medicine and epidemiological research.

Richard L. Riley, MD, died December 20, 2001, in Athol, Massachusetts, at the age of 90. Dr. Riley's work with guinea pigs at Johns Hopkins Hospital in the 1950s proved that particles the size of a mote of dust could transmit TB. Although he retired in 1978, Dr. Riley consulted on various projects until his death. His work from the 1950s and 1960s is still widely discussed, as scientists try to understand more about drug-resistant TB, and even how inhalation anthrax can be prevented. Recently, researchers gathered at CDC in Atlanta to discuss a federally funded project that will attempt to duplicate his TB experiments in Witbank, South Africa. Using his model, this project will try to determine how long people remain contagious from TB, and will also examine the effectiveness of using ultraviolet light to eradicate TB germs. That technique, which Dr. Riley pioneered at Hopkins, is now part of a national project to prevent the spread of TB at homeless shelters. The project was started by Dr. Edward Nardell, a Harvard Medical School professor who began working with Dr. Riley in 1983 after hearing him give a talk on ultraviolet light. A native of North Plainfield, New Jersey, Dr. Riley graduated from Harvard University in 1933 and Harvard Medical School in 1937. During World War II naval service in Pensacola, Florida, he became interested in the problem of how pilots could go higher and still breathe properly and launched his research on the physiology of respiration. After the war, he went to the Columbia School of Medicine in New York but was recruited in 1950 by Johns Hopkins. Six years later, at a time when TB was a major national killer, he and a team that included his former Harvard mentor launched a 4-year experiment that became crucial to preventing the disease.

Taking over a six-room ward at the top of the Veterans Administration Hospital in Baltimore, Dr. Riley's team set up 150 guinea pigs in cages, and connected air ducts from the cages to the rooms of TB patients. The results proved that even the tiniest particles, called droplet nuclei, coughed up by infected people could transmit the disease. From 1960 to 1977, Dr. Riley was chairman of the Department of Environmental Medicine at Hopkins, and in 1970, the National Tuberculosis and Respiratory Disease Association awarded him its highest honor, the Edward Livingston Trudeau Medal.

George Victor Tomlinson of Richmond, Virginia, died November 24, 2001. Mr. Tomlinson was the father of Missouri TB Controller Vic Tomlinson. Better known as "Tommy" to friends and coworkers, he was a long-time employee of the Virginia Department of Health (VDH), where he worked for the Division of TB Control. Tommy retired from his career at VDH as the coordinator of the x-ray program in the late 1980s. Tommy closed out an era in TB Control when it was not uncommon to see mobile units offering x-rays at factories, schools, and even street corners. Tommy will be missed by all.

CALENDAR OF EVENTS

April 22-24, 2002

Effective TB Interviewing and Contact Investigation**Newark, New Jersey**

NJ Medical School National TB Center

Contact: Rajita Bhavaraju

Tel: (973) 972-4811

April 22-26, 2002

51st Annual Scientific Conference of the Epidemic Intelligence Service (EIS)**Atlanta, Georgia**

April 22-26, 2002

Postgraduate Course on Clinical Management and Control of Tuberculosis**Denver, Colorado**

National Jewish Medical and Research Center

Contact: Catheryne J. Queen

Tel: (303) 398-1700; fax: (303) 398-1806

May 6-9, 2002

Case Management and Contact Investigation Course**San Francisco, California**

Francis J. Curry National TB Center

Contact: Training Coordinator

Tel: (415) 502-4600; fax: (415) 502-4620

E-mail: tbcenter@nationaltbcenter.edu

June 3-4, 2002

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

NJ Medical School National TB Center

Contact: D.J. McCabe

Tel: (973) 972-0978

June 3-5, 2002

The 4th World Congress on Tuberculosis**Washington, DC**

Cosponsored by NIH, WHO/TDR, and CDC

Detailed information about the program can

be found on the meeting Web site

(<http://www.niaid.nih.gov/dmid/tuberculosis/tbcongress/>)

June 18-19, 2002

2002 National TB Controllers Workshop**Alexandria, Virginia**

National TB Controllers Association (NTCA)

and CDC

NTCA contacts: Walt Page or Linda Smith

(770) 455-0801

CDC/DTBE contact: Sherry Hussain

(404) 639-8989

September 24-26, 2002

TB Intensive**San Francisco, California**

Francis J. Curry National TB Center

Contact: Training Coordinator

Tel: (415) 502-4600; fax: (415) 502-4620

E-mail: tbcenter@nationaltbcenter.edu

October 16, 2002

Medical Management of TB in the Person Living with HIV**Newark, New Jersey**

NJ Medical School National TB Center

Contact: D.J. McCabe

Tel: (973) 972-0978

TB Education and Training Network (TB ETN) Membership Form

Please print or type your responses.

Date: _____

Name: _____ Degree(s): _____

Applying as (*check one box*):

- ~ Current member (*member of TB ETN during 2001*)
- ~ New member (*have not been a member of TB ETN*)

Type of membership (*see back of form for more detailed information*):

(*check one box, even if you are a current member*)

- ~ Active member (*has a lead role for TB education and training [E&T] in agency; **active** participant of TB ETN*)
- ~ Information only (*does not have a lead role for TB E&T; **inactive** participant of TB ETN*)

Job Title: _____

Employer: _____

Address: _____

Phone: _____ Fax: _____

E-mail: _____

Please describe your job responsibilities as they relate to TB E&T activities (*limit to 5*):

What percentage of time would you say you spend on TB E&T activities? _____

Do you have any areas of special interest/expertise that may strengthen the TB ETN? (*limit to 5*)

What do you hope to gain by membership in the TB ETN? _____

~ I tentatively plan to attend the annual meeting and workshop in August 2002.

Additional comments: _____

**Thank you for your interest! Please send completed form to:
Vivian Siler by fax at (404) 639-8960.**