DEPARTMENT OF HEALTH & HUMAN SERVICES Public Health Service

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

TB Notes
No. 1, 2012

Dear Colleagues:

The Division of Tuberculosis Elimination (DTBE) was saddened to learn of the unexpected death of our former colleague, Dr. ShaJuan Colbert, who passed away in early February. She had worked in DTBE's Communications, Education, and Behavioral Studies Branch (CEBSB) before taking a detail to the NCHHSTP Office of Health Equity. Please see the Personnel Notes section for further details.

On December 8–9, 2011, the first semi-annual meeting of the newly constituted Tuberculosis Epidemiologic Studies Consortium (TBESC) took place in Atlanta. On January 14, 2012, the fourth bi-annual Southeastern Mycobacteria Meeting took place in Atlanta. Reports about these important meetings are included in this issue.

As you know, DTBE science staff developed guidelines for the use of a 12-dose combination regimen of isoniazid and rifapentine for latent TB infection; these guidelines were released on December 9, 2011, in CDC's *Morbidity and Mortality Weekly Report (MMWR).* In preparation for that release, DTBE's CEBSB developed and updated a variety of education and communication materials. Please see the related article in this issue, which includes links to these useful materials.

Each year on March 24, CDC and others around the world observe World TB Day. On this day, we commemorate the date when Robert Koch announced his discovery of the bacillus that causes tuberculosis (TB). Around the world, TB programs, civic groups, non-governmental organizations, and others participate in World TB Day activities to raise awareness about their TB-related problems and solutions, and to support worldwide TB control efforts. This year, CDC joins the global Stop TB Partnership in adopting the slogan "Stop TB in my lifetime," calling for a world free of TB. This theme encourages people all over the world, from the youngest to the oldest, to make an individual call to stop TB and to say what changes in TB treatment and prevention they expect in their lifetimes.

For examples of past World TB Day events, links to World TB Day planning resources, fact sheets, posters, and other materials that may be of assistance to you in your World TB Day activities, please visit the World TB Day section on the DTBE Website at http://www.cdc.gov/tb. These and other materials may be obtained according to the ordering instructions on the webpage.

The CDC observance of World TB Day will be held on March 22 at CDC's Roybal campus, in collaboration with our colleagues in the CDC Center for Global Health. In addition, the fact that March 24 falls on a Saturday this year works out well for the organizers of the Atlanta TB Awareness Walk. This energizing event, held in Atlanta's Grant Park, is now in its sixth year. More information about these events will be provided in the next issue of *TB Notes*.

If you are planning an event around World TB Day, we would like to hear about it. As soon as your event is planned, please send a completed event form by e-mail to Ms. Ijeoma Agulefo at iaa1@cdc.gov. Please contact Ije if you do not have an event form. We will post these activities on the World TB Day section of the DTBE web site.

I look forward to hearing and reading about the creative and resourceful activities many of you will be carrying out for this year's World TB Day!

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

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Division of Tuberculosis Elimination ♦
National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention

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HIGHLIGHTS FROM STATE AND LOCAL PROGRAMS

Amistad Binational TB Project

On October 6, 2011, Dr. David L. Lakey, Commissioner for the Texas Department of State Health Services, and Dr. Raymundo S. Verduzco-Rozan, Secretary of Health for the State of Coahuila, Mexico, came together with citizens from the states of Texas and Coahuila to sign a joint statement of cooperation. The signing of this statement was the official beginning of their collaboration in a project that will be called the Amistad Binational Tuberculosis Project. Dr. Sandra Guerra, Director, Texas Health Service (THS) Region 8, was the host of the signing ceremony that was held in Del Rio, Texas. The Amistad TB Project will be a collaborative effort between THS Region 8; the Texas cities of Del Rio and Eagle Pass; and the Coahuila city of Piedras Negras in Mexico. Ms. Rita Espinoza will be the Region 8 point of contact for the Amistad Binational TB Project.

Dr. Lakey and Dr. Verduzco-Rozan signing the binational agreement.

In addition to Drs. Lakey, Verduzco-Rozan, and Guerra, several other U.S. and Mexican officials were present. These included Julia S. Goldberg, M.P.H., Acting General Manager, U.S. Section, U.S.-Mexico Border Health Commission; Dr. Francisco Elizalde Herrera, Undersecretary of Health of the State of Coahuila; Dr. Maria Teresa Zorrilla Carcaño, Mexico Section Secretary, U.S.-Mexico Border Health Commission; and Dr. R. J. Dutton, Director, Texas Dept. of State Health Service Office of Border Health.

The agreement between the two states declares their intentions to:

- Respect the standards, procedures, laws, and needs of each state, while striving to reduce the burden of TB along the Texas-Coahuila border;
- Work cooperatively to pursue joint opportunities to effectively address TB prevention and control across our shared border;
- Form a Bi-state Steering Committee on TB to seek opportunities for our respective states to work collaboratively to ensure a reduction in the mortality, morbidity, and transmission of TB across our shared border; and
- Request support of the U.S.-Mexico Border Health Commission in order to ensure the most effective and efficient use of the resources assigned by each participant for the execution of TB prevention and control as described in the agreement.

—Submitted by Charles Wallace, PhD, MPH
Manager, Tuberculosis Services Branch
Texas Department of State Health Services

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

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Visit DTBE's Internet home page,
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for other publications, information, and
resources available from DTBE.

TB Experiences in "Sin City": Collaborating with Corrections Workers in Las Vegas

Introduction

Public Health Advisors (PHAs) encounter many different challenges and experiences in the field. My own personal experience in moving back west to Las Vegas, also known as "Sin City" and "Lost Wages," has been filled with many new experiences and new opportunities to learn about TB. Although my role as a PHA for the Southern Nevada Health District (SNHD) consists of various day-to-day activities and duties, my main role since arriving in Las Vegas has been working with and educating private physicians, providing assistance in contact investigations in hotel/casinos, and working as a liaison for the area's correctional facilities. The latter has definitely been a "new TB experience" and is the focus on this report.

In working with the SNHD's TB clinic activities, I have come to understand that my greatest opportunity for making a difference here is to serve as a liaison, strengthening the local health department through communication with outside health care providers. Thus, I have been working with correctional health care staff to improve working relationships and to increase collaboration between the agencies. Ideally, increasing this communication will eventually improve case reporting, as well as the exchange of information about case management. In addition, effective communication and improved cooperation with correctional facilities staff will improve TB screening practices in facilities and will ensure continuity of care and completion of treatment. Therefore, my main function in Clark County will be to strengthen communications with these outside providers.

Procedures/Activities

During my first few weeks at SNDH, I researched and reviewed the local state policies and regulations in relation to TB control in correctional facilities. Based on guidelines from CDC ("Prevention and Control of Tuberculosis in Correctional and Detention Facilities," CDC; MMWR) and supporting documentation in the Nevada Administrative Codes, I drafted a correctional liaison agreement for the SNDH and all of the Nevada correctional facilities. After discussing the agreement with the SNHD nursing managers and supervisor, we concluded that this agreement should be adjusted and tailored to each facility, since the facilities vary by capacity, average length of time inmates spend in facility, number of prior TB cases and population, screening process, etc. Before proceeding with tailoring each facility agreement, I contacted each facility's medical nursing supervisor to schedule a tour of their facility and conducted a brief assessment of their current TB screening policy and practices. My goal was to better understand each site's current screening method and discharge process, from the time the

detainee is brought in, all the way through their release or transfer.

I started my first full assessment with Clark County Detention Center (CCDC). Upon my arrival at CCDC, the nursing supervisor greeted me in the lobby and escorted me to the booking area. This area seemed as busy as an emergency room waiting area in the early morning hours. I was shown their databases for screening assessment and for placement and reading of tuberculin skin tests (TSTs). CCDC tests every inmate coming in. When I asked for documentation of TST readings, they showed me a list of inmates with their locations in the facility and who was scheduled for a reading on that date. The readings are done by the Medical Assistant.

As we walked through the facility's hallways, we occasionally crossed line-ups of inmates facing the wall. I was next taken to the medical floor, where the negative-pressure rooms are located. There are also medical offices, a dental services area, and a nurse's station (similar to a nurse's station in a hospital). There I was introduced to the rest of the medical staff. I concluded my visit by suggesting follow-up in-service training and the possibility of my revisiting the facility at a future date.

Two weeks from my initial tour at CCDC, I was back. This time my mission was to "shadow" the nurses and observe their booking and screening procedures, as well as their TST reading techniques. I was in booking from approximately 8:30 am to 12:00 noon. It was quite a scene: I observed inmates yelling "Officer!" and banging hard on their cell doors; saw officers running and attempting to catch a troubled detainee; and heard officers yelling at the crowd in the booking area that they all had to sit down and raise a hand if they needed the restrooms or the phones.

I shadowed three busy nurses working in booking who were all conducting initial medical assessments and asking questions about medical history data, including questions about behavioral issues such as suicide risk and drugs habits. There were only a few TB-related questions: TST history, chest X-ray history, and symptoms. In addition to the questionnaire assessment, the nurses took vital signs and placed TSTs.

Once I was finished in booking, I went upstairs with the Medical Assistant, who showed me the inmates' quarters and dorms. Armed with a list of inmates by location, the Medical Assistant and I visited the different floors. Each floor had a different designation; for example, female inmates had their own floor. Also, gang-related inmates were kept separate according to their gang to avoid confrontations. I learned that more guards were needed on these floors, owing to this highly violent population. There was an inmate on this floor whose TST reaction needed to be read, and the Medical Assistant and I entered the cell to read it. As we went into the cell, an additional guard entered behind us. We visited "open" areas where the inmates were called out by the guard from a list of inmates we were seeking for TST readings. These readings were done mainly during afternoon hours, since many of the inmates were in court during the morning hours.

Results of Activities

During the time spent in booking, I noticed a few technical issues with mishandling and storage of the tuberculin vials. The nurses in the booking area all had their own tuberculin vials; however, of the three tuberculin vials in use, only one was marked with the date on which it was opened. One of the nurses mentioned that they place approximately 125 to 150 TSTs daily, and one vial lasts about 2 days. I noted that the tuberculin vials were not insulated or protected from the light; they were kept on the nurses' desks near their computer screens.

A few other techniques were handled differently by all three nurses. For example, while one nurse was placing TSTs properly, the others

were placing them sometimes a bit too deeply and sometimes too shallowly. At one point, I saw tuberculin dripping from a detainee's arm.
In the booking area, I observed an opportunity for improving the screening process. A detainee who was being transferred in from another facility mentioned that he had recently had a TST placed at the City of Las Vegas Detention Center (thus he was still within the 72-hr. period). It was obvious that his skin test reaction was positive. When the detainee was not interviewed further about his positive reaction, I asked the detainee more information on when and where he received his skin test, and about possible exposure, e.g., if he knew anyone with TB. I located a ruler with the assistance of another health care worker. We then read his skin test and documented the reading, although according to the nurse in booking, they normally do not do any readings at booking, per their CCDC procedures. Most readings are done by Medical Assistants.

When observing the Medical Assistants reading a TST, I noted that they were wearing gloves. Normally, wearing gloves is standard procedure; however, gloves hinder the touching or palpating of an inmate's arm, and one's sensitivity to an induration is reduced. I further noticed that 2 out of 10 TSTs were not read owing to inmates being discharged after their court hearings. This problem could be reduced by scheduling a morning round of readings before court.

Lessons Learned
I experienced the booking process and the TST reading procedures in a correctional facility setting for the first time in my TB career. This experience allowed me to better understand the "correctional world," and also learn about correctional TB screening procedures.

Observing the frequent movement of inmates between various facilities and the court system provided me with the valuable perspective of how challenging it is to work with inmates and with the inmate release process. It is my hope that Clark County Detention Center management can improve the screening policies and procedures and also provide staff training. At the same time, we at SNHD will work with the corrections system by attempting to follow up on inmates who start TB treatment in the correctional system.

Future Plans
After my experience at Clark County Detention Center, I followed up with the Nurse Manager at the facility by sending her an e-mail summarizing my observations and recommendations. We scheduled tentative dates for TST in-service refresher training for her booking staff, which is composed of nightshift nurses, dayshift nurses, and Medical Assistants. We scheduled an early morning (6 am) short presentation for the nightshift workers, and another in-service training for the dayshift staff. I also plan to develop and implement a general TB 101 course or a TB infectiousness course for the corrections officers, to educate them on TB transmission and to teach them how to detect inmates with TB symptoms.

I'm planning to conduct similar activities for the other SNHD correctional facilities. I will continue working on an informal agreement between SNHD and the other facilities, and I will review their current infection control plans and their TST policies.

Although I was on this TB assignment only a short time as of this report, I can say that it has definitely been a fruitful experience packed with new challenges that have put my PHA skills to work.

—Reported by Maria Galvis
CDC PHA assigned to Las Vegas, NV

2012 National TB Controllers Association Awards Open for Nominations!

This is the third year the National Tuberculosis Controllers Association (NTCA) will be honoring individuals or organizations for their dedication and distinguished service in the field of tuberculosis. Nominations can be submitted by anyone and nominees do not need to be members of NTCA. The award categories are described below. Nomination forms must be submitted by April 2, 2012. The awards will be presented at the 2012 National TB Workshop, being held in Atlanta June 12–14. Submit nominations by e-mail to either of the NTCA Awards Committee Co-Chairs:
Shea Rabley, rableyss@dhec.sc.gov, or Peter Davidson, davidsonp@michigan.gov

NTCA Award Categories:
TB Controller of the Year – This is the National Tuberculosis Controllers Association's highest award. It recognizes an outstanding contribution and impact on tuberculosis prevention and control at the local, state, regional, or national level. The award recognizes what TB controllers are all about.

NTCA Presidential Award – The current NTCA President selects the recipient of this award to acknowledge special accomplishments of an individual or organization that has made an outstanding contribution to the NTCA or the TB community.

Carol Pozsik Nursing Award – This award honors exemplary care, service, dedication, or leadership in the field of TB nursing.

William Stead Clinician Award – This award recognizes outstanding commitment and performance by a clinician providing tuberculosis care, leadership, or mentoring.

Ed Desmond Award – This award honors exemplary service, dedication, or leadership to a tuberculosis laboratory professional.

Robert Koch Award – This award recognizes an outstanding contribution with a clinical, epidemiological or academic focus by a tuberculosis researcher in the quest for eliminating tuberculosis.

Dixie Snider Award – This award recognizes a CDC employee who has provided outstanding support, through partnership with a state or local tuberculosis community, in the interest of tuberculosis control and prevention.

Charles DeGraw Advocacy Award – This award recognizes an individual that has made an outstanding effort or achievement in advocating for increased support and recognition of tuberculosis control and prevention efforts.

Joe Ware Partner Service Award – This award recognizes an organization that has made a significant effort and/or contribution to the mission of tuberculosis control and prevention through advocacy and partner activities.

The form on the next page can be copied and used for nomination write-ups.

—Reported by Shea Rabley and Peter Davidson
NTCA Awards Committee Co-Chairs

National TB Controllers Association
2012 Award Nomination Form
Nomination Deadline – April 2, 2012

Nominee's Name _____

Agency (if applicable)_____

Address_____

E-Mail_____

Award Category_____

Will your nominee be attending the 2012 National TB Controllers Conference? _____

Name of person(s) submitting nomination_____

Agency/Address _____

Phone _____E-mail_____

In the space below, describe the professional background and merits of nominee which meet the award criteria/description. Attach additional pages as necessary.

Evaluation of the National Tuberculosis Indicators Project

Background: In 2006, CDC identified 15 high-priority TB control activities as national TB program objectives. The National Tuberculosis Indicators Project (NTIP) is a secure web-based system established in 2009 to monitor the progress of state and local TB programs toward meeting these objectives. NTIP generates reports for each objective using data already submitted by programs as part of routine TB surveillance. In collaboration with the National Tuberculosis Controllers Association (NTCA), we conducted an evaluation to examine how programs use NTIP and to understand how surveillance data reporting affects NTIP.

Methods: In September 2011, NTCA distributed an online survey about NTIP to all TB controllers and registered NTIP users, representing 50 state and 18 major city or territorial TB programs. We also conducted interviews with CDC NTIP staff and NTIP users about the structure and function of NTIP.

Results: Of 406 people surveyed, there were 122 responses from 38 out of 50 (76%) state and 10 out of 18 (56%) major city or territorial TB programs. The most common job positions of survey respondents were TB program manager (35%), TB epidemiologist (27%), and TB controller (20%). Respondents were most commonly from programs that had 100–500 confirmed TB cases in 2010 (36%) or less than 50 cases (35%).

Responses on the uses of NTIP
The responses indicated that 41% use information from NTIP reports either monthly or quarterly, while 7% use it daily or weekly and 27% use it once or twice a year. A majority of programs (61%) currently use NTIP reports in addition to their own indicators to guide program activities. However, one quarter of respondents said they do not use information from NTIP reports at all, and instead use their own program data.

Programs most commonly use NTIP for preparing interim/annual reports to CDC (58%), summarizing surveillance and/or program data (57%), and checking the completeness and accuracy of data reported to CDC (52%). Of these uses, respondents identified summarizing surveillance and/or program data as the most helpful aspect of NTIP to their current work. The respondents also indicated that their ability to use NTIP effectively would be enhanced by more training on using the NTIP system (43%), more information about NTIP (36%), and further training on the national TB program objectives/performance targets and their rationale (34%).

Responses on surveillance data reporting and NTIP
Approximately one third of respondents stated that the lack of current or accurate surveillance data is the largest barrier to using NTIP effectively. Difficulties transmitting data to CDC have led to discrepancies in the data presented in NTIP reports compared to programs' own data. Overall, 40% of respondents reported problems uploading surveillance data from their system to CDC since 2009. Only 7% of respondents estimated that the data in NTIP reports matched completely with their own program data. Nearly half of the respondents answered that the data matched 60%–80% of the time, 12% felt the data matched 20%–40% of the time, and 1% stated that nothing matched. One third of respondents reported that NTIP has helped them identify problems with the accuracy of their own surveillance data.

The majority of respondents indicated their program uses a CDC-developed system (the National Electronic Disease Surveillance System [34%] or the electronic Report of Verified Case of Tuberculosis application [27%]) to transmit TB surveillance data to CDC. Other respondents use a commercially purchased system (14%) or a

system developed in-house by the TB program (14%). A greater proportion of respondents using commercially purchased or TB program developed systems had problems transmitting data when compared to those using CDC-sponsored systems (Figure 1).

Figure 1. Percentage of survey respondents reporting TB surveillance data transmission problems by data system type, United States, 2009–2011.

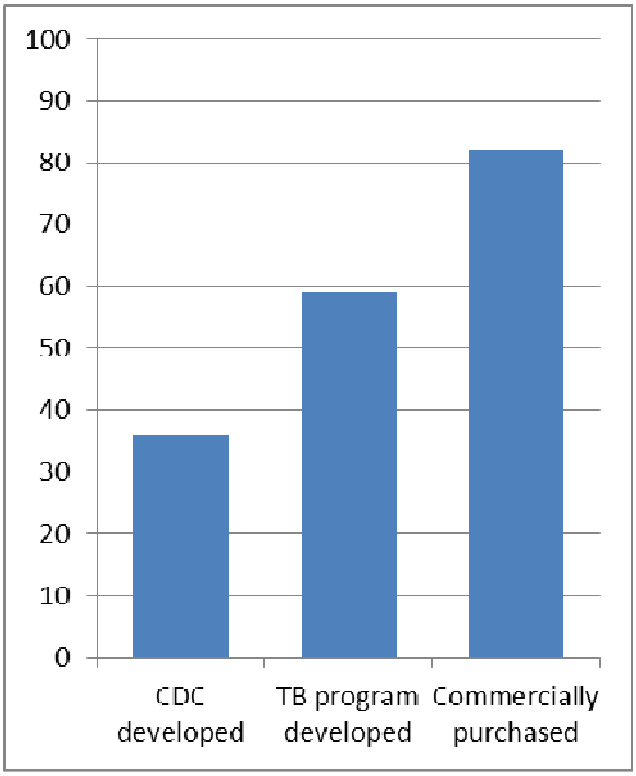


Figure 1 shows the percentage of respondents reporting data transmission problems, by data system type. Only 36% of those using CDC-sponsored systems to transmit TB case data reported problems, while 59% of those using in-house systems and 82% of those using commercially purchased systems reported problems.

Discrepancies can also occur between NTIP reports and local calculations if different data sources or different calculation methods are used. Several respondents pointed to these discrepancies as a reason NTIP reports are not more useful to them locally. In addition to discrepancies between NTIP data and local program data, respondents also pointed out discrepancies between NTIP and National TB Surveillance System data (NTSS). NTIP automatically pulls data from CDC's dynamic surveillance databases every week. Once the NTSS dataset is "frozen" in the spring of each year, any changes, corrections, or additions to cases counted in previous years will be reflected in NTIP, but will not be updated in NTSS until the following spring. In 2009 and 2010, these discrepancies were complicated when data for three states were manually corrected in NTSS, but not in NTIP. No manual corrections will be necessary in the future, so this source of discrepancies should not recur.

Conclusions: Ensuring that programs are able to transmit TB surveillance data in an accurate and timely manner will allow NTIP to track their progress toward meeting national TB objectives. This information can be especially useful to programs with insufficient epidemiologic support to develop and calculate their own indicators. If significant discrepancies exist between data received at CDC and program data, NTIP will not be able to help programs evaluate their performance.

The following aspects of NTIP can benefit from further examination:

1. <u>Timeliness and accuracy of surveillance data transmission</u>
   NTIP reports only contain information on TB cases already transmitted to CDC. Programs must be able to submit cases to CDC in a timely manner in order to have up-to-date reports. State and local TB programs can continue to work toward ensuring that they have complete and accurate data on all TB cases in their jurisdiction. Depending on when data are submitted to CDC, programs can then know the best time to generate NTIP reports. CDC can continue to support programs, especially those with in-house or

commercially purchased data systems, to ensure correct data transmission.

2. Opportunities to assist programs to use NTIP reports
   Programs have identified factors that explain why current NTIP methods used to calculate indicators can misrepresent the status of their programs. There must be an understanding as to how indicators are measured at the national level. CDC should expand communication and education about NTIP to ensure programs understand how NTIP reports are generated. Finally, continuing to respond to feedback from local and state TB programs about their experiences with NTIP and the national TB objectives will help guide future improvements.

—Reported by Robert Luo, MD, MPH, EIS Officer, Kai Young, MPH, and Adam Langer, DVM, MPH
Div of TB Elimination, and
Charles Wallace, PhD, MPH
Texas Dept of State Health Services

TB EDUCATION AND TRAINING NETWORK UPDATES

TB Tales

REACH is a non-profit organization based in Chennai, India, that has been dedicated to the fight against TB in India for more than 10 years. The REACH Lilly MDR-TB Partnership Media Program is an initiative of REACH, supported by the Lilly MDR-TB Partnership. (The Lilly MDR-TB Partnership is a public-private initiative led by Eli Lilly and Company. It is working to address the expanding crisis of multidrug-resistant (MDR) TB together with 17 global health and development organizations, academic institutions, and private companies.) REACH aims to harness the power of media to inform the public about preventing, controlling, and curing TB. In November 2011, the Program announced a short film competition for Indian filmmakers, *TB Tales.*

The competition did not require an entry fee and was open to all filmmakers across India, including students, amateur and professional filmmakers, and health care providers. Entries had to be between 30 seconds and 5 minutes long, with dialogue either in English or with English subtitles. Silent films, often more powerful than those with dialogue, were also eligible. All styles — e.g., fiction, documentary, drama, docudrama, animation — were welcomed. Any format, including films shot on mobile phones, would be considered.

The top three entries will receive citations and cash awards; the first-place prize (in rupees) is Rs 30,000 (about $600 USD), second place is Rs 20,000 (about $400 USD), and third place is Rs 10,000 (about $200 USD). REACH plans to feature the top 10 films on a dedicated YouTube channel.

The competition closed on January 15. A total of 24 entries, in several different languages, were received. Jury members include Suriya, actor; Gautham Menon, film director; Dr. P R Narayanan, Former Director, Tuberculosis Research Centre; Blessina Kumar, activist and Vice Chair, Stop TB Partnership Board; and Dr. Subhash Yadav, Technical Officer, The Union Southeast Asia Regional Office. An announcement of the winners is anticipated by February 15.

"We hope that this initiative, supported by the Lilly MDR-TB Partnership, will help improve

understanding about this disease, thereby providing accurate information to TB patients and connecting them to services," said Dr. Nalini Krishnan, Director, REACH. Added Anurag Khera, Director, Corporate Affairs, Eli Lilly and Company (India): "We believe that the graphic power of films can change perceptions and influence behavior. Films can be a very useful and effective medium for attaining and supporting our quest for better TB care and control."

To learn more about REACH and to view the winning and short listed films, visit Speak up to Stop TB at http://media4tb.org/index.html.

—Submitted by Linette McElroy
TB ETN

TB Rough Riders

Pictured left to right: Debbie Williams, Diana Fortune, Ayesha Bashir, Sarah Yazzie. Photo taken at sunset at Canyon de Chelly, Arizona.

The TB Rough Riders blazed a trail (in our Ford Bronco), November 28–December 2, 2011, through the Navajo Nation. The intrepid four provided TB education for 86 health professionals including clinicians, hospital and clinic nurses, and TB staff, in eight service units crossing two states and one nation, covering over 1200 miles.

Sarah Yazzie, Navajo Nation TB Program Manager, partnered with the New Mexico (NM) Department of Health and the Arizona (AZ) Department of Health to provide TB education to all eight Navajo Nation Service Units to address an increase in TB morbidity and mortality across the Navajo Nation. The presentations were given by Ayesha Bashir, MD, and Debbie Williams, RN, from the AZ Department of Health, and Deborah Isaacks, RN, BSN, and Diana Fortune, RN, BSN, from the NM Department of Health. Each 2-hour session included TB 101, TB Infection Control Practices, How to Become TB Lab Savvy, TB Contact Investigation Strategies, and TB Nurse Case Management.

The on-site educational campaign is part of an overall effort by the Navajo Nation and the NM Department of Health to address the increased TB mortality that was noted during the 2007–2009 study completed in New Mexico. Navajo patients were one of two groups identified as high risk for TB mortality. The study cited two reasons that related to increased risk: 1) patient delay in seeking treatment and 2) delay in clinician diagnosis.

The TB Rough Riders will continue to collaborate to address TB throughout the Navajo Nation.

—Reported by Diana Fortune, RN, BSN
TB Nurse Consultant
and TB Program Manager (acting)
NM Department of Health

They Go to Die: Portrayal of the TB/HIV Epidemic Among Mine Workers in South Africa

Jonathan Smith says he is not a film maker; he's a researcher – an epidemiologist to be exact. But, the buzz created by the screening of his short documentary, *They Go to Die*, at the 42nd UNION World Conference on Lung Health in Lille, France, in October 2011 suggests he might be both.

The work-in-progress film is a real-life account of Smith's journey as he learns about the

devastating impact of the South African gold mining industry on the TB/HIV epidemic there, and the blatant human rights violations that these workers face. As he sorts through a century of documented research on the issue, he comes to the sober realization that any further research on the issue will fail to enact change. Thus he begins his quest to find the mineworkers affected by this process.

Initially only driven by the data that highlight the importance of this issue, Smith travels to rural South Africa to live among and get to know four ex-miners and their families. He quickly discovers that their lives are more complex than simply "numbers" that fill the pages of an academic journal. As the film follows the never-before-seen lives of these miners, the viewer is made aware of the challenges that each miner faces in health and family life, and witnesses Smith's personal change as he overcomes cultural differences to create a personal bond with the men and their families. Despite this revolution, the film ends with the reality of the health situation of these men, and brings to life the gripping reality and importance of lack of access to essential medicines.

"Simply portraying an epidemic through the lens of a camera has been done before and continues to have limited effectiveness, even when those affected are the ones speaking about the disease and telling their personal stories. But if we turn an epidemic into an emotion, then we motivate change," says Smith.

They Go to Die explores the epidemics in the broader context of human life, instead of through only a narrow context of disease. It portrays the life of the individual as a whole, not solely the disease by which they are affected. It surfaces issues of health, human rights, and legal issues in the form of human relationships. In doing so, the film creates both a cathartic and educational experience. As a viewer from the rough-cut screening observed, "The strength of [the film] is

that it doesn't focus on disease and death, but rather the lives that TB and HIV take away."

In October 2011, Smith received an international award for his documentary and website. He was awarded the Tuberculosis Survival Prize at an awards ceremony in Lille, France. The annual award is given by the Tuberculosis Survival Project, with support from the Lilly MDR-TB Partnership.

Mr. Smith, an epidemiologist and lecturer at Yale University, began working on the video documentary while conducting epidemiological research on multidrug-resistant (MDR) TB in the mining industry. With no film experience, but plenty of heart and determination, he worked two jobs to fund his trip to South Africa, where he spent several months living with four miners coinfected with TB and HIV.

To view the documentary and related film clips and to learn more about the project, visit http://theygotodie.com/

—Submitted by Linette McElroy
TB ETN

TB PROGRAM EVALUATION NETWORK UPDATE

Known HIV Status Evaluation Project in Colorado

Background

The Colorado Department of Public Health and Environment (CDPHE) TB Program has statewide responsibility for the screening, treatment, and control of TB in that state. Colorado comprises 64 counties with populations ranging from several hundred to over half a million persons. For the years 2006 through 2010, Colorado's reported TB case counts were 124, 111, 103, 85, and 71. There were 8 TB/HIV patients in 2006 (7.5% of total TB cases); 3 in 2007 (3.3% of total), 2 in 2008 (2.2% of total), 4 in 2009 (5.5% of total), and 8 in 2010 (8.8% of total), which was the highest annual percentage of co-infection in the previous decade. During 2006-2010, the average prevalence rate of HIV infection among TB cases of all ages was 3.8%. Given that the majority of TB cases occurring in Colorado are among the foreign-born population, often coming from areas that are not only endemic with TB but also HIV, Colorado chose to develop an evaluation plan to improve the HIV testing rates to meet the national objective of 88.7% by 2015. It is important to note that before the monitoring of "Known HIV Status" through the National Tuberculosis Indicators Project (NTIP) as a national objective, HIV testing was only stressed in those cases 15 years of age and older.

Table 1. Annual HIV Testing Rates among Active TB Cases in Colorado, 2006–2011

Year	Active TB Cases Reported	Children with active TB <15 years old	Cases with Known HIV Status	% of Cases w/ HIV Status Known
2006	124	7	110	88.7
2007	111	7	93	83.8
2008	103	10	88	85.4
2009	85	11	73	85.9
2010	71	5	68	95.8
2011*	69	8	61	88.4

*Data are preliminary

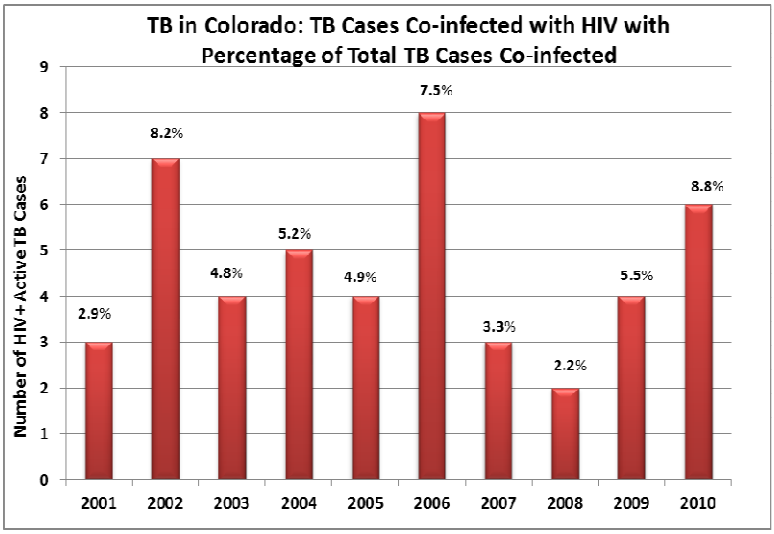
The goals of Colorado's Known HIV Status evaluation project were to examine, evaluate, and improve TB control and prevention activities as they relate to HIV testing and known HIV status of all active TB patients in the state and to develop capacity building and technical assistance activities as needed for local health department staff. During 2010, the focus was on assessing the education and training needs of county health department TB control staff specific to HIV testing. The initial assumption was that there was a cohort of public health nurses, probably rural, that were uncomfortable with HIV testing and the discussion of risk behaviors (sexual and drug-taking), leading to lower-than-desired HIV testing rates. As the survey results would show, we had much to learn.

First Steps

When the Deputy TB Program Manager joined the program in the summer of 2010, he was tasked with scaling up the HIV testing evaluation project. A line list of previous and current active TB cases with no accompanying HIV test result was created and analyzed in hopes of ascertaining trends or deficiencies in acquiring HIV test results from patients. The next step was developing a knowledge, attitudes, and practices (KAP) survey to administer to local health department TB staff related to HIV testing of active TB patients, with an eye toward informing the development of methods, activities, or policies to improve the HIV testing rate among active TB patients.

The TB Program sought the expertise of Dr. Susan Luerssen, a member of the CDPHE HIV/STI Section's Research and Evaluation Unit, to help develop a survey with succinct and measurable language that minimized ambiguity in the survey answers (the final survey questions are available at the TB-PEN wiki page http://tbpen.pbworks.com/w/page/4124488/FrontPage or from Pete Dupree at peter.dupree@state.co.us or 303-692-2677). Questions covered regional, institutional, and survey-takers' personal capacity and beliefs

around HIV testing, as well as questions designed to probe for both individual and systemic barriers to HIV testing. A link to the confidential online survey was sent out to all TB Program partners throughout the state, with an explanation of why the survey was being offered and how the information would be used. In early 2011, the survey was offered anonymously online for 2 weeks; 41 completed surveys were submitted and analyzed.



Survey Results

Addressing personal and agency capacity, only 34% of the respondents personally provided HIV testing services in their role in TB control; 61% of the respondents noted that someone in their health department offered such services. For those respondents who stated that no HIV testing services were offered in their agency, the primary reason given was that another agency nearby offered it; the second most common reason was a lack of funding. When looking at established HIV testing policies and procedures, only 27% answered in the affirmative; another 27% said "do not know," which is a concern in itself. Of the remaining 46%, a majority stated that they referred to CDPHE's or the Denver Metro TB Clinic's TB manual in such circumstances since their agency did not have such policies/ procedures regarding HIV testing of all active TB patients. Of those respondents whose agency offered HIV testing services, 35% offered conventional venipuncture testing using ELISA or Western Blot methodology, 46% offered rapid finger prick or oral transudate HIV testing, and the remainder gave differing answers such as "we let MD decide test type."

Survey Analysis

Below is an excerpt from the responses to two key questions from the survey, followed by a brief analysis:

10. Is HIV testing offered to all patients with active TB disease at your agency?

Yes	20	49%
No	11	27%
Don't Know	10	24%

The "no" responses are critical. Coupled with the responses to Question #11 below, we find that the TB Program has not been directive enough or has otherwise left the HIV testing imperative ambiguous. The 10 "Don't Know" responses to this basic service are equally concerning.

11. If no, please explain the circumstances under which a patient with active TB disease would not be offered an HIV test, or list any barriers your agency faces to offering HIV tests to all patients with active TB disease.

19 total responses presented as the top 3 recurring themes

#1 response: The cost; two types of responses: 1) expense to the local HD and 2) patient lacks funds to pay for an HIV test.
#2 response: ignorance of HIV testing directive
#3 response: no HIV or TB cases in county

Scariest response: "We don't get many active or latent cases so *we don't think to ask about HIV nor are we usually prompted by the state to do so."*

When comparing these survey results to the table of annual HIV testing rates (Table 1), it's apparent that the knowledge gap regarding the

importance of HIV testing of all active TB patients is shrinking or has disappeared entirely, and that our assumptions that there was HIV testing resistance from some nurses was completely wrong. Given the findings here, a clear and concise policy on HIV testing of active TB patients is needed to avoid any further confusion. There were repeated responses that some survey-takers were unaware of any HIV testing requirement. The fault for this falls to CDPHE's TB Program.

It is necessary to make abundantly clear what's expected of TB case managers, public health nurses, and even primary care providers caring for TB patients. Simply put, if they are offering care and treatment to a patient with active TB disease, that patient should be offered and given an HIV test as a part of his/her continuum of care (or there needs to be a recorded HIV test result in the past 3 months).

This policy might be framed as a protocol, complete with an algorithm to guide the TB/public health staff. The protocol should guide the staff person through different scenarios, such as the patient has no primary care provider; the health department has neither in-house HIV testing services nor funds for off-site testing; or the patient cannot pay out of pocket yet has no health insurance. With HIV testing, CDPHE will begin to meet one of its key program evaluation objectives, "Active TB patients without a recent (last 3 months) HIV test result will be identified and addressed by TB Program staff (via RVCTs and/or weekly Case Management) with the appropriate TB nurse case manager overseeing that patient's care and treatment."

It may ultimately suffice to simply continue the chorus loud and clear—the HIV status of every active TB patient in Colorado will be known, regardless of patient age, race, gender, socioeconomic status, or country of origin, based on established medical and public health standards. It is unacceptable to discover, late in the regimen of a patient who is not improving, that the patient is and has been HIV-infected during treatment. If a patient refuses an HIV test, at least it can be assured they've been given the opportunity to be tested; they would have to sign a waiver stating that they'd been given educational material about the importance of knowing one's HIV status, a copy of which would be kept by the TB Program. Their documented refusal would be prefaced by the educational component highlighting the dangers of coinfection such that the TB patient can make an informed decision about his/her long-term health. An HIV test result available in 20 minutes via rapid testing would be an enticement to those unsure or ambivalent about being tested.

Survey Limitations

Because this was an anonymous KAP survey, it's not possible to assess how many respondents came from large urban TB clinics, with experienced case management skills due to a consistent volume of TB cases, and how many came from more rural public health agencies working with smaller populations that don't see a high volume of active TB or HIV. This was a convenience survey and may not be representative of the statewide TB control staffs' knowledge, attitudes, and practices around HIV testing.

Next Steps

An HIV testing policy is being incorporated into the updated CDPHE TB Manual that is currently being drafted by Colorado's TB Program. A referral network for agencies not offering HIV testing is being considered and a laboratory HIV testing courier service (using the existing TB specimen courier service) is being developed. The courier service would transport whole blood to the state lab for HIV testing in a timely manner in situations where the local health department nor nearby agencies have a rapid HIV testing capacity.

—Submitted by Pete Dupree, MPH
Colorado Dept of Public Health and Environment
TB PEN

COMMUNICATIONS, EDUCATION, AND BEHAVIORAL STUDIES BRANCH UPDATES

Communicating the New 12-Dose Latent TB Infection Treatment Regimen

DTBE's Communications, Education, and Behavioral Studies Branch (CEBSB) developed and updated a variety of communication and education materials in preparation for the release of the 12-dose treatment regimen guidelines for latent TB infection in the Dec. 9, 2011, *Morbidity and Mortality Weekly Report (MMWR).* [1]

CEBSB provided TB controllers and other partners with key messages to assist them in communicating the new guidelines and developing their own talking points. Additionally, CEBSB developed several communication products and updated Web pages to provide health care professionals and the general public with information about the new regimen. These materials are available on the DTBE web site.

Specific highlights included two matte articles targeting the general public and health care professionals. Matte articles are ready-to-print articles that can be used in any publication or customized with additional information for publication.

CDC Issues Shorter Treatment Regimen for Latent TB Infection-Matte Article (www.cdc.gov/tb/publications/matte_articles/12Dose_HCP.pdf)

New Regimen Makes Treating TB Infection Easier-Matte Article (www.cdc.gov/tb/publications/matte_articles/12Dose_GeneralPublic.pdf)

DTBE's Director, Dr. Kenneth Castro, also recorded a video podcast for health care professionals related to the guidelines. This video is available in English and Spanish.

New Treatment Regimen for Latent Tuberculosis Infection-Video Podcast

- English version (www.cdc.gov/tb/topic/treatment/12dose_video.htm)
- Spanish version (www.cdc.gov/tb/topic/treatment/12dose_video_es.htm)

In the days following the release of the guidelines, CEBSB staff worked with social media experts to develop "tweets" for Twitter and messages for Facebook. The CDC.gov homepage also prominently displayed a feature about the 12-dose regimen. This feature article is available in English and Spanish.

New, Simpler Way to Treat Latent TB Infection–CDC Web Feature (www.cdc.gov/Features/TuberculosisTreatment/)

Spanish Version - (Español) (www.cdc.gov/spanish/especialesCDC/TratamientoTB/)

Additionally, multiple Web pages were updated to include information about the 12-dose treatment regimen.

Treatment (www.cdc.gov/tb/topic/treatment/default.htm)
Treatment for Latent TB Infection (www.cdc.gov/tb/topic/treatment/ltbi.htm)
Treatment Options for Latent Tuberculosis Infection (www.cdc.gov/tb/publications/factsheets/treatment/LTBItreatmentoptions.htm)
Targeted Tuberculosis (TB) Testing and Treatment of Latent TB Infection-Slide set

www.cdc.gov/tb/publications/slidesets/LTBI/default.htm

CEBSB will continue to update and develop new materials related to the 12-dose regimen in the coming months.

Reference
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—Reported by Nicole Richardson-Smith, MA
Div of TB Elimination

TB 101 for Health Care Workers

Background
TB 101 for Health Care Workers is a web-based course designed to educate health care workers about basic concepts related to TB prevention and control in the United States. *TB 101* was developed as a collaborative effort between CDC's Division of Tuberculosis Elimination (DTBE) and the four CDC-funded TB Regional Training and Medical Consultation Centers (RTMCCs): the New Jersey Medical School Global TB Institute, the Southeastern National TB Center, the Heartland National TB Center, and the Curry International TB Center. The need for an online basic TB course for persons new to the field of TB and persons working in related health fields (e.g., HIV/AIDS and STD programs, correctional healthcare) was identified through a review of both formal and informal TB training and education needs assessments conducted by CDC and the RTMCCs. A multi-phased, systematic health education process was utilized for the development of this course.

Target Audience
The target audience for the course includes newly hired TB program staff, HIV/AIDS and STD staff, and health care workers in areas related to TB. Due to its introductory-level content, physicians *are not* the target audience for this course.

Course Content
The course consists of six lessons:

1. Introduction
2. TB Transmission and the Development of TB Disease
3. Testing for TB Infection
4. Diagnosis of TB Disease
5. Treatment of Latent TB Infection
6. Treatment of TB Disease

The course also includes interactive case studies and study questions throughout each lesson to reinforce key concepts.

TB 101 takes approximately 1 hour to complete.

Participant Feedback on the Course
As of March 1, 2012, approximately 1,300 participants have completed the course since its release on January 5, 2012. Of these participants, 977 completed the course for continuing education (CE) units. Participant feedback from the CE course evaluation has been overwhelmingly positive.

Select Course Evaluation Results

Evaluation Question	**% Answer**
The content and learning materials addressed a need or a gap in my knowledge or skills.	**92%** Strongly Agree/Agree
Delivery method used helped me learn the content.	**96%** Strongly Agree/Agree
If given an opportunity, I can apply the knowledge gained as a result of this activity.	**98%** Strongly Agree/Agree

Summary of Comments from Participants
Overall, many participants found the course content to be clear, concise, and easy to understand. Below are a few select comments from course participants:

- *"Excellent format and information. I plan to assign this activity to my staff."*
- *"Appropriate and easy to learn from this technique."*
- *"The content and learning material was very good for someone new to TB and was very current for someone with TB experience."*
- *"Excellent introduction to TB."*
- *"I felt the content was a fabulous refresher for me. Highlighted on important things."*
- *"Case studies were excellent."*

Accessing the Course and Continuing Education
To access the *TB 101*, please visit the CDC website: www.cdc.gov/tb/webcourses/tb101.

Continuing education (CE) units for this course are offered free of charge for various professions:

- **Continuing education units (CEUs):** CDC has been approved as an Authorized Provider by the International Association for Continuing Education and Training (IACET), 1760 Old Meadow Road, Suite 500, McLean, VA 22102. The CDC is authorized by IACET to offer 0.1 ANSI/IACET CEUs for this program.

- **Continuing nursing education (CNEs):** CDC is accredited as a provider of Continuing Nursing Education by the American Nurses Credentialing Center's Commission on Accreditation. This activity provides 1.1 contact hours.

- **Continuing education contact hours (CECHs):** Sponsored by CDC, a designated provider of CE contact hours (CECHs) in health education by the National Commission for Health Education Credentialing, Inc. This program is designed for Certified Health Education Specialists (CHES) to receive up to 1.0 Category I CECHs in health education. CDC provider number GA0082.

More information about the CE units is available at: www.cdc.gov/tb/education/CE/tb101.htm.

—Submitted by Sarah Segerlind, MPH
Division of TB Elimination

INTERNATIONAL RESEARCH AND PROGRAMS BRANCH UPDATES

The Preserving Effective TB Treatment Study

Antibacterial drugs are a two-edged sword. While they destroy pathogenic bacteria, they also select for drug-resistant bacteria against which those drugs are ineffective. In public health, one of the gravest examples is the worldwide emergence of multidrug-resistant (MDR) and extensively drug-resistant (XDR) tuberculosis (TB). Global surveillance has revealed drug-resistant TB to be widespread and a threat to TB control in many countries. Treating MDR TB is imperative to prevent further spread; however, the high cost of second-line drugs (SLDs) severely limits their use. On the other hand, increasing access to costly SLDs has the potential to hasten the development of resistance to these same drugs. To address this issue, in 2000 the World Health Organization (WHO) and the Stop TB Partnership formed the Green Light Committee (GLC), a subgroup of the International Working Group on MDR TB. By carefully evaluating and assisting proposed MDR TB programs to ensure they would use the second-line drugs optimally, the GLC aims to increase access to these TB drugs while at the same time preventing the emergence of resistance.

The Preserving Effective TB Treatment Study (PETTS) is a prospective cohort study that is being conducted to evaluate the extent to which

the GLC mechanism prevents acquired resistance to second-line drugs. It is the largest prospective study of MDR TB ever carried out. The study was designed to compare the frequency and consequences of acquired resistance to second-line drugs in MDR TB patients between projects approved by Green Light Committee and other MDR TB treatment programs (non-GLC). PETTS was conducted in 9 countries (Peru, Russia, Latvia, Estonia, South Africa, Thailand, Philippines, South Korea, and Taiwan) from 2005 to 2010. The amplification of drug resistance was determined by examining the drug-susceptibility testing (DST) results and genotypes of each patient's last positive culture compared with the same patient's pretreatment isolate. Enrollment of patients in PETTS ended in December 2008, and follow-up ended in June 2010. Patients' isolates of *M. tuberculosis* were shipped to CDC, where the laboratory carried out DST for all baseline and final isolates. Genotyping and data analysis are ongoing. The first round of DNA fingerprinting is being completed in March 2012.

Preliminary results indicate that baseline prevalence of drug resistance was similar in GLC-approved and non-GLC projects except for the GLC site in the Philippines, which had a low prevalence of baseline drug resistance. However, acquired resistance to fluoroquinolones and second-line injectable drugs was lower in the GLC sites among the first 550 patients with testing completed. These preliminary results need to be extended with the rest of the patients and confirmed with genotyping. Finally, cure rates were higher, while mortality and treatment failure were lower, in GLC-approved projects compared with non-GLC projects; mortality remained lower in GLC projects after exclusion of HIV-infected patients, the majority of those being from South Africa, a non-GLC site.

—Reported by Peter Cegielski, MD, MPH, Ekaterina Kurbatova, MD, MPH, PhD, Tracy Dalton, PhD, and Julia Ershova, PhD
Div of TB Elimination

Tuberculosis Genetic Lineage and Clinical Site of Disease

Dr. Robert Koch's discovery of the tubercle bacillus over 100 years ago opened the door to laboratory investigation of the bacterium that causes TB. Despite this long history of investigation, an understanding of the genetics of the bacterium that causes most TB in humans, *Mycobacterium tuberculosis*, largely remained elusive until recently. Over the past several years, genetic features of *M. tuberculosis* isolated from patients in many different places in the world have been compared. This work has resulted in the surprising finding that there are four principal genetic sub-groups of *M. tuberculosis*, and that these sub-groups are primarily found in different regions of the globe.[1] These four principal sub-groups, or lineages, of *M. tuberculosis* are each named for the region of the world in which they predominate: Euro-American, Indo-Oceanic, East African Indian, and East Asian.

Individual strains of *M. tuberculosis* bacteria vary genetically. Variation between individual bacterial strains allows genotyping such as is performed by the National Tuberculosis Genotyping Service in the United States.[2,3] It is this variation between strains which makes it possible to determine whether cases of TB in a local jurisdiction, for example, are likely to be part of the same chain of transmission. However, despite this variation between strains of *M. tuberculosis,* strains isolated from individual patients can be categorized as belonging to one of the four primary lineages according to genotyping information that is characteristic for each of the four lineages.

The finding that there are four principal genetic subgroups of *M. tuberculosis* raises the question: is the clinical disease caused by these sub-groups different? This question is important, because clinical differences could affect control and treatment strategies, including development

of novel approaches to therapy and TB vaccines.[1]

The January 15, 2012, issue of Clinical Infectious Diseases contains an article describing an analysis aimed at understanding whether cases of TB caused by the four principal lineages of *M. tuberculosis* differ by clinical site of disease.[4] Although TB is primarily a disease of the lungs, virtually any organ system can be involved; however, factors that determine where disease occurs in the body are not well understood. Using data from the National Tuberculosis Genotyping Service linked to National Tuberculosis Surveillance System data, the authors analyzed 32,000 cases of TB reported during 2004–2008. Because of the diversity of patients with TB in the United States, with more than half born in other countries, these data provide a rich source of information on diverse strains from all four of the principal lineages. This study found that compared with the other lineages (East African Indian, Indo-Oceanic, and Euro-American), the East Asian lineage of *M. tuberculosis* (also known as the Beijing family) was associated with pulmonary disease more than with extrapulmonary disease.

This study contributes to a growing body of literature suggesting that there are differences in associated clinical disease between lineages.[5,6] Recently, the East Asian lineage has elicited particular interest as some investigators have suggested it is spreading globally.[7] Because pulmonary TB is the infectious form of the disease, the finding that patients infected with this lineage more commonly develop pulmonary disease would be consistent with increased transmissibility of this lineage. This area of study, increasing our understanding of TB biology, is needed to improve diagnostic tests and prevention and treatment strategies, including drugs and vaccines.[8]

—Reported by Eleanor Click, MD
Div of TB Elimination

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LABORATORY BRANCH UPDATES

Molecular Detection of Drug Resistance Clinical Service

Rapid and accurate identification of drug-resistant TB is essential for control and prevention of TB. Science and technology have merged to produce new diagnostic testing options for the detection of drug-resistant TB; however, these molecular assays are not currently widely available. Therefore, DTBE's Laboratory Branch consolidated available knowledge, conducted translational research and development to assemble a molecular testing

platform, and implemented a clinical service that provides rapid information about drug resistance to clinicians.

Research and development included a comprehensive survey of nine genetic loci known to harbor mutations associated with resistance to both first-line and second-line anti-tuberculosis drugs in over 300 isolates of *Mycobacterium tuberculosis*. The resultant genotypic data set was compared with culture-based drug-susceptibility data to determine accuracy for each locus. These values served as the analytic basis for the molecular detection of drug resistance (MDDR) clinical service. Since September 2009, the Laboratory Branch has offered the MDDR service nationally to patients and their providers. The service detects mutations associated with resistance to eight first-line and second-line TB drugs; average turnaround time is 2 days, compared to the turnaround time of 28–35 days for culture-based methods. It provides rapid detection of drug resistance or confirmation of known drug resistance and provides information that may be used by clinicians to guide therapy decisions. The service has been well received by the public health community and has been used by 47 states and territories. Currently, the Laboratory Branch is validating a new method for detecting mutations associated with rifampin and isoniazid resistance in patient specimens known to contain *M. tuberculosis* as determined by amplification-based assays. This addition to the MDDR service is scheduled to begin in early 2012.

In addition to affecting patient management decisions, the results provided by the MDDR clinical service also affect those related to infection control and public health interventions. Rapid confirmation of drug-resistant TB and guidance on selection of an effective drug regimen will reduce delay in the adequate treatment of TB and could translate into decreased transmission of TB.

Complete information about the service can be found at
http://www.cdc.gov/tb/topic/Laboratory/guide.htm

—Reported by Bonnie Plikaytis
Div of TB Elimination

Review of Southeastern Mycobacteria Meeting

The fourth bi-annual Southeastern Mycobacteria Meeting took place January 14, 2012, at Emory University's Claudia Nance Rollins Building. Attendees came from academia, government, and industry, representing Emory University, University of Georgia, University of North Carolina at Chapel Hill, Duke University, Research Triangle Institute, University of Louisiana-Lafayette, Health Sciences Center of Louisiana State University, Southern University at New Orleans, University of Alabama at Birmingham (UAB), Tulane National Primate Research Center, Tulane University, University of Florida, and CDC. Post-doctoral fellows and graduate students were especially encouraged to present their work in posters and oral presentations.

The day's agenda included a series of short talks presenting ongoing research projects and two poster sessions. In one talk, Ruth Napier, a graduate student at Emory University, presented her work demonstrating utility of an ABL-family tyrosine kinase inhibitor (imatinib) in reducing *M. tuberculosis* entry and survival within macrophages. Frank Wolschendorf from UAB described research using *M. tuberculosis* sensitivity to copper as a possible new therapeutic. His most recent experiments included a high throughput screen to identify compounds that could affect copper poisoning of *M. tuberculosis.* Graduate student Meghan Feltcher from UNC described her recent attempts to decipher the *M. tuberculosis* SecA2 protein translocation system. She demonstrated that unlike proteins exported through the traditional Sec system, those exported via SecA2 do not

contain a signal sequence and are targeted to the SecA2 pathway by the mature protein sequence. She also showed that although the two SecA2 substrates thus far identified are lipoproteins, lipid modification is not a requisite for SecA2 export.

The keynote address, given by Eric Rubin, MD, PhD, of Harvard University, was titled, "Protein synthesis and degradation in mycobacteria: lost in mistranslation." Dr. Rubin described a new, cutting-edge technique that will enable the role(s) of individual mycobacterial proteins to be explored via targeted proteolysis. He also presented data on protein mistranslation in mycobacteria and its possible consequences, including implications for drug resistance.

Laboratory Branch Chief Michael Iademarco, MD, MPH, gave a presentation describing the role of CDC's National Laboratory in TB elimination. Members of the Laboratory Branch Applied Research Team (Seidu Malik, Subhi Nandakumar, Suraj Sable, and Melisa Willby) presented posters detailing current research projects.

This excellent regional meeting brought together a diverse group of individuals conducting research on a wide variety of topics in mycobacteria to foster information exchange and collaborative opportunities.

—Submitted by Melisa Willby, PhD
Applied Research Team, Laboratory Branch, DTBE

SURVEILLANCE, EPIDEMIOLOGY, AND OUTBREAK INVESTIGATIONS BRANCH UPDATE

First Semi-annual Tuberculosis Epidemiologic Studies Consortium II Meeting

On December 8–9, 2011, the first semi-annual meeting of the newly constituted Tuberculosis Epidemiologic Studies Consortium (TBESC) took place in Atlanta at the Crowne Plaza Ravinia. This was the first opportunity for the newly selected TBESC sites and CDC staff to be introduced and to get down to work! The following sites were selected to be part of the new TBESC and were present in Atlanta:

- California Department of Public Health
- Denver Health and Hospitals Authority
- Duke University
- Emory University
- Hawaii Department of Health
- Maricopa County Department of Public Health
- Maryland Department of Public Health
- Public Health Seattle-King County
- University of Florida Board of Trustees
- University of North Texas Health Science Center

The goals of the meeting were for Consortium members and CDC staff to discuss the Task Order 1 (TO 1) study protocol, the new structure of the Consortium, and the data collection instruments. The meeting kicked off with a warm welcome to all sites from Denise Garrett, MD, CDC project officer for TBESC. She also outlined the structure for the 2-day meeting, which focused more on round-table discussions than prior TBESC meetings. Dr. Garrett encouraged all meeting participants to actively engage in the discussions.

Three main areas of the study protocol were presented by Tom Navin, MD, Chief of the Surveillance, Epidemiology, and Outbreak Investigations Branch. After outlining each topic, he invited feedback and advice from everyone present. In addition to the discussions surrounding the protocol, Dolly Katz, PhD, reviewed the study objectives with the group. The main objectives are to evaluate and compare the performance of tuberculin skin tests (TSTs) and interferon gamma release assays (IGRAs) in

1) diagnosing LTBI, and 2) predicting progression from LTBI to TB disease, overall and among important subgroups of patients. Dr. Katz also spoke to the Consortium about the study's expected sample size and answered questions regarding these calculations.

An additional component of TO 1 is to compare the costs, cost differences, and cost-effectiveness of IGRAs and TST. Suzanne Beavers, MD, led this discussion and placed emphasis on how the Consortium plans to collect cost data and the importance of translating these findings to the program level.

The second day of the meeting was led by Meredith Howley, MS, and Melissa Pagaoa, MPH. They presented the data collection instruments and sought feedback on how best to develop the forms in order to answer the objectives outlined on the first day. Julio Lopez and Arnette Mayhew from CDC's Procurements and Grants Office addressed the Consortium and answered contractual and invoicing questions.

Overall, the meeting was a great success! The teamwork and camaraderie expressed by CDC staff and Consortium sites resulted in productive discussions that were fruitful and helped further define the study objectives and procedures. We look forward to enjoying a very productive collaboration with all TBESC members and seeing all of our new colleagues again in June 2012 for the second semi-annual meeting of TBESC II.

—Reported by Meredith Howley, MS, and Melissa Pagaoa, MPH
Div of TB Elimination

NEW CDC PUBLICATIONS

Alexy ER, Podewils LJ, Mitnick CD, Becerra MC, Laserson KF, Bonilla C. Concordance of programmatic and laboratory-based multidrug-resistant tuberculosis treatment outcomes in Peru. The International Journal of Tuberculosis and Lung Disease 2012 March 1; 16 (3): 364-369.

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PERSONNEL NOTES

Sekai Chideya, MD, has returned to DTBE as a member of the Surveillance, Epidemiology, and Outbreak Investigations Branch. She has joined the TBESC team as a Medical Epidemiologist, returning to DTBE from the Global AIDS Program, where she had been working on implementation of a medical male circumcision program. Prior to that, Sekai was a Medical Director at the NYC Department of Health and Mental Hygiene. During 2005–2007, Sekai served as an EIS Officer with DTBE's International Research and Programs Branch.

Panayotta Delinois, MS, has joined the Reference Laboratory Team of the Laboratory Branch as an ORISE Fellow. In this capacity she will assist with the expanding Molecular Detection of Drug Resistance service. She earned her MS degree in Microbiology and Immunology from New York Medical College in 2009. Previously, she worked as the TB Program Specialist for the Association of Public Health Laboratories (APHL), where she primarily helped to provide logistical support for the 7th National Conference on Laboratory Aspects of Tuberculosis.

Sonya Garnett, Program Specialist in the Office of the Director, is the worthy recipient of the DTBE Director's Recognition Award for the first quarter of 2012. Sonya was selected to receive this honor because of her impeccable professionalism, dedication, and work ethic; her outstanding organizational skills; and her exceptional performance, including her willingness to work after hours to go the "extra mile" to anticipate and meet tight and demanding deadlines. In all her roles and interactions, Sonya serves as a role model of excellence. This combination of skills, attributes, and commitment makes her deserving of the Director's Recognition Award. Congratulations to Sonya for this well-deserved honor.

Paige Gupton, MS, has joined the Laboratory Branch Reference Laboratory Team as an ORISE Fellow. In this capacity she will assist with the expansion of the Molecular Detection of Drug Resistance clinical service. Paige moved to Atlanta from Washington, D.C., where she earned a MS degree in Public Health Microbiology at George Washington University (GW), and worked in a lab as a Research Assistant. Her primary area of research at GW was HIV diagnostics in limited resource settings. Prior to attending GW, Paige worked for NCEZID in the Division of Parasitic Diseases as a Laboratory Technician in the Serology Diagnostics Laboratory.

Alexandra (Alex) Mercante, PhD, has joined the Applied Research Team of the Laboratory Branch as an Associate Service Fellow. In this capacity, she will be investigating both transcriptional regulation and protein modification to help gain new insights concerning antibiotic resistance mechanisms in Mycobacterium tuberculosis. Alexandra received her BS degree in Microbiology from Louisiana State University in 2000 and subsequently worked as a research technician in both private industry and academic institution laboratory settings. Recently, she earned a PhD in Microbiology and Molecular Genetics from Emory University. Under the guidance of her graduate mentor, Dr. William Shafer, she examined how host factors modulate the molecular mechanisms that regulate antibiotic resistance determinants in Neisseria gonorrhoeae.

Nwabunie Nwana is a first-year student at the Rollins School of Public Health, Emory University. In 2009, she received her bachelor's degree in biochemistry, chemistry, and environmental studies from Wartburg College, Waverly, Iowa. As an undergraduate, she interned with the TB control unit of the World Health Organization (WHO) in Nigeria. Since that time, she has developed a strong interest in the prevention and control of infectious diseases. She is very excited about contributing to the control and eventual eradication of TB, and looks forward to working with FSEB staff.

Chaturia Rouse has joined DTBE in the Surveillance, Epidemiology, and Outbreak Investigations Branch. She is working on the TBESC team as a public health analyst contractor from Northrop Grumman. Previously Chaturia worked at Boston Medical Center, where she carried out data coding, cleaning, and analysis for the Massachusetts Screening, Brief Intervention, Referral and Treatment (MASBIRT) Program.

Erika Sigman, MS, of the Laboratory Branch (LB) recently transitioned from her position as an ORISE Fellow to an associate Service Fellow. She joined the LB as an ORISE Fellow after graduating from Emory University in 2008. In that position, she worked in the Genotyping Activity, where she performed molecular screening to help determine the relationship of human genetic factors to TB pathogenesis. After receiving her MS degree in biology from Georgia Institute of Technology in 2011, she was offered and accepted an associate Service Fellow position with the LB. She will help carry out various genotyping activities within the Applied Research Team of the Laboratory Branch.

Caroline Tai has joined the Laboratory Capacity Team of the Laboratory Branch as a Research Assistant as part of the Rollins Practical Experience Program. She will support the team in analyzing data from operational studies to build and maintain laboratory capacity for tuberculosis. Caroline gained laboratory experience from working in the biotech industry in San Diego, California, where she also earned her BS degree in microbiology at the University of California, San Diego. She is currently pursuing an MPH degree in epidemiology at the Rollins School of Public Health of Emory University.

Taiwo Talabi, MD, is a second-year student at the Rollins School of Public Health, Emory

University. He graduated in November 2006 with a medical degree from the College of Medicine of the University of Lagos, Nigeria, and has been a practicing physician since graduation. He has been involved in active management and treatment of many infectious diseases, including TB, HIV, and hepatitis. During his time with the Medical Service Team of FSEB, he hopes that he will be able to learn much more and contribute significantly to the success of the team.

Liping Zhu has joined DTBE as a member of the Surveillance, Epidemiology, and Outbreak Investigations Branch. Liping joined the TBESC team as a scientist data analyst as a Northrop Grumman contractor 4 months ago. Previously, she worked at Emory as a research specialist for about 10 years. She has many years' experience in data management and analysis.

In Memoriam

ShaJuan Colbert, PhD, MPH, passed away unexpectedly on February 2, 2012. She had worked in the NCHHSTP Office of Health Equity (OHE) from summer 2010 to April 2011. During her time in OHE, ShaJuan made a number of significant contributions to promoting health equity within NCHHSTP. She led OHE's efforts on the Social Determinants of Health (SDH) Guidance for Surveillance Systems, the 2010 and 2011 Health Equity Symposia planning, and SDH and health equity awareness slides for NCHHSTP colleagues. In addition, she drafted key documents such as Frequently Asked Questions and a Glossary of Terms for SDH.

Prior to her assignment in OHE, she worked in the NCHHSTP Division of Tuberculosis Elimination (DTBE). ShaJuan joined DTBE's Communications, Education, and Behavioral Studies Branch in May 2009 as a Behavioral Scientist. Her work in DTBE included planning, developing, implementing, and evaluating behavioral studies, projects, and research. ShaJuan contributed to the Advisory Council for the Elimination of Tuberculosis (ACET) African American Workgroup's Strategic Plan, facilitating several group discussions with Workgroup members about goals and objectives of the strategic plan. She participated materially in conference calls, protocol reviews, and other tasks related to a HRSA/Minority AIDS Initiative Houseball LTBI Treatment Project with another DTBE branch. She also participated in TB Epidemiologic Studies Consortium Task Order 23, which involved providing technical assistance to the Project Officer, reviewing and revising an interview guide, and participating in interviewer training in New Jersey. In summer 2010, she left DTBE for a detail in OHE.

ShaJuan received an MPH degree from Emory University (2001) in Behavioral Sciences and Health Education. She received a PhD degree in Public Health (December 2008) from Michigan State University, focusing on Health Behavior and Health Education. From 2001 to 2005, she worked with the Michigan Department of Community Health's HIV/AIDS surveillance unit, where she served as the Project Study Coordinator on CDC-funded projects that included research with HIV-infected persons or persons in HIV behavioral risk groups (including injection drug use). She also served as the HIV Behavioral Surveillance Coordinator for the Michigan Department of Community Health's HIV/AIDS Epidemiology Unit. While working as a doctoral student at the University of Michigan's School of Public Health, she was a member of a group of researchers funded to focus on the behavioral, genetic, and biological markers of cardiovascular disease and mental health disorders, which also included exploring pathways of other prominent health disparities. After completing her doctorate, she had worked as an independent public health consultant before coming to CDC.

ShaJuan was a friend to many at CDC. Her sincere dedication to and enthusiasm for promoting health and health equity will be greatly missed. She is survived by her husband, Andre Johnson; daughter, Ayanna Johnson; mother,

Laverne; father, Vincent; sisters Clarissa and Sonja; and other family members. An educational fund in her name has been arranged for her daughter and adopted nephews. At the request of the family, donations can be made to the Dr. ShaJuan Colbert Johnson Foundation. Checks can be made to her mother, Laverne Colbert, with the notation of "Dr. ShaJuan Colbert Johnson Foundation" in the memo portion of the check and mailed to 6258 Eastbrooke, West Bloomfield MI 48322.

CALENDAR OF EVENTS

March 22, 2012
CDC World TB Day Observance
Atlanta, GA, CDC Roybal campus
CDC/DTBE

March 24, 2012
CDC 6th Annual TB Awareness Walk
Atlanta, GA, Grant Park
CDC/DTBE

March 29–30, 2012
American Epidemiological Society Annual Meeting
Berkeley, CA
American Epidemiological Society

April 11–14, 2012
The Denver TB Course
Denver, Colorado
National Jewish Health

April 16–20, 2012
EIS Conference
Atlanta, GA
Centers for Disease Control & Prevention (CDC)

May 13–18, 2012
2012 Keystone Symposia
Kampala, Uganda
Keystone Symposia

May 14–15, 2012
46th Annual CTCA Educational Conference
Los Angeles, CA
CTCA

May 18–23, 2012
ATS International Conference
San Francisco, CA
American Thoracic Society (ATS)

May 20–23, 2012
APHL Annual Meeting
Seattle WA
APHL

June 12–14, 2012
2012 National TB Conference
Atlanta, GA
Sherry Brown