U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
CENTERS FOR DISEASE CONTROL AND PREVENTION
NATIONAL CENTER FOR HIV/AIDS, VIRAL HEPATITIS,
STD AND TB PREVENTION
DIVISION OF TUBERCULOSIS ELIMINATION

Meeting of the Advisory Council for the Elimination of Tuberculosis
August 24, 2016

Record of the Proceedings

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US DEPARTMENT OF HEALTH AND HUMAN SERVICES
CENTERS FOR DISEASE CONTROL AND PREVENTION (CDC)
National Center for HIV/AIDS, Viral Hepatitis, STD and TB Prevention (NCHHSTP)
Division of Tuberculosis Elimination (DTBE)

Advisory Council for the Elimination of Tuberculosis
August 24, 2016
Atlanta, Georgia

Minutes of the Meeting

The US Department of Health and Human Services (HHS) and the Centers for Disease Control and Prevention (CDC) National Center for HIV/AIDS, Viral Hepatitis, STD and TB Prevention (NCHHSTP) Division of Tuberculosis Elimination (DTBE) convened a teleconference meeting of the Advisory Council for the Elimination of Tuberculosis (ACET) on August 24, 2016.

ACET is chartered to provide advice to the Secretary of HHS and the Director of CDC regarding the elimination of tuberculosis (TB); make recommendations regarding policies, strategy, objectives, and priorities; address the development and application of new technologies; provide guidance on CDC's TB Prevention Research Portfolio and program priorities; and review the extent to which progress has been made toward eliminating TB.

Information for the public to attend the ACET meeting in person or via teleconference was published in the *Federal Register* in accordance with Federal Advisory Committee Act (FACA) regulations. All sessions of the meeting were open to the public.

Call to Order and Welcome / Roll Call

Barbara Cole, RN, MSN, PHN
TB Controller
Riverside County (California) Department of Public Health
ACET Chair

Hazel Dean, ScD, MPH
Deputy Director, National Center for HIV/AIDS, Viral Hepatitis, STD and TB Prevention
Centers for Disease Control and Prevention
ACET Designated Federal Officer (DFO)

Ms. Barbara Cole called the ACET teleconference meeting to order at 10:01 a.m. on Wednesday, August 24, 2016. She reviewed the day's agenda.

Dr. Hazel Dean reminded the meeting attendees that ACET meetings are open to the public. All comments made during the proceedings are a matter of public record. Members should be mindful of potential conflicts of interest identified by the CDC Committee Management Office (CMO) and recuse themselves from voting or participating in those discussions.

Dr. Dean conducted a roll call of ACET voting members, *ex officio* members, and liaison representatives. There was a quorum of ACET voting members and *ex officio* members. A complete list of meeting attendees is appended to this document.

CONFLICT OF INTEREST DISCLOSURES	
ACET Voting Member (Institution/Organization)	**Potential Conflict of Interest**
Ana M. Alvarez, MD, FAAP (University of Florida College of Medicine)	No conflicts disclosed
Lisa Y. Armitige, MD, PhD (Heartland National Tuberculosis Center)	No conflicts disclosed
Jennifer Cochran, MPH (Massachusetts Department of Public Health)	No conflicts disclosed
Barbara Cole, RN, MSN, PHN (Riverside Co. Department of Public Health)	No conflicts disclosed
C. Robert Horsburgh, Jr, MD, MUS (Boston University School of Public Health)	No conflicts disclosed
Eric R. Houpt, MD (University of Virginia)	No conflicts disclosed
Michael Lauzardo, MD, MSc (University of Florida)	No conflicts disclosed
Jeffrey R. Starke, MD (Baylor College of Medicine)	No conflicts disclosed
James Sunstrum, MD (Wayne County, Michigan, TB Clinic)	No conflicts disclosed
David M. Warshauer, Ph.D. (Wisconsin State Laboratory of Hygiene)	Laboratory receives funding as part of the TB Cooperative Agreement

Dr. Dean shared announcements regarding ACET membership:

- ❑ Ms. Marshayla Lee is sitting in for Dr. Rupali Doshi, *ex officio* member from the Health Resources and Services Administration (HRSA).
- ❑ Dr. Peter Davidson, TB Control Program Manager in the Communicable Disease Division at the Michigan Department of Health and Human Services (MDHHS), replaces Dr. Robert Belknap as the ACET liaison representative from the National Tuberculosis Controllers Association (NTCA).

- Dr. Robert E. Morris, Professor Emeritus from the University of California, Los Angeles (UCLA) Department of Pediatrics, is the National Commission on Correctional Health Care (NCCHC) ACET liaison representative, replacing Sheriff Tara Wildes, who retired on March 25, 2016.
- On July 25, 2016, Dr. Jay Butler was appointed as a Special Government Employee (SGE) to the State, Tribal, Local and Territorial (STLT) Subcommittee of the CDC Advisory Committee to the Director (ACD). A letter was sent to the Association of State and Territorial Health Officials (ASTHO) to identify a replacement representative for ACET.

NCHHSTP Director's Update

Jonathan Mermin, MD, MPH
Director, National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention
Centers for Disease Control and Prevention

Dr. Jonathan Mermin greeted the group, thanked them for their participation, and presented the following updates:

Zika Virus
Currently, the largest activity at CDC is related to the Zika virus. The situation with Zika is evolving rapidly. Transmission of Zika virus through mosquitoes is occurring in many countries across the globe, including the United States (US) and the Bahamas. CDC is spending a great deal of time trying to cope with Zika, without the additional resources that are usually available for a response of this magnitude. The response includes a number of personnel, including personnel from DTBE, participating in field work as well as in the Emergency Operations Center (EOC). Additional funds have been requested by the President of the US. Without these additional funds, the agency is strained.

Zika cases have been reported in the US and its territories, including local transmission in Florida, Puerto Rico, and the US Virgin Islands. It is likely that more cases transmitted by mosquitoes will be detected in other areas as diagnostics improve and as the season for the mosquitoes that transmit Zika reaches its peak in mid-September.

CDC has activated a Level 1 EOC to respond to Zika. Multiple centers at CDC are involved, including some that previously may not have been directly involved in outbreak response. CDC is providing on-the-ground support in Zika-affected areas, globally and in the US. CDC is engaged in education activities and communications regarding Zika, such as travel notices. Other efforts include working with industry and with CDC laboratories on improved diagnostic tests. Zika Prevention Kits have been created for affected US territories. CDC also is conducting studies on the sexual persistence of Zika virus. Some cases have been published of men who have the presence of Zika in their semen for over 180 days.

CDC 2015 Prevention Status Reports

The CDC Office of the Director (OD) produces the Prevention Status Reports, which highlight 10 health topics, primarily the "Winnable Battles." HIV is discussed in these reports, which include specific indicators, mostly at the policy level, for every state. Regarding HIV, the policies focus on reducing HIV infection or improving outcomes, such as reporting CD4 viral load or the proportion of people with HIV who are virally suppressed.

Proposed FY 2017 Budget

The NCHHSTP Fiscal Year (FY) 2017 budget request was for $1.13 billion, which essentially represents level funding from the past four years. The request includes a $5 million increase for viral hepatitis. The Senate mark shows $5 million decreases for TB and sexually transmitted disease (STD), and rejects the requested increase for viral hepatitis. The House mark does not show the decreases in the Senate mark, but it does not include the increase for viral hepatitis.

The public health infrastructure in the US has experienced a loss of over 50,000 jobs in the past eight years, as well as dramatic initial decreases in funding for CDC. DTBE is working hard to do more with a level budget in which every dollar is worth less than it used to be.

NCHHSTP Staff Updates

- ❑ Stephanie Zaza, Director of the Division of Adolescent and School Health (DASH), retired from the Commission Corps and CDC in July 2016. Potential replacements are being interviewed.
- ❑ Susan Robinson, NCHHSTP Associate Director for Health Communication Science, accepted an appointment at the Georgia Institute of Technology for one year.
- ❑ Wayne Duffus, NCHHSTP Associate Director for Health Equity, accepted a position in South Africa with the Center for Global Health (CGH).
- ❑ Sara Zeigler is the new NCHHSTP Associate Director for Planning and Policy, replacing Eva Margolis.
- ❑ Patricia Dietz is the new Associate Director for NCHHSTP's Program and Performance Improvement Office.

New Guidelines Recommend Coordinated Care for TB and HIV

The American Thoracic Society (ATS), CDC, and Infectious Diseases Society of America (IDSA) guidelines for drug-susceptible TB were published in August 2016 in *Clinical Infectious Diseases* (*CID*). The guidelines recommend coordinated treatment for TB and HIV, as well as comprehensive care for all TB patients.

TB Notes

TB Notes, the DTBE newsletter, is now available online. It features news about the division and in state and local TB programs:

TB Notes 1: March 30 2016
TB Notes 2: April 28, 2016
TB Notes 3: June 29, 2016

Revised Self-Study Modules on TB

Revised self-study modules on TB have been released. They are updated versions of previous modules that reflect TB guidelines and are designed to reach a range of audiences, including clinicians, nurses, physicians, and health educators who work with people with TB. The modules are a good model for sharing information. They are clear and up-to-date.

Antiretroviral Post-Exposure Prophylaxis Guidelines

NCHHSTP has released new guidelines on post-exposure prophylaxis for HIV infection. These guidelines expand on the 2005 recommendations for medical practitioners, primarily focusing on new medication. The center will host Webinars for health departments, healthcare providers, and community-based organizations (CBOs) regarding the guidelines.

Release of 2015 Youth Risk Behavior Survey (YRBS) Data

NCHHSTP released the biennial YRBS, which for the first time addressed risk factors and health outcomes among lesbian, gay, and bisexual high school students at a national level. The study found substantial differences in risk behavior and in injury. Lesbian, gay, and bisexual students were 2-3 times more likely to have been raped and to have experienced physical or sexual dating violence. Of these students, 30% reported having tried to commit suicide in the past 12 months. They also reported increased levels of bullying in school and online. This area is neglected, as most school health curricula do not focus on these issues related to lesbian, gay, and bisexual students, or on these students at all. NCHHSTP interpreted the YRBSS results with the National Center for Injury Prevention and Control (NCIPC) and is working with NCIPC to learn what more CDC can do as an agency to address these problems.

In general, sexual risk for high school students has remained stable over the last two decades. There has been a slight trend toward decreasing proportions of high school students who have ever had sexual intercourse. There have also been slight decreases in students' number of sexual partners, and the number of students who are sexually active has decreased slightly in recent years.

Viral Hepatitis Surveillance Report and New Technology

NCHHSTP has a new surveillance report for viral hepatitis, which shows that while hepatitis B is relatively stable nationally, there are increases in areas that also have evidence of increasing injection drug use and hepatitis C. In terms of acute cases, hepatitis C has doubled from 2010 to 2014. The surveillance system for hepatitis in the US has significant limitations. It is estimated that many times more acute cases of hepatitis B and C are occurring. NCHHSTP estimates that there are approximately 30,000 cases of acute hepatitis C in the US every year, even though approximately 2000 are reported. Acute cases are occurring mostly among young people who inject drugs and who live in rural and suburban areas, but new cases are also emerging in urban areas. Regarding prevalence, approximately 3.5 million people in the US have chronic hepatitis C. This issue remains a burden, as most of these people were infected a decade or more ago and the mortality associated with hepatitis C is increasing every year, with over 20,000 deaths in 2015, the most of any reportable infectious disease.

The Global Hepatitis Outbreak and Surveillance Technology (GHOST) tool was launched in May 2016. It enables health departments to submit genetic information so that they can more readily identify viral strains related to their outbreaks. It is, in some ways, similar to the TB molecular outbreak detection tool. GHOST also puts sequences in at the state or local levels, which are entered into a national dataset to determine whether other cases are present to

indicate a broader epidemic. CDC does sequencing for outbreaks, but GHOST enables and empowers health departments to determine rapidly whether there is an outbreak in their jurisdictions, or across states.

NCHHSTP published a *Morbidity and Mortality Weekly Report* (*MMWR*) that considered increases in rates of hepatitis C among women of childbearing age, including increases in infants who are infected with hepatitis C. Approximately 5% to 10% of infants born to mothers with hepatitis C become infected themselves. This issue is notable in areas with increasing injection drug use, such as Appalachia. This area represents a large science gap. If a pregnant woman is infected with hepatitis C, it is not clear whether she should be treated while she is pregnant, as some of the medications have not been evaluated for their teratogenic effects. It is not clear whether infants should receive prophylaxis at the time of birth, and it is not clear at what age infants should be treated. All of these questions are important and have been established for other infections, but not for hepatitis C.

Antibiotic Resistance Threatens Gonorrhea Treatment

There are increasing signs of decreasing susceptibility to the recommended treatment for gonorrhea. At this point, an increasing proportion of up to 2.5% of gonorrhea isolates are resistant to azithromycin. Recent cases in Hawaii have both azithromycin resistance and decreased susceptibility to ceftriaxone, the two medications that are recommended for dual treatment. The cases were treated successfully with the recommended dual regimen, but a case in the United Kingdom (UK) was not treated with the recommended doses, and no other medications were available. Either a new antibiotic is needed quickly, or resistance needs to be detected at the time of diagnosis, as with TB.

The 2016 STD Prevention Conference will be held in Atlanta, Georgia on September 20-23, 2016.

ACET discussed several points raised in Dr. Mermin's presentation.

Dr. Mermin was not able to portend whether, or when, federal funding to address Zika will be approved. He does not think that Zika will go away quickly. There is a strong movement in Congress recognizing that Zika is a serious issue. There have been partisan approaches to the problem, but there is general hope that resources will be devoted to Zika. If the government is on a Continuing Resolution (CR) for some time and the number of Zika cases continues to rise, the job will be more difficult. If the funds are received quickly, then the response must be quick. Zika may or may not reach massive, epidemic proportions this year. The approach will be long-term. If public health infrastructure is pulled into Zika, there may be effects on TB.

ACET discussed how, and whether, assets from state TB programs are being utilized for Zika response. Because TB programs have strong clinical aspects and often include physicians and nurses, TB program personnel are often pulled into outbreak responses because they are respected members of the public health team. This pattern has been observed at CDC. In Wisconsin, the TB control program is short-staffed, and there are no personnel to utilize for Zika-related activities. Zika activities are redirecting a great deal of resources away from other infection prevention issues at the Federal Bureau of Prisons (BOP). In Florida, some county programs are not performing TB-related activities because either direct staff or core staff are focusing on Zika. In New York City, several members of the TB staff have been moved to Zika-related activities.

ACET commented on the re-assigning of Ebola funding and whether it is filling the gap until a funding decision is made regarding Zika. Dr. Mermin said that CDC has shifted Ebola-related funding to Zika, and the United States Agency for International Development (USAID) has allocated its unspent Ebola funds to CDC. Many parts of CDC are developing funding announcements or protocols, anticipating when funds might be received, but no announcements can be made until resources are available.

ACET asked for clarification regarding hepatitis C and the proportion of infants born to women living with hepatitis C, which increased. The surveillance system is monitoring women with hepatitis C who are giving birth. There has been an increase in pregnant women with hepatitis C and an increase in the absolute number of infants born with hepatitis C. There is no evidence that the transmission rate from women to infants has changed.

DTBE Director's Update

Philip LoBue, MD
Director, Division of Tuberculosis Elimination
National Center for HIV/AIDS, STD, Viral Hepatitis and TB Prevention
Centers for Disease Control and Prevention

Dr. LoBue presented to ACET updates on several activities within DTBE:

FY 2017 Projected Budget
There are three proposed funding appropriations for FY 2017:

- ❑ President proposed: $142,256,000 (no change from FY 2016)
- ❑ House proposed: $142,256,000 (no change from FY 2016)
- ❑ Senate proposed: $137,256,000 ($5 million decrease from FY 2016)

The appropriations process is ongoing.

US Preventive Services Task Force (USPSTF) Recommendation for Latent Tuberculosis Infection (LTBI) Testing Status
The final USPSTF Recommendation for LTBI Testing has been approved. It is embargoed until publication in the *Journal of the American Medical Association* (*JAMA*) in early September 2016. DTBE has been coordinating with the Agency for Healthcare Research and Quality (AHRQ) on communications related to the recommendation.

Funding Formula Workgroup
The Funding Formula Workgroup focuses on how DTBE distributes funding to states and large counties and cities for cooperative agreements. The most recent iteration of the cooperative agreement, for FY 2015-2019, saw money distributed based on a formula that is case-based for prevention and control and human resource development, and workload-based for the laboratory component. The workgroup has been formed to consider the funding formula for the next iteration, FY 2020, and to make any recommendations regarding changes to the formula. The workgroup is chaired by Terry Chorba, DTBE, and Peter Davidson, President of NTCA and the NTCA liaison to ACET. The workgroup will begin by evaluating the current formula,

including a survey conducted by NTCA. The workgroup's goal is to draft recommendations for the 2020 formula by April of 2018.

Changes were made in the formula between 2005 and 2015, based on epidemiology and how the work is progressing. In 2005, 40% of the funding was based on incident cases. In 2015, 30% of the funding was based on incident cases. In 2005, 15% of the funding was based on racial and ethnic minorities and 15% was based on foreign-born. These two components were combined into one in 2015 with 30% of funding.

Dr. LoBue provided the following hypothetical example of funding:

- $50 million is available for the needs-based component
- Per the 2015 formula, 30% is distributed based on incident cases = $15 million
- A three-year rolling average is used for national incident case counts: 10,000 incident cases per year nationally = $1500 per case
- If State A has an average of 800 incident cases per year, it would receive $1.2 million for incident cases
- Calculations are repeated for each component
- There is a minimum, or floor, level of funding regardless of case counts for low-incidence states

LTBI Surveillance

LTBI surveillance is a work in progress. The surveillance team has drafted a Concept of Operations for the TB Latent Infection Surveillance System (TBLISS), which will be shared with partners. TBLISS incorporates three data sources:

- The clinic-based Surveillance for TB Elimination Management System (STEMS), which was developed through the Tuberculosis Epidemiologic Studies Consortium (TBESC), will communicate directly to TBLISS following state review and approval of the data to be submitted.
- States with existing LTBI databases can message electronically to the CDC system in a manner similar to TB case surveillance.
- An online data entry form will be developed for existing paper-based LTBI records.

STEMS is the result of a collaboration between the DTBE Surveillance Team and TBESC. It has been piloted in some of the TBESC-funded clinics, and there is interest in piloting it in non-TBESC sites. The NTCA LTBI Workgroup has been informed regarding progress of the surveillance. The next steps are to:

- Distribute the draft Concept of Operations for input from TB partners
- Begin the development of technical requirements for the new information system
- Begin pilot testing, projected by mid-2017

Drug Stockpile

Regarding the drug stockpile, DTBE received approximately $1.6 million in Antimicrobial Resistance (AR) Solutions funding, also known as Combating Antibiotic-Resistant Bacteria (CARB). An interagency agreement has been created with the US Department of Health and Human Services (HHS) Supply Service Center in Perry Point, Maryland for purchasing and management of the stockpile. Currently, the following drugs are being purchased:

- Isoniazid (INH)
- Rifampin (RIF)
- Rifapentine (RPT)
- Capreomycin (CPM)
- Amikacin, when available (there is an ongoing shortage of this drug due to a recall because of glass contamination)

Procedures are being developed in coordination with NTCA for requesting and releasing drugs in the stockpile in the event of a shortage.

ACET engaged in discussion regarding Dr. LoBue's presentation.

ACET discussed identifying new sources of federal prevention funds. A number of prevention funds are distributed to various efforts. With the implementation of the USPSTF findings, health departments will need to respond to the volume of suspects that will be identified through testing, as well as to outreach to high-risk individuals who are not in care. These activities, as well as LTBI reporting, are all new for state health departments. Dr. LoBue said that when there are opportunities to secure funds, DTBE will pursue them. So far, the opportunities have been limited. CDC provided funding for the pilot project for enhanced LTBI testing and treatment. Other funding sources have not been amenable, either because of their scale or because of the topic. For instance, CARB funding must be applied to drug resistance, and there are limitations associated with LTBI. The Advanced Molecular Detection (AMD) funding also has limitations. He was not aware of additional funding opportunities on the horizon. A new administration may bring new opportunities. DTBE does not have ready access to the large prevention funds at HHS, as many of the funds are earmarked for specific projects. Dr. Mermin said that California has set the standard for this work, as the state has taken the issue on seriously, engaging locally and statewide to address LTBI. This engagement is probably the fastest way for a jurisdiction to expand activities. The more the importance of TB can be raised, and the work is continued, the more others might recognize the opportunity to eliminate TB from the US. There are ways to leverage funding beyond distributing funds directly to agencies. The USPSTF recommendations are bringing momentum and allowing opportunities to engage with Health Management Organizations (HMOs) and different organizations that might be interested in this work, recognizing that the cost of testing may not be a barrier and integrating clinical decision tools into systems.

Dr. Mermin asked Dr. Jenny Flood to share her experience in California, which others might replicate. Dr. Flood said that in many ways, California is at the starting line in terms of investment in prevention. The state's efforts have focused on creating a road map, but they still face challenges, such as patients with large co-pays for the 3HP regimen. California does not have new resources to increase the capacity for the groups and health departments that need them. Her office receives calls from primary care doctors who need help interpreting test results,

finding places to conduct chest x-rays, and working with suspect cases. The road map was created as a collaborative stakeholder plan.

ACET commented that the drug stockpile seems like a good idea and asked approximately how many doses will be purchased. ACET also asked about a mechanism for drug expiration, such as releasing drugs to states prior to expiry, especially given that RIF and CPM are fairly expensive. Dr. LoBue said that the number of doses will not be known until the final pricing is known. DTBE is negotiating the best possible price. The price varies according to how the drugs are purchased, such as in a 10-pack versus in single doses. When the inventory is known based on price, DTBE will share the details. A number of approaches are available regarding drug expiration. Product will not be destroyed or lost due to expiration. DTBE will work with NTCA to create an equitable means for releasing drugs that are nearing expiration to TB programs. Shelf life extension is possible and requires working with the US Food and Drug Administration (FDA). When a drug nears expiration, it is re-evaluated and receives a new expiration date. Another approach is rotation of the medications so that they can be resold, but there is expense associated with this approach. It is likely that DTBE will employ a combination of approaches, depending upon cost.

Dr. Mermin recalled that the copay for 3HP is a barrier. He asked about the absolute cost for RIF in California and wondered about ways to increase large-scale access to the drug in order to reduce cost. Dr. Flood said that the copays per patient depend on the insurance, and some patients have a deductible. For Kaiser, the copay can be $50. The total price may be $250 to $300 per month or for three months, but depending on the patient, that price can be high. Some patients have marginal insurance with a large deductible, a large copay, and more emergent care. The drug is a significant out-of-pocket expense. Since there will be more sales in the US, it is worth approaching the company to determine whether prices could be reduced. For some drugs for pre-exposure prophylaxis (PrEP), for instance, copays are waived by the drug company. Dr. Mermin said that it could be an option to talk to the institutions themselves to secure no copay for a particular medication.

The liaison representative from Treatment Action Group (TAG) noted that the funding formula is based on active TB cases. LTBI cases and the work that programs do with them, such as case-finding, do not appear to be included in the formula. Some information is available related to LTBI and contact investigations, but because there is no national surveillance, data are not available to generate an accurate formula to incorporate those elements. However, there is proportionality. On average, the number of contact investigations conducted and the number of LTBI cases depends on the number of active TB cases. NCHHSTP is thinking about these issues as part of expanding the scope to include up to 13 million people with LTBI. If 86% of all active TB cases in the US come from reactivation, following cases of active TB will epidemiologically reflect LTBI. Because of limitations associated with the surveillance data, this approach is probably the most efficient and accurate.

ACET wondered whether ongoing research is examining LTBI and the best strategy for addressing how to find the people with LTBI who are the most likely to convert to active TB disease. There are hidden costs for programs associated with LTBI, such as the labor involved in the work. Dr. LoBue agreed and noted that the funding formula does not reflect the total cost of TB control, prevention, and management. The formula is designed to allocate the fixed amount of funding that is available, based on the likely proportional amount of work necessary for the number and complexity of TB cases. For instance, the formula takes into account drug-

resistant TB, patients who are foreign-born and their language and cultural issues, and other complicating factors.

There was discussion regarding why TB is not included on the CDC list of "Winnable Battles," and it was suggested that the time might be right to include TB on that list. Dr. Mermin believes that TB is a winnable battle. However, the selection progress for "Winnable Battles" involves burden of mortality. People with some infections, such as TB, are treated well enough so that they rarely die. Further, TB has fewer cases per year than other infections and diseases. NCHHSTP and DTBE are thinking about what is needed to be able to tackle elimination of TB and sharing that information to inspire others and so that it can be used. As a new administration comes into place, it will be important to highlight the importance of TB.

Ms. Suzanne Marks (DTBE) said that it would be helpful for states and localities to learn how many cases of LTBI are projected to occur, using current efforts as well as various intervention scenarios. The NCHHSTP Epidemiologic and Economic Modeling Group is in the process of doing this work. A group from Harvard University is examining the US overall, and a group from Emory University is examining the top four states contributing to TB: California, New York, Texas, and Florida. A group from the University of California, San Francisco (UCSF), is studying California. All of the groups are generating estimates of the year when TB elimination would be achieved with various interventions, as well as the number of LTBI cases projected to occur. This work will allow for costs to be attached to the estimates so that states and the US overall can use them for budgeting.

Regarding surveillance for TB infection, the liaison representative from the National Association of City and County Health Officials (NACCHO) asked about plans to gather data on both the positive and negative findings. Dr. LoBue replied that the surveillance will depend on the different sources of data and how the data collection takes place. If a state is collecting data only on positives, that information is all that can be shared with CDC. Ideally, state databases will include all individuals who are tested, but if states do not collect that information, CDC cannot force them to.

With an electronic reporting system from laboratories on Interferon-Gamma Release Assay (IGRA) testing, it should not be difficult to collect data on both positive and negative tests, yielding a better feel for a denominator to shed light on the prevalence of infection. Dr. LoBue said that even with information on the amount of Tuberculin Skin Test (TST) versus IGRA, the TST is still predominant. Unfortunately, much of the IGRA testing could be conducted by healthcare facilities that are not in populations of interest and are not accompanied by linked information about the individual being tested. There are upsides and downsides to all potential approaches. Given the relative lack of resources, a perfect solution is not likely, but final decisions about the surveillance have not yet been made.

The liaison representative from the Council of State and Territorial Epidemiologists (CSTE) expressed concern regarding STEMS and LTBI surveillance in general. It is important to quantify the burden of LTBI if the ultimate goal is TB elimination, but it is complicated without sufficient resources to do the work properly. It is difficult to quantify the LTBI burden without information for negatives. If a disease is reportable, which LTBI is not in most jurisdictions, the data collection tends to focus on the positives rather than the negatives. A system in which clinics report directly to CDC is unorthodox. It would be difficult for states and local jurisdictions to verify reports from a clinic if the disease is not reportable. Surveillance for LTBI should be

done thoughtfully, even as the proposed first steps are stepping stones. Contact data for LTBI surveillance are provided in aggregate. Consideration could be given to collecting more line-level data on contacts or including LTBI as part of the Report of Verified Case of Tuberculosis (RVCT) so that the work incorporates existing systems. Every TB case began as a contact, and the reservoir of infection is among individuals who are positive.

Dr. LoBue asserted that DTBE has no intention of circumventing the states. If states do not want to be involved in the surveillance system, then they will not be involved in it. Some states are interested, however. The TB world is spoiled with its current surveillance system, which has captured every TB case back to 1993 with 46 variables. Other surveillance systems for other diseases are much less robust, with sentinel estimates. In launching a surveillance system for LTBI, which is more complicated than TB, the first iteration will be imperfect and will not be as good as the TB case surveillance system. Regarding contacts, it would be ideal to collect line-listed rather than aggregate information. Collecting line-listed data for the volume of LTBI contacts would put significant burden on states.

When the Funding Formula Workgroup completes its work, ACET requested that the results be presented for input before the formula is finalized.

ACET asked for the opportunity to review and comment on the findings of the workgroup focused on procedures for accessing the drug mini-stockpile.

Regarding LTBI, an ACET workgroup examined these issues and recommended that CDC move forward, and that work is ongoing. It is important to remember that the CDC system is voluntary and not mandated. States would need to change laws, safety codes, or reporting requirements in order to require LTBI to be legally reportable. In the interim, CDC is establishing a voluntary surveillance system. Denominators are important, but they will not be achievable immediately.

DTBE's Communication Plan for USPSTF Recommendations

Wanda Walton, PhD, Med
Communications, Education, and Behavioral Studies Branch
Division of Tuberculosis Elimination
National Center for HIV/AIDS, Viral Hepatitis, STD and TB Prevention
Centers for Disease Control and Prevention

Dr. Wanda Walton presented DTBE's communication plan and updated materials regarding the USPSTF recommendation regarding screening for LTBI in adults.

The USPSTF recommendation is an opportunity for outreach and to call attention to the importance of targeted testing and treatment of LTBI to the goal of TB elimination in the US. The recommendation is one part of the overall plan for reaching individuals at high risk for developing TB. The recommendation will be published in *JAMA* the week after Labor Day, 2016. Both USPSTF and *JAMA* will have supporting resources and communication materials to promote the recommendation. The resources will be embargoed until the recommendation is released.

DTBE's communication plan are to:

- ❑ Communicate the USPSTF recommendation and related policies to stakeholders.
- ❑ Amplify the communication activities from USPSTF and other partner activities.
- ❑ Reinforce CDC LTBI guidelines and recommendations.
- ❑ Provide links to LTBI resources, education materials, and training to help partners incorporate the recommendation into practice.

The communication plan is multi-layered, with messages and materials tailored specifically to reach three audiences:

- ❑ Public health organizations and providers
- ❑ Private healthcare organizations and providers serving high-risk populations
- ❑ High-risk populations and organizations serving these populations

For public health organizations and providers, the plan objective is to provide information and education about the USPSTF recommendation and direct providers to CDC LTBI resources, including messages, training, and education. The primary target audience is TB stakeholders, including:

- ❑ NTCA
- ❑ Stop TB USA
- ❑ ATS
- ❑ IDSA
- ❑ Results, Inc.
- ❑ Companies that provide testing for LTBI

Secondary target audiences include:

- ❑ Healthcare providers, including the National Commission for Health Certifying Agencies (NCHCA)
- ❑ Bureau of Primary Health Care (BPHC) Providers
- ❑ Medical Associations
- ❑ Public Health Associations such as ASTHO and the National Association of City and County Health Officials (NACCHO)
- ❑ Other health advocacy groups

Regarding private healthcare organizations and providers serving high-risk populations, the communication plan objective is to promote testing for TB infection for at-risk populations as a preventive service covered under the Patient Protection and Affordable Care Act (ACA). The target audiences include:

- ❑ Private healthcare providers
- ❑ Professional medical associations, especially those which primarily treat at-risk patients
- ❑ Community health centers

Communication to these audiences will take place via different channels and strategies:

- ❑ Association newsletters/blogs/website content
- ❑ Medscape and other healthcare provider social networks
- ❑ Social media
- ❑ Twitter chats with professional associations
- ❑ Toolkits for health departments to conduct outreach

Regarding high-risk populations and organizations serving these populations who are affected by the USPSTF recommendation, the communication objective is to encourage at-risk patients to ask their healthcare providers about LTBI testing. The target audiences are:

- ❑ People with untreated LTBI at risk for developing disease
- ❑ Community organizations and service providers that work with these populations

The channels and strategies for reaching these audiences include:

- ❑ Traditional media
- ❑ Social media
- ❑ Provider education
- ❑ Posters and flyers in provider offices and clinics
- ❑ CBOs
- ❑ Health Insurance company newsletters

The key communication messages focus on:

- ❑ Risk factors for LTBI
- ❑ The difference between LTBI and TB disease
- ❑ Testing for TB infection
- ❑ Treatment options for LTBI

DTBE communication activities include:

- ❑ A Facebook page and Twitter account
- ❑ Traditional media
- ❑ Partner emails
- ❑ CDC Newsletters
- ❑ Social Media
- ❑ Outreach to TB stakeholders and professional associations
- ❑ Amplification of the USPSTF messages that they are developing

The DTBE communication will highlight LTBI resources, such as:

- ❑ LTBI guidance
- ❑ LTBI infographics
- ❑ Fact Sheets
- ❑ Training opportunities

An example of an LTBI resource for clinicians is Latent TB Infection: A Guide for Primary Health Care Providers. It is a booklet and a mobile app focused on LTBI diagnosis and treatment. DTBE has also developed a number of infographics and Web buttons on LTBI, which are available here: CDC TB Infographics. The division has developed fact sheets and patient education materials, which are being re-examined to determine whether they should be updated to reflect or emphasize the USPSTF recommendation. These materials are available here: CDC TB Patient and General Public Materials.

Training resources for healthcare providers include:

- ❑ TB 101 for Health Care Workers, which is available in Spanish as well as English
- ❑ Interactive Core Curriculum on TB: What the Clinician Should Know
- ❑ Self-Study Modules, which are newly updated
- ❑ Find TB Resources, including materials from within and outside of CDC
- ❑ Regional Training and Medical Consultation Centers (RTMCCs); their resources can be accessed here: RTMCC TB Training and Education Products

Upcoming resource materials include:

- ❑ Updated Targeted Tuberculosis Testing and Treatment of Latent TB Infection slide set, which can be downloaded and customized by users for their outreach and education activities; additional slides are being added specific to the USPSTF recommendation
- ❑ CDC Latent TB Infection Key Messages and Resources, which TB control programs can use to develop their own messages and to provide outreach to healthcare providers. It includes talking points and references for more information
- ❑ Matte Articles related to the USPSTF can be customized by partners and programs in their organizational newsletters, web content, and other publications
- ❑ Articles for public and clinical audiences are in development
- ❑ Social media content

ACET can help with the communication efforts by:

- ❑ Amplifying the USPSTF/*JAMA* announcement through available communication channels, such as newsletters, websites, and traditional and social media)
- ❑ Customizing key messages for your audiences, communities, and partners
- ❑ Sharing key messages and LTBI resources, especially with providers who work with at-risk populations
- ❑ Providing ideas on additional activities or materials to promote targeted testing and treatment of LTBI to DTBE

This work would not be possible without wide support. Dr. Walton thanked the team leaders and personnel in the DTBE Communications, Education, and Behavioral Studies Branch. The communication will be ongoing, and information about the USPSTF recommendation will be integrated into other DTBE messages about testing and providing complete treatment for LTBI.

ACET thanked Dr. Walton and her team for their work.

ATS, CDC, and many other partners have been involved in developing guidelines for the detection and treatment of LTBI. The proposed guidelines were somewhat complicated, with tiers of risk. ACET asked about the status of that work and whether it will be consistent or compatible with the messaging regarding the USPSTF recommendation.

The guidelines have taken some time due to the requirements associated with Grading of Recommendations Assessment, Development and Evaluation (GRADE) requirements. Most of the data do not come from clinical trials, which the GRADE assessment process targets. The guidelines will be helpful for treatments, but not as helpful for determining which populations to target, as those data tend to fall into the cost-effectiveness study realm. There will be a gap, as the guidelines will not provide clinicians with firm ideas regarding whom the testing should target. The guidelines will not conflict with the messaging regarding the USPSTF recommendation.

ACET understood that the USPSTF recommendation is directed at adults. However, there was concern that if the messaging does not refer to children and adolescents with risk factors, those groups might be overlooked. When new recommendations are published, old recommendations tend to be neglected. There is a risk that as organizations develop new programs or apportion their resources, children and adolescents will be lost. Dr. Walton agreed and noted that the new recommendation focuses on segments of the population that need to be tested. The messaging and materials will be fully comprehensive and will highlight the existing recommendations specific to children. The education materials emphasize the new recommendation because it is newsworthy and brings new attention to LTBI testing and treatment, but DTBE will include all high-risk groups who need to be tested and treated for LTBI in the communications.

This issue is serious and needs attention. While DTBE's communication plan is strong, there was concern regarding the lack of a clear statement from CDC regarding who should be tested for LTBI. There is evidence to support a statement from various studies, but the evidence cannot be GRADE. The recommendation from USPSTF is to test the individuals that CDC recommends, but there is not a clear, concise, recent publication from CDC stating who should be tested. It was suggested that DTBE work with NTCA to update recommendations regarding who should be tested for LTBI, particularly among foreign-born populations, about whom confusion remains.

Dr. LoBue said that the USPSTF recommendation is not vague. Dr. Walton and her team have used the USPSTF recommendation as a lead in for the communication materials, but the materials incorporate more comprehensive discussion regarding other populations that should be tested, such as those who are infected with HIV. The USPSTF recommendation focuses on two groups who CDC has always recommended for LTBI testing: the foreign-born and those in congregate settings, specifically homeless and incarcerated populations. The communication materials will emphasize that other groups need to be tested as well. They will re-examine the pediatric population, highlighting the Bright Futures recommendations. DTBE can also work with NTCA to determine other approaches to bring more clarity to these issues.

ACET suggested that an *MMWR* article or an NTCA/CDC statement regarding who should be tested for LTBI would be valuable. The ATS/CDC group is limited by the GRADE process and may not be able to make firm statements about populations that should be tested. Dr. LoBue understood the value in having a single document or statement, with accompanying resources, citations, and guidelines, regarding populations that should be tested for LTBI. DTBE could work with NTCA on such a product.

Practical advice is needed that may not be supported by GRADE-level evidence. Dr. LoBue recognized the gap associated with the GRADE process. They will determine the appropriate medium for this product. An *MMWR* article is an attractive option, but there are other potential outlets.

Dr. Mermin said that it is important to follow standard procedures about interpreting evidence regarding important issues for TB. Further, it is important to implement the guidance using communication tools and mechanisms that bring the information to patients, providers, and health systems. It is possible to be clear regarding for whom LTBI screening and treatment is recommended in order to provide practical help to providers and to provide sources to support the recommendations. As screening and treatment for LTBI are expanded, these issues must be addressed. It is not likely that all providers will demand GRADE-level recommendations. Many need guidance, such as the countries of origin that are of highest concern.

Dr. LoBue commented that there are simple and practical ways to provide guidance. For instance, California's approach focuses on excluding countries of origin and suggesting that individuals from other countries should be tested.

Ms. Donna Wegener said that NTCA would be willing to work with CDC as suggested to create a valuable resource to be added to the work of Dr. Walton and her team. Regarding the LTBI guidelines, under the leadership of Drs. Marcos Burgos and Charlie Crane, NTCA has assembled a workgroup to create a companion document to accompany the guidelines when they are released. The document incorporates a practice-based approach to fill gaps that are left by the GRADE criteria. NTCA is working with the authors of the guidelines to ensure that the companion document is released in tandem with them.

Ms. Marks commented on the National Business Group on Health (NBGH) Guidelines for Clinical Preventive Services. This document lists basic epidemiology as well as risk populations. It also addresses cost-effectiveness issues.

The CDC website on TB has many helpful publications. The resources were helpful in creating a toolkit for healthcare providers as part of World TB Day. CDC's website includes clear and specific resources and educational materials, such as who should be tested for TB. The site also includes clear flyers and posters, and there may not be widespread awareness of the availability of this information.

It was noted that the communication plan does not specifically refer to correctional facilities. During the last ACET meeting, there was unanimous support for CDC to embrace the use of the Rifapentine Plus Isoniazid (3HP) protocol in congregate settings. Dr. Walton said that the communication strategy is a marathon that will call on help from many partners, including correctional partners.

Ms. Cole asked about civil surgeons, who are conducting screening. Many of them are not currently treating TB. Dr. Walton replied that civil surgeons have specific guidance regarding providing TB testing and treatment. That group could be targeted regarding treatment.

Dr. Flood said that there are many resources available with lists of whom to test for TB. Although the USPSTF recommendations are clear regarding testing individuals who are foreign-born or who reside in congregate settings, busy doctors need a simple list. They have had lengthy, confusing lists regarding individuals who have been exposed to TB and who will progress to treatment. She encouraged the development of a tailored, up-to-date tool with a short list of whom to test and treat. Adolescents and children should not be left out. She hoped that the editorial in *JAMA* would be accompanied by the California Risk Assessment Tool, which simply focuses on three groups that merit testing.

Ms. Cole asked for comments regarding how ACET can help with communication efforts associated with the USPSTF recommendation. She summarized the comments thus far:

- ❑ Remember children and adolescents
- ❑ Create a document on who should be tested for LTBI
- ❑ NTCA companion document to answer some of those questions
- ❑ Some of the next steps will be based on local epidemiology, but a standard risk assessment tool such as the one developed in California would be helpful

The liaison representative from the International Union Against TB and Lung Disease noted that ACET is focused on the elimination of TB. It is remarkable that the recommendation to develop new tools for diagnosis and treatment were part of the original TB elimination plan. CDC funding is largely responsible for the availability of IGRA testing in the US, as well as of the short-course regimen. The communication plan to implement the USPSTF recommendation is impressive. It is also important to communicate what has been accomplished by the CDC funding for research.

Private providers are ecstatic that the USPSTF has recommended testing so that there will be coverage under the ACA. A recurring question, however, regards how to pay for the treatment of the individuals who will be newly-identified as infected. ACET might begin or continue to address this issue and the need for the ACA also to cover treatment of the newly-identified infected individuals.

Ms. Cole said that ACET has raised that issue previously. The response was that each state determines what is allowed and covered. ACET can revisit the issue, but it may remain a state-by-state activity. In California, work is ongoing with medical directors of managed care plans.

If the goal truly is to eliminate TB, perhaps there should be national impetus targeting states to cover treatment so that the nation is prepared to address the reservoir of infection that will be discovered.

There was discussion regarding the timeline for insurers to cover these services without a copay or deductible. Ms. Cole did not know the answer, but expressed hope that this coverage could come shortly after the release of the recommendation.

With no additional comments or questions presented, Ms. Cole dismissed ACET for a lunch break at 11:48 a.m. The meeting resumed at 12:20 p.m. Dr. Dean called roll of ACET voting members and *ex officio* members. A quorum was present.

Analysis of TB Surveillance Data

Recent Leveling of TB Case Counts in the US

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Dr. Lori Armstrong updated ACET on the recent leveling of TB case counts among a wide variety of sub-groups of patients in the US. It was reported in the World TB Day *MMWR* that after two decades of steady decline, the number of reported US TB cases rose slightly in 2015 to 9563 cases. This report was based on preliminary data. The final data are now available, confirming the increase with 9557 cases reported in 2015. The net increase is 1.6% from 2014. The TB incidence in the US has leveled to approximately 3 per 100,000 individuals for the past three years. This leveling follows 22 years of steady declines in rates and TB counts. DTBE analyzed data from the National TB Surveillance System (NTSS), a permanent 2015 data set. This system uses a standard report form and standardized definitions across the country. The system collects data from 50 states and the District of Columbia (DC) as well as all US-affiliated islands. Case-level data have been collected since 1993. The system collects demographic and clinical and social risk factors. Since 2009, the system has collected additional information on diabetes, immunosuppression, and end-stage renal disease among TB patients.

This analysis is based on data from the 50 states and DC and focuses on case counts. The focus on case counts provides a consistent way to compare groups without relying on the population data needed for subgroups, such as TB cases among the foreign-born. Population data for 2015 for racial and ethnic groups, the foreign-born by country of origin, age groups, and other subgroups will not be available until later in 2016.

Three methods were used to analyze TB trends:

- Graphs of TB trends over time
- Segmented regression analysis of trends, which compares predicted case counts, assuming past trends continued, with observed case counts and identifies the subgroups with the largest increases of observed counts greater than counts that were predicted if past trends had continued
- Analysis of change in proportions of different subgroups from earlier, compared with more recent time periods

Regarding the incidence of TB in the US from 1993–2015, the segmented regression analysis shows break points, or cut points, where the change in rates significantly differs from a previous time period. From 1993 to 2000, there was an annual percent change (APC) of -7.3%. The first significant change in the trend is seen in 2000. From 2000 to 2007, the APC was -3.7%, which also is significantly different from a zero slope. The next cut point is in 2007, showing a significant decline of greater than 6% in incidence after 2007. Another cut point is observed in 2013. From 2013 to 2015, the rates have a -0.1 APC; however, that change is not significantly different from a zero slope, and the line is essentially flat. The trends in case counts also reflect a change in the APC at 2013. The APC from 2013-2015 is +.6%, but the slope is not statistically different from zero.

Significant increases and decreases in TB case counts are widespread across the US in 2014-2015. The leveling of TB case counts may have been impacted by recent TB transmission. Over the past few years, DTBE has developed improved analytic techniques to identify TB outbreaks and to determine the likelihood that a particular case might be attributable to recent TB transmission, and which are more likely to be due to a remote reactivation.

In order to determine whether flattening case counts might be attributable to an increase in recent TB transmission, DTBE applied these methods to determine the trend of recent transmission of TB cases over time. The data show that the number of cases with recent transmission has been stable, or has trended slightly downward, across the five years from 2011 (when the techniques can first be applied) to 2015. The trend in recent transmission among US-born individuals is even steeper than among all cases, with approximately 20% decline over the five years. This finding is counterbalanced by a slightly upward trend among the foreign-born of approximately 8% over the same time period. Approximately 400 cases attributable to recent transmission among the foreign-born in 2015 represents only approximately 6% of the total number of foreign-born cases.

Regarding the incidence of TB among US-born individuals, there were impressive declines in annual TB rates from 1993-2002, with annual declines of greater than 10% per year. The downward trend slowed slightly from 2002-2005 and then returned to a more robust decline from 2005-2013, with an average decline of 8.5% per year. There was a dramatic slowdown from 2013-2015, with an annual decline of only 1.8% per year, which is not significantly different from a slope of zero. In other words, there has been a leveling of TB incidence among US-born individuals over the past two years.

The TB case counts among US-born individuals show similar trends to TB rates in that population. The slope of TB case counts for 2013-2015 is slightly greater at -2.6% per year than was observed for TB incidence; however, it is still not significantly different from a zero slope. Both the incidence and the rate counts for US-born TB cases have flattened in the past two years.

Regarding TB case counts among US-born non-Hispanic Blacks from 2007–2015, the observed case counts are significantly above the prediction band. This finding indicates that there were greater-than-predicted case counts reported in 2014 and 2015. US-born Hispanics also had greater-than-predicted case counts, but only in 2015. US-born Asians and US-born Whites did not have excess cases.

DTBE applied an analytic approach to compare US-born TB cases by race/ethnicity in the two time periods of 2007–2013 and 2014–2015. This approach sheds light on which groups are contributing to the leveling of case counts, and which are trending the other way. For each category, if there is an increase among one or more groups, there will be a corresponding decrease in other groups. Hispanics had a substantially greater proportion of cases in the later time period compared to whites, and Native Hawaiian/Pacific Islanders, Asians, and American Indian/Alaska Natives also had a significantly greater part in the total TB cases in the same time period. It is important to note that the percentage of cases contributed by the last three groups is small. The p-values remain the same when adjusted for verification criteria, such as laboratory versus non-laboratory confirmed cases.

The segmented regression analysis technique can illustrate the impact of age on the leveling case counts. No excess TB cases were noted among the very young. Except for a slight increase among children aged 5 through 14 years, there were no excess cases among those less than 24 years old. In contrast, there were significant increases among those 25 through 44 years of age, 45 through 64 years of age, and 65 years of age and older. An analysis of age groups across the time periods of 2007-2013 and 2014-2015 shows that increases occurred among those aged 5 through 24 years of age. Increases also occurred among the 65 and older age group, but they were not significant.

In comparing two time periods for other characteristics, combined extrapulmonary/pulmonary cases had a significant increase in 2014 and 2015 when compared to pulmonary disease. Those with a history of previous TB had a significant increase as well. Significant decreases were among those with cavitary disease and those who were HIV-infected.

Other risk factors at the time of TB diagnosis experienced changes. There were significant increases in TB case counts among non-injecting drug users and among homeless persons. There were declines in TB cases among individuals who reported using excess alcohol. None of the additional risk factors, such as diabetes, end-stage renal disease, or immunosuppression were significant for the US-born group. Diabetes was an important factor among the foreign-born.

Regarding foreign-born TB cases, the trends in case counts indicate significant cut points at 2007 and 2012, with an APC of only .5% from 2012-2015. It is not statistically different from a flat slope. There has been a steady increase of 4.4% yearly in the overall population of foreign-born persons in the US from 1993-2006. Since 2006, the rate of increase slowed to 1.3% per year. There has been a steady, significant decline of nearly 4% per year of TB incidence among the foreign-born since 1998. Trends observed among racial and ethnic groups in the foreign-born are as follows:

- Among foreign-born non-Hispanic Blacks, there was a slight but statistically significant increase in case counts above what was predicted in 2015
- Among foreign-born Hispanics, there was a substantial increase over predicted case counts
- There was an even larger increase among non-Hispanic Asians
- There was no increase among foreign-born Whites

TB case counts also were analyzed among the foreign-born by the number of years that have elapsed since their arrival in the US and their TB diagnosis. When increases in case counts are observed, it is often assumed that the increases are driven by TB among recent arrivers. This assumption is only part of the picture. Cases among those who arrived in the US less than 1 year ago and among those who arrived 1-4 years ago declined from approximately 2003 to recently. There has been a slight increase in these groups in the past few years. In contrast, cases among those who arrived 10 or more years ago have steadily risen.

Different countries of birth contribute to these summary statistics. Among those in the US for less than 1 year at the time of TB diagnosis, the following countries had greater than predicted case counts in 2014 and 2015: México, Philippines, Vietnam (in 2015), and India. Persons born in China who were in the US for less than 1 year at the time of TB diagnosis did not have higher-than-predicted case counts.

For those foreign-born persons diagnosed with TB at least 10 years after their arrival in the US, data from each country shows increases over the last 9 years, except for Vietnam, for which the 2015 case count is approximately the same as the 2007 case count. For all countries combined, the slope of persons arriving in the US at least 10 years ago has steadily increased at an APC of 2% over the last 25 years. A steady increase probably reflects reactivation of TB acquired in the person's country of birth more than a decade ago. Therefore, this increasing trend probably will continue, at least in the short-term.

Regarding risk factors among the foreign-born, there were differences in percentage between the two time periods of 2007–2013 and 2014–2015. There was a slight but significant increase in the difference in case counts from laboratory-confirmed cases when compared to clinical provider-verified cases. There was a matching decline in percentage difference. There also was an increase for combined pulmonary/extrapulmonary disease when compared to pulmonary disease. There was a significant decrease in the percentage of HIV-infected persons from the earlier time frame. It should be noted that HIV reporting has improved in later years. In 2014, 89% of all cases had HIV status reported. In 2009, only 64% of cases had HIV status reported.

Other risk factors showed a slight increase, but the only significant change was among TB cases reported with excess alcohol use, where a decline is shown. Diabetes was by far the greatest increase, at 3.2 percentage points in 2014 and 2015.

Recent increases in TB case counts were found across many age, racial/ethnic, and geographic groups. Recent transmission does not seem to be contributing to the increase in cases. Among foreign-born persons who arrived in the US 10 or more years ago, cases of TB have increased steadily over the last two decades. Certain risk factors, such as diabetes, may be playing a role in the increased cases. This analysis suggests that the leveling of TB case counts may continue into the future, or that there may be an increase in case counts.

There has been an unexpected increase in Eye/Ear TB in the US. Previously, an ACET member noted an unexpected increase in reports of TB of the eye in this state. DTBE undertook this analysis to better understand the nature of this increase. TB of the Eye or Ear has been collected on the RVCT since 1993; however, the RVCT form does not distinguish between the two sites. It is suspected that most reports of Eye/Ear TB are in fact TB of the eye, although it cannot be certain.

A total of 1159 Eye/Ear TB cases have been reported since 1993. Beginning in 1993, Eye or Ear TB was reported at a rate of 20-40 cases per year. Beginning in 2010, 75 or more cases of Eye or Ear TB cases have been reported per year, representing over 53% of the total Eye/Ear TB cases reported in the U.S. The largest case count occurred in 2013. Since then, the annual case counts have been slightly less. The increase coincides with the introduction of IGRA testing, which was first reported on the RVCT in 2009.

DTBE considered the average annual percent of Eye/Ear TB reported among all TB cases in selected reporting areas for the time period 1993–2008 versus 2009–2015. In the earlier time frame, Arkansas reported approximately .4% of all TB cases as Eye or Ear TB. Since 2009, however, the state has reported that over 3% of all TB cases as Eye/Ear TB. The same pattern is observed in Michigan, Oregon, and Utah. Many states increased their percentage of Eye/Ear TB over the most recent years. These four states increased at a higher percentage than others.

Eye TB cases are predominantly reported as provider-diagnosed rather than as laboratory-confirmed cases. This result is understandable from a clinical perspective, as obtaining a clinical specimen from the eye for laboratory testing presents risks of pain and injury that are greater than risks associated with collecting a sputum specimen or a specimen from other extrapulmonary sites. It makes sense, therefore, that physicians would rely on non-invasive tests for TB infection, such as TST or IGRA. This dynamic could lend explanation to the increase in Eye/Ear TB diagnosis since the beginning of reporting IGRA results on the RVCT began in 2009. Prior to that time, Eye/Ear TB diagnoses would have relied on TST results, and ophthalmologists may be less likely to utilize TST.

The data regarding case verification criteria for all TB cases indicate that case counts for both laboratory-confirmed and provider-verified cases show a steadily declining trend until 2015, when the laboratory-confirmed cases show a slight increase. Proportions between the two verification criteria have changed only slightly over the years, with 80% of TB cases being laboratory-confirmed, and 20% clinical-provider-verified. The phenomenon associated with Eye/Ear TB does not explain the leveling, as there is no increase in clinical-provider-diagnosed cases and there is an increase in laboratory-diagnosed cases.

From 1993-2008, most Eye/Ear TB cases were tested with TST only. Beginning in 2009, the RVCT began to collect IGRA results. Since then, the IGRA tests have had an increasing proportion of testing of all Eye/Ear TB cases over time. In 2015, they had the greatest proportion of testing.

In summary, Eye/Ear TB cases have increased slowly since 1993 and more rapidly beginning in 2009. Most cases are not laboratory-confirmed, and the increase is coincident with the availability of IGRA. The role of increased TB testing before Tumor Necrosis Factor (TNF)-blocker therapy for uveitis is unclear. The increase is seen in all age groups, all racial and ethnic groups, and in both US- and foreign-born persons.

ACET thanked Dr. Armstrong for the important information, which is particularly useful in shaping guidelines and communication plans.

The liaison representative from The Union commented that the data are interesting and important for understanding the details regarding the leveling-off of TB cases. These fluctuations are relatively minor. It is well-known that the TB Elimination Plan failed to reach the goal of 1 per million case load in 2010. These data are further evidence that the US will not reach TB elimination at the current rate. He referred to a paper published in the "Gray Journal" about costs averted due to implementation of TB control measures. The estimates for costs per case, including lost income and death-related costs, are over $400 million per year generated by excess TB cases in 2014, when there should have been about 319 TB cases in the US, and instead there were over 9400 TB cases in the US. ACET should not consider year-to-year fluctuations, except to understand the situation, but should focus on the goal of reducing TB cases to fewer than 300 cases per year. "Even achieving 3000 cases per year would represent a large accomplishment."

"In response to a question from ACET, Dr. Armstrong confirmed that the graphs depict data for foreign-born persons who have been in the US for less than one year at the time of TB diagnosis for each year of surveillance."

ACET asked whether the trends could be related to changes in the requirements for overseas TB screening prior to individuals entering the US, and whether it might be possible to assess that factor. Dr. Armstrong replied that DTBE does not have data available to determine which individuals had been tested overseas and which had not. There may have been some ecological studies on this issue.

In the summary of US-born TB cases by race and ethnicity, one slide shows that the cases for Blacks and Hispanics have increased according to predictions based on trends. The next summary slide appears to show percentages dropping for Blacks. Dr. Armstrong answered that the two slides illustrate two different analytic methods. The rates among US-born non-Hispanic Blacks declined, but not as much as predicted. The two methods are two ways to illustrate that even though the decline in case counts was -4.3%, the decline was not statistically significant when compared to the reference group of Whites. The predicted case counts represent a different analytic method that takes into account trends from 2007. Even though there were declines, they were not as much as expected.

ACET asked why data from the US territories are not included in this presentation and are rarely discussed overall. The territories seem to have higher TB rates than the 50 states and could contribute to TB rates, given movement back and forth among the territories and the US. These individuals are not included among the foreign-born or among US populations. Dr. Armstrong said that TB rates in the US-affiliated island nations are not considered part of the US incidence rates. If those individuals come to the US and are diagnosed with TB, then they are included in the US TB incidence rates and included in the analyses. The territories were not among the top-five countries for the foreign-born cases, and some cases in the territories might be considered US-born, depending on the complex definitions used for surveillance. She noted that the analyses are preliminary. They have not been adjusted, and little multivariable analysis has been conducted. Cases from US-affiliated territories will be considered as the analysis progresses.

ACET does not often discuss TB rates in the US territories, where TB rates are higher. ACET might consider these populations in their discussions and analyses.

The current LTBI guidelines recommend evaluation for LTBI in foreign-born individuals within five years of their arrival in the US. That approach may have been appropriate in 2000 when the guidelines were developed, but it is not helping with current TB elimination goals. The guidelines should focus on foreign-born individuals who have been in the US for any period of time. The emphasis on diabetes among the foreign-born should be targeted as well.

ACET commented on the analysis of Eye/Ear TB cases. The data regarding Eye/Ear TB cases are for cases that were diagnosed with IGRA only and with no TST. The RVCT forms have been reviewed in Michigan, and a number of cases were reported as "other," not Eye or Ear. It is clear that ophthalmologists have discovered IGRA blood tests. In Michigan, 15% of all active TB cases this year are considered iritis or uveitis cases. It is likely that more information is "buried in the national database."

Ms. Cole acknowledged that there are challenges associated with revising the RVCT, but she asked about discussion regarding separating Eye and Ear TB. Dr. Armstrong said that the division has completed meetings with state partners regarding changing the RVCT, and distinguishing between Eye and Ear TB was one of the recommendations.

Ms. Cole asked whether DTBE would entertain other ideas for modifications to the RVCT, as several suggestions have been made. Dr. Armstrong said that suggestions for modifications were raised at recent state partner meetings. DTBE is open to recommendations in this area. Ms. Cole said that ACET would discuss the issue further in the Business Session.

The liaison representative from CSTE thanked Dr. Armstrong for the presentation, particularly the data regarding the inflection points with TB incidence rates. Regarding the data on recent transmission, she said that recent transmission is challenging to determine. The data should be interpreted with caution as there are limitations to the analysis. Dr. Armstrong said that the methods used for the analysis were from a paper by Anne Marie France and are referenced. The data used are from the most recent, permanent DTBE database from 2015 of genotyped cases.

Iritis and uveitis are nonspecific entities that can be caused by a long differential. It should be considered whether these cases are real TB versus artifactual. ACET cautioned against concluded that these cases are truly TB without deeper examination. They should be careful in evaluating this increase, which could be a "pseudo outbreak" from IGRA. Clinically and anecdotally, many of these cases are idiopathic, they recur, they relapse, and they have a low IGRA result. The relatively small increase in Eye/Ear TB is interesting and important to address, but before the analysis goes too far, there should be a closer consideration to determine whether these cases are truly TB.

Update on Molecular Testing – Discordance

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National Center for HIV/AIDS, Viral Hepatitis, STD and TB Prevention
Centers for Disease Control and Prevention

Dr. Beverly Metchock presented to ACET regarding molecular testing in DTBE laboratories and the problem of discordance between methods. Discordance happens because the tests are not gold-standard for growth-based, and all of the mechanisms of drug resistance are not known.

The Molecular Detection of Drug Resistance (MDDR) Service at CDC was implemented in September 2009 for clinical and programmatic use to make rapid confirmation of multi-drug resistant TB (MDR-TB) available and to make laboratory testing available to clinicians about second-line drug resistance in case of RIF-resistant or MDR-TB.

Although rapid, broad-based testing is available for first-line drugs, if an individual is identified as having RIF resistance or MDR-TB, it takes time to get second-line drug results. Testing criteria for the DTBE laboratory include:

- ❑ Isolates of *Mycobacterium tuberculosis* (*Mtb*) complex, or Nucleic Acid Amplification Test (NAAT) positive sediments. Raw specimens are not accepted
- ❑ From high-risk patients known to be RIF-resistant or MDR-TB
- ❑ Other high-risk patients from populations with high rates of drug resistance, who have been exposed to a drug-resistant case, or who are failing therapy
- ❑ Cases of public health importance
- ❑ Mixed or non-viable cultures, as it is difficult and time-consuming for laboratories to separate *Mtb* complex from non-tuberculous *Mycobacteria*
- ❑ Other reasons

When the laboratory receives an isolate or sediment, molecular analysis is conducted. Based on the submission criteria, the laboratory will screen by pyrosequencing (PSQ), looking for INH and RIF resistance markers. If resistance is detected, the full Sanger panel for first- and second-line drugs is utilized. If the sample is known to be MDR-TB or RIF-resistant, or for other reasons, the full panel for first-and second-line drugs is utilized

The screen is in place due to time, cost, and labor-intensity associated with testing. In 2009, the laboratory protocol began with the full Sanger protocol. The PSQ screen was implemented in 2012. The laboratory turnaround time for molecular testing is an average of 2-3 full days. When a specimen is received for molecular testing, the conventional growth-based testing is implemented. The molecular results are reported to the submitting laboratory by fax immediately after they are generated and reviewed. When the conventional drug susceptibility testing (DST) is completed, those results are compared to the molecular results. If there is discordance between them, the discordance is explained when possible.

Before MDDR was implemented in 2009, the plans were presented to ACET, which asked how many specimens were expected. At the time, the laboratory received isolates for conventional DST from 20-22 state public health laboratories per year. Over the past year, the DTBE laboratory has received isolates from every state except Wyoming. The laboratory also receives requests for MDDR-only DNA specimens. The laboratory is working with the pathology group in the National Center for Emerging and Zoonotic Infectious Diseases (NCEZID), which receives fixed-tissue specimens on which cultures were not performed, such as surgical specimens. That group runs specific assays, and if they detect *Mtb* in those specimens, then the DNA is referred to the DTBE laboratory for molecular testing. For these patients, this testing may be the only laboratory confirmation of TB and information regarding drug resistance. The MDDR panel is expanding as testing is validated.

Regarding discordance, up to 98% of RIF-resistant strains contain mutations within the 81 base pair hotspots of a gene called *rpoB*. The Val176 locus is outside the 81 base pair hotspots. In the experience of the DTBE laboratory, the infrequent times that a mutation in the 81 base pair hotspot is not detected, but the gene is phenotypically-resistant, there is a mutation. This mechanism of resistance is known and has been incorporated into the battery of testing.

The laboratory became aware of issues associated with RIF DST through the CDC Model Performance Evaluation Program (MPEP) for TB DST. At that time, the program contracted with an outside laboratory to send five isolates to approximately 100 participating laboratories. Isolate H was RIF-susceptible in the originating laboratory. When the results were received from the participating laboratories, a few labeled the sample RIF-resistant. The DTBE laboratory was asked to examine the issue further. The sample had a mutation in the 81 base pair hotspot of *rpoB*. At the time, international laboratories participated in MPEP. All of them labeled the specimen RIF resistant. The same isolate was shared in 2010, and the results were similar.

At the same time, the same results were noted in isolates distributed through the World Health Organization (WHO) Super National Reference Laboratory Proficiency Testing Program. Laboratories utilizing solid-base media testing called specimens *resistant*; whereas, laboratories using other testing called the specimens *susceptible*. WHO called these results *disputed mutations*. The mutation is not disputed, but its significance is disputed. In subsequent studies, these mutations were associated with a high degree of treatment failure and relapse, showing that the phenotypic, culture-based DST is not gold standard.

Laboratories report the “disputed” *rpoB* mutations. Some laboratories that validated testing for resistance reported “not associated with RIF resistance” because the phenotypic tests appear susceptible. Some laboratories report “RIF resistant.” Other laboratories, like DTBE, report between the two: “frequently test susceptible by conventional growth-based techniques, but they are clinically significant mutations.”

Subsequently, because of a lack of understanding of the situation and differences in laboratory reporting, clinicians take the following differing approaches to therapy:

- ❑ Treat as RIF-resistant from the beginning
- ❑ Treat with RIF but do not count RIF in the drugs on which they are depending
- ❑ Treat with Rifabutin (RFB), as some of the mutations look phenotypically susceptible to RFB, but do not count it in the drugs on which they are depending
- ❑ Treat with RFB and count it in the drugs on which they are depending

DTBE's MDDR Service has approached this problem of discordance. Data from September 2009 – February 2011 was reexamined for concordance or discordance between the testing methods in DTBE and the submitting laboratories. During that time, CDC tested 229 isolates with both molecular and growth-based testing. INH concordance was 92.5%. This result is not surprising, as not all mechanisms of INH resistance are known. RIF concordance was 97.4%, which was expected.

Of the 229 isolates, CDC collaborated with submitting laboratories on 180 of them to determine concordance between the CDC molecular result and the submitting laboratories' phenotypic DST. INH concordance was 90.0% and RIF concordance was 93.9%. The submitting laboratories applied different phenotypic DST from CDC's. The concordance between their phenotypic DST and CDC's was INH concordance of 93.9% and RIF concordance of 93.9%.

At this time, laboratories were considering the GeneXpert® assay for research use only, before it was cleared by the FDA. DTBE studied isolates for which the admission criteria form indicated that they were being referred because they were determined to be RIF resistant by GeneXpert®. The largest proportion (61%) had a significant mutation and were determined to the RIF resistant by CDC's DST. The next group (19%) had a mutation detected by GeneXpert®, but the mutation was silent, did not result in amino acid change, and was not clinically significant. These isolates, called RIF-resistant by GeneXpert®, are not. Approximately 14% of the isolates had sputum mutations. Some were RIF-resistant, and some were determined to be susceptible by DST.

Dr. Metchcock was concerned, as users of GeneXpert® may conclude that an isolate that is RIF-resistant but phenotypically susceptible is a silent mutation and not clinically significant, where is could be a disputed mutation, which is clinically significant. This information was useful in creating recommendations for reporting language when GeneXpert® received FDA clearance. DTBE recommended that if drug resistance is detected, then confirmatory testing should follow. Laboratories should send the isolate or sediment for DNA sequencing to determine the actual gene mutation.

To address the ACET recommendation to understand the implications of discordant results between molecular and growth-based testing on clinical decision-making, DTBE is focused on RIF and disputed mutations. A DTBE collaborative project, with Principal Investigator (PI) Ivy Oyegun, includes representatives from the laboratory branch and a number of other branches across the division. A number of state public health partners are also participating on the project, which will utilize a data collection tool to conduct chart reviews to learn the outcomes of patients with these types of mutations. Approximately half of the sites have begun to collect data.

The project study includes isolates referred to the DTBE laboratory from September 2009 – November 2013. The study groups are discordant between the molecular and the growth-based results as follows:

- *rpoB* mutations present with subsequent amino acid change, yet phenotypically RIF susceptible (includes disputed mutations)
- no *rpoB* mutation yet phenotypically RIF resistant
- silent mutations in *rpoB* (i.e., nucleic acid change but no change in amino acid) with susceptible phenotypic results

Patients with these outcomes are compared to the following:

- Patients for whom the disputed *rpoB* mutations with a phenotypic resistant result; those specimens could have tested susceptible in the submitting laboratory
- Ser531Leu mutation, the most frequent mutation to cause RIF resistance, and phenotypic RIF-resistant result
- RIF susceptible isolates: no mutations in *rpoB* (i.e., wild-type), and phenotypic RIF susceptible results

Ms. Cole noted that ACET was asked to provide general comments and reaction to the presentation as well as any recommendations regarding the study focus on clinical evaluation of discordance.

Dr. Andy Vernon asked if, in the follow-up study examining the questionably RIF-resistant isolates, the outcomes are influenced by the knowledge that the site has about the circumstances. He assumed that the results will be stratified by such factors. Dr. Metchock agreed.

It is useful to have MDDR available for programs, as has been shown with the GeneXpert® data. Over one-third of GeneXpert® resistant referrals are ultimately determined not to be RIF-resistant. GeneXpert® was brought into UB laboratories primarily as a replacement for detection of Mtb because it is easier to perform, not because of a need for RIF-resistant results, as the US is a low-prevalence area for MDR-TB. As a result, the RIF-resistant results are “baggage” with the TB detection result, making for significant anxiety in the field. The responses may include isolation and starting second-line drug regimens for sick patients. The MDDR program is important to continue, given that many GeneXpert® resistant results are inaccurate in this low-prevalence country. Three days after specimen submissions, MDDR allows for an appropriate response in one-third of the referrals.

Dr. Metchock added that this point also applies to the need to influence the reporting language. The printout states “RIF resistance detected,” and DTBE wanted to soften the language.

Ms. Cole asked whether DTBE considered whether the smear from the GeneXpert® testing was negative or positive. Some laboratories apply GeneXpert® on negative smears. Dr. Metchock answered that as long as GeneXpert® detected RIF resistance, MDDR can get amplification.

Ms. Cole asked about the timeline for the study, and how information from it will be disseminated. The results will be important for health departments and clinicians. Dr. Metchock replied that data collection has begun. She estimated a time frame of one year. A paper from the group from California describing their experience with patients with these types of mutations has been accepted for publication and could be useful. Much of the information is in the form of anecdotal case reports of what has happened with particular patients when they have failed therapy and been re-examined, and a mutation was discovered. She is often asked whether one test can replace the other, and at this point, it is not possible. The field has the benefit of both.

Ms. Cole said that ACET would appreciate hearing the results of the study after a year's time. With no additional questions or discussion, she dismissed ACET for a break at 1:33 p.m. The meeting resumed at 1:51 p.m. Dr. Dean conducted a roll call of ACET voting and *ex officio* members and liaison representatives. A quorum was present.

Ms. Cole summarized highlights from the ACET meeting thus far, issues to monitor, and potential actions.

NCHHSTP Director's Update

- ACET should monitor the impact of the Zika response on their state and local jurisdictions, and summarize any observed impact.
- ACET members might monitor the issues of hepatitis C in pregnant women, and transmission to the babies that they deliver, in their areas. There are patients co-infected with TB and hepatitis C.

DTBE Director's Update

- The work of the workgroup focused on the funding formula is an area of interest for ACET. When the document is completed, ACET requests review of it and the opportunity to provide input.
- A workgroup is focused on procedures for accessing the mini drug stockpile. ACET requests review of this workgroup's conclusions.
- ACET discussed TB not being on the "Winnable Battle" list and might provide input in this area, moving toward eliminating TB. ACET may need a better understanding of the variables that impact the issues that are included as "Winnable Battles" in order to make recommendations.
- There was discussion regarding whether LTBI should be part of the funding formula. This point requires additional discussion due to the lack of an effective surveillance system.

DTBE's Communication Plan for the USPSTF recommendation

- There must be a focus on children and adolescents.
- ACET raised questions regarding who should be tested and whether a document could be created to capture all relevant information about who should be tested in one resource.
- NTCA is working on a companion document to the USPSTF recommendation that will address some of these issues.
- ACET discussed timing of the release of the USPSTF recommendation and whether the field is ready to assist providers with information regarding who should be tested.
- Simple instructions and a standardized risk assessment are examples of areas where ACET members can be of assistance at the state and local levels, as well as at the ACET level.
- A question was raised about coverage for treatment under the ACA. With the B rating from USPSTF, copays and costs for testing will be addressed, but the issue of treatment persists. Costs for treatment could be barriers to patients receiving care in some settings. More discussion is needed in this area and the costs assumed by local jurisdictions.
- As the communication plan is finalized, ACET suggested that DTBE discuss and share what CDC has accomplished through its research.

Surveillance Data for TB

- ACET discussed implications for TB testing among foreign-born individuals who have been in the country for ten years or more.
- The data need further analysis, but the presentation highlighted important issues.
- ACET discussed where, and how, cases from US territories are counted.
- Opportunities to provide input into potential changes to the RVCT were discussed. An area under consideration is separating Eye and Ear TB on the RVCT. Other potential changes are under review.
- Regarding the increase in Eye/Ear TB, ACET cautioned that it should be determined whether these increases are real, or a "pseudo outbreak" because it tends to be a clinical provider-diagnosis as opposed to a laboratory diagnosis.

Update on Molecular Testing

- ACET heard details on discordant results. There are implications for clinical practice based on those results.
- The ongoing study is expected to be completed in one year, and ACET will invite a presentation of the findings.

Update on ACET Workgroups

Congregate Settings Workgroup

Dr. Lisa Armitige
Chair, Congregate Settings Workgroup

During the last ACET meeting, the Congregate Settings Workgroup requested and received an enthusiastic endorsement of the use of 3HP in congregate settings in the US, including

individuals who are incarcerated as well as individuals who are experiencing homelessness. The workgroup is now focused on ways to increase messaging on this issue. The presentation on the DTBE Communication Plan illustrated many opportunities to increase this messaging. It will be important to emphasize that these two populations are part of the USPSTF recommendation.

TB Drug Supply Workgroup

Jennifer Cochran
Chair, TB Drug Supply Workgroup

Ms. Jennifer Cochran said that the TB Drug Supply Workgroup began meeting in March 2016 and presented an update at the previous ACET meeting. Since then, there have been not changes to the composition of the workgroup, which includes representation from TB program managers, clinicians, pharmacists, DTBE staff, TAG, the National Association of State and Territorial AIDS Directors (NASTAD), and NTCA. She thanked Dr. Neha Shah, co-chair of the workgroup, and Ms. Wegener, as well as CDC staff members Ms. Ann Cronin and Mr. Justin Davis.

Since the last ACET meeting, the TB Drug Supply Workgroup has sought to learn about different models for consideration as well as options in the short-term regarding drug supply. The workgroup considered the stockpile, importation of drugs, centralized procurement, and drug assistance programs.

Stockpile

- Dr. LoBue presented to ACET about the CDC investment in the mini-stockpile. The workgroup commends those efforts. The workgroup has expressed concerns regarding stock rotation and how to ensure the longer-term viability of the stockpile.

Importation of Drugs

- ACET and the workgroup previously discussed the Global Drug Facility (GDF) for TB, drugs, and associated challenges, specifically FDA licensing.
- Workgroup members have contributed to discussion about the potential to add a limited number of high-priority TB drugs.
- There are challenges for domestic programs associated with importation, such as capacity to order in bulk and each state's individual purchasing and procurement regulations, as well as navigating customs.
- The workgroup has considered lessons from the demand side of the equation, especially if individual programs or jurisdictions need to be purchasers and distributors.

Centralized Procurement

- The workgroup has discussed a centralized procurement system and the potential that such a national system could offer, such as the ability to have a rolling stockpile; the ability to access drugs through the GDF; and the ability to provide drugs across a diverse landscape of state and local programs.
- The workgroup received a presentation from the Texas Department of Health on their system of procurement, packaging, and distribution through their FDA-approved facility. The system may or may not serve as a model to replicate in other areas, but for many workgroup members, this presentation introduced a different way to think about managing drug supply.

Drug Assistance

- NASTAD presented to the workgroup on the AIDS Drug Assistance Program (ADAP). While the program is not directly translatable to TB, the model includes drug pricing controls, rebates, and a task force that conducts direct negotiations with drug manufacturers.

The next steps for the workgroup are to begin formulating recommendations for ACET. The workgroup anticipates presenting a set of recommendations at the December 2016 ACET meeting.

Essential Components Workgroup

Barbara Cole, RN, MSN, PHN
Chair, Essential Components Workgroup

Ms. Cole reminded ACET that a prior workgroup made initial revisions to the 1995 Essential Components of a TB Control and Prevention document. A draft was partially completed in May 2013. The chair of the workgroup then rotated off of ACET. The workgroup was recently reconvened and is now collaborating with NTCA. The workgroup co-chaired by Ms. Cole and Dr. Diana Nilsen.

The workgroup is making progress. When a strong draft is ready for review, the workgroup will submit it to a panel of objective subject matter experts (SMEs) for review. The workgroup goal is to submit a draft on September 22, 2016 and to present it to the NTCA board on October 11, 2016. The document will be brought to ACET during the December meeting for review, perhaps with an accompanying tool to assist in critiques. NTCA has developed such a tool, which could be modified for this purpose.

After ACET reviews and approves the document and provides recommendations and suggested changes, the document will be published. The presentation of the document will include recommendations for publication.

Business Session

Motion to Accept April 26, 2016 ACET Meeting Minutes
Ms. Cole opened the Business Session of the ACET meeting by calling for a motion to approve the April 26, 2016 ACET meeting minutes.

A motion was properly placed on the floor by Dr. Lisa Armitige and seconded by Dr. Ana Alvarez to approve the April 26, 2016 ACET meeting minutes. **The motion carried unanimously with no abstentions**.

Other ACET Business: Meeting with the HHS Secretary

Dr. Dean informed ACET that a response has not been received from the HHS Secretary regarding a potential meeting with ACET. It is not likely that a response will be received before the elections in November 2016. She suggested tabling this issue and returning to it after the elections, creating and submitting a new letter when a new HHS Secretary is put in place.

Ms. Cole reminded ACET that the HHS Secretary's office reached out to ACET, expressing interest in a meeting. Timing is the issue at this point. She hoped to begin preparing a summary of accomplishments and barriers associated with TB elimination in the US and to submit a new letter to the incoming HHS Secretary. ACET has discussed highlights to address in the report. She would share the outline of the new letter in anticipation of a meeting with the new HHS Secretary. The letter should emphasize top-priority issues while addressing other issues, such as MDR-TB and maintaining the public health infrastructure, which have high impact as well.

Other ACET Business: ACET Charter

Dr. Dean said that DTBE has submitted the edits and revisions to the ACET charter that ACET had discussed. The next step is for CDC's Management Analysis and Services Office (MASO) to process it as required.

Ms. Cole reminded ACET that the requested revisions to the ACET charter would allow for the parent of someone with TB, or an adult who has had TB, to serve on ACET. She suggested that ACET discuss a potential process for selecting or nominating someone from the impacted community to serve on ACET.

Dr. Dean said that a small group has met to consider potential nominees for vacancies on ACET. The group briefly discussed the idea of representation from the TB-affected community, but they cannot move forward until the charter amendment has been approved. The process will likely be similar to the process for all ACET nominees. An announcement of the vacancy or vacancies is shared, and Dr. LoBue canvasses the TB community for suggested names. There is a process for considering geographic and racial and ethnic diversity. When the time comes to nominate persons to fill ACET vacancies, DTBE will be ready. The length of time for approval for changes in charters varies. She hoped that the change would be approved in the current administration.

Dr. LoBue said that when the charter revision is approved, the next time there is a vacancy on ACET, a member will be sought who satisfies the category. DTBE knows when vacancies are approaching, so they can solicit potential candidates from the TB community and from ACET.

Ms. Cole confirmed that the individual will serve as one of ACET's 10 noting members.

Additional ACET Discussion and Potential Action

Ms. Cole raised the issue of payment for TB medications under the ACA and potential action that ACET might take to further the issue of no payment for the medications. ACET has addressed this issue in the past, but coverage under the ACA varies by state. The USPSTF recommendation addresses only screening for LTBI, not treatment. The issue of TB treatment and tertiary prevention was presented to USPSTF, but the concept was not accepted.

It was noted by ACET that rifapentine is close to being approved on the Medicaid formulary across the states. This approval represents one step forward.

Dr. Flood said that this issue requires a great deal of deliberation. The Ryan White Act, for example, changed everything for HIV infection, ensuring that there are no fiscal barriers to care. It would be ideal if there were a mechanism that is already in place and an advisory body that can be consulted to request a change in policy for treatment. These issues do not only affect Medicare and Medicaid, but all insurances that provide care for persons in the US.

Ms. Cole asked if a group exists comprised of all of the various types of plans and insurers, such as Medi-Cal Managed Care, that addresses these issues in the private sector. In Massachusetts, the state group is the Massachusetts Association of Health Plans (MAHP). ACET was not aware of a national group.

Dr. Flood said that this topic is ideal for HHS, and ACET provides advice to HHS. A leader in policy-setting with experience in other diseases is needed. The ACET liaison representative from TAG agreed that the issue should rise to the level of HHS. One of the complications of ACA is that many of the TB-impacted populations in the US are undocumented and therefore not eligible for Medicaid or certain plans under the ACA. If a mechanism moves forward under the ACA, it potentially could miss undocumented individuals and other populations that need assistance with TB drugs and care.

Ms. Cole asked whether ADAP considers whether patients are documented. The ACET liaison representative from TAG replied that ADAP does not, which is one of the benefits of the Ryan White Act. Under the Act, undocumented persons are able to access HIV treatment if they cannot secure Medicaid or other private insurance.

Dr. Flood added that PrEP, a prevention therapy and not a treatment protocol, is now fully covered under ADAP. She wondered whether the process of including PrEP in ADAP could be instructive for TB so that a drug could be fully supported before a person is infected. Treatment for a person with LTBI to prevent the development of a costly, transmissible disease, should also be paid for.

The liaison representative from The Union said that state and local health departments and governments should not be let off the hook, because TB has never been an entirely federal activity. The case can be made to state and local health departments regarding societal costs for TB cases, the lack of federal funding, and the need for states to step in to support patients who cannot afford care. States could then advocate to the federal government.

Ms. Cole asked whether this exploration of potential places for outreach, such as insurance plans, could be added to the charge of the TB Drug Supply Workgroup, rather than creating another ACET workgroup. Ms. Cochran said that the workgroup could take on this issue, which is part of the group's exploration of the ADAP model and its potential for applicability in this case.

The liaison representative from NACCHO said that with the release of the USPSTF recommendation, there is an opportunity to state not only what the recommendation covers, but also to call attention to what it does not cover. This effort is part of the inability to achieve the goals in the National Plan to Eliminate TB. ACET is in a unique position to educate and motivate the new HHS Secretary and to work on a national level so that it becomes national policy to treat TB infection the same way it is now national policy to treat TB disease. It behooves to move the nation as an entity, even though much of the work falls on individual states, to address the issue together.

The liaison representative from The Union asked why the previous guidelines from 1996 were not still applicable. The 1996 guidelines are very similar, except that they do not include short-course regimens. He understood that the 1996 guidelines were no longer in play because they had to be revised every five years, or they would go out of date. They should be revised in a timely manner and include treatment of TB infection.

Ms. Cole raised the issue of making revisions to the RVCT. ACET has raised issues in this area in past meetings. She asked ACET to discuss issues and topics that might be proposed for addition to the RVCT.

Dr. Flood noted that currently, the RVCT does not collect information on the regimen for MDR patients. The mini-stockpile is now available, which is beneficial, but in the past during drug shortages, it was not possible to query state or national registries for MDR treatment. It would represent an improvement to collect at least information about the major, initial treatment regimen for MDR cases in the RVCT. Most patients are put on a four-drug regimen before susceptibility results are returned.

The liaison representative from CSTE suggested adding contact data or other LTBI data to the RVCT, rather than creating a separate system.

Ms. Cole said that this issue had been discussed, but some variables have to be addressed in terms of the incompleteness of the surveillance system and reporting of IGRA or TST results, which would be done at the local level. CDC is working on a voluntary LTBI reporting mechanism. LTBI is not legally reportable.

Dr. LoBue said that collecting LTBI data would not represent a revision of the RVCT form, but a revision of the entire surveillance system to collect information beyond the reporting of TB cases. Changing the system requires states' willingness to enter the new data and will require a longer conversation. Even changing the form is not a minor process and can take years. The cooperative agreement funding requires reporting of cases. Many issues would need to be addressed before that reporting was expanded beyond voluntary reporting.

There was discussion regarding the increasing intolerance of drugs as the population ages. This inability to take certain drugs increases programs' workloads and costs.

The liaison representative from The Union said that it would be relatively simple to change "visa status" on the RVCT from "visa status at entry" to "current visa status," which is a more useful variable. An individual could have come to the US a decade ago as a student or a tourist and since returned as a permanent resident or citizen. The fact that the individual first entered the country as a student or tourist has no bearing on current issues related to screening before the development of TB.

Advice Requested from ACET

Report of the Joint NTCA and RTMCCs White Paper on Medical Consultation
Alfred A. Lardizabal, MD
Executive Director
Rutgers Global Tuberculosis Institute

Dr. Alfred Lardizabal presented the findings and recommendations regarding TB medical consultation in the US from the NTCA and the RTMCCs. The White Paper is the result of a workgroup composed of medical directors from the five RTMCCs as well as representatives from NTCA from low-, medium-, and high-incidence localities.

The RTMCCs were established in 2005, primarily to provide education and training for TB programs and secondarily to provide medical consultation. The medical consultation aspect of the centers' work was highly variable in the beginning. Most of the consultations took the form of casual calls or one-off consultations via telephone. At that point, others were carrying out more in-depth, longitudinal consultations. There was variability in the manner in which consultation services were carried out.

Over the years, the RTMCCs developed a medical consultation database in which all of the calls were catalogued. Consultations were then mandated to be provided in written form to all callers, particularly the programs to keep them informed regarding the kinds of calls and problems that were occurring in communities and programs.

The consultation requests have increased in recent years not only in frequency, but also in complexity: 7,901 consultations were provided by the five centers from 2013-2016. During that time, MDR/Extensively Drug-Resistant (XDR) consultations increased by 25%; adverse reactions increased by 10%; 20% of calls require pediatric expertise; and other complicating co-morbidities have included diabetes, substance abuse, HIV infection, and social and cultural factors. Instances of increased morbidity have been observed in recent years from complicated TB cases; the mismanagement of simple TB cases; and delayed diagnosis, especially among pediatric TB cases, which result in permanent lifetime disability.

There is significant variability in terms of state and local program capacity and expertise for patient care. Some TB programs support doctor/nurse teams. Some TB programs do not provide direct clinical services, but rely on private physician services for TB diagnosis and treatment. These changes are taking place in the context of continuous loss of funding and expertise

The workgroup met to share experiences and to generate a vision for providing services more efficiently, especially in a low-incidence country in which resources are not likely to increase. The workgroup assessed capacity at state and big-city programs, finding the following:

- ❑ 20% of state or urban CDC-funded programs did not have any formal arrangement for physician consultation for TB cases
- ❑ 21% of the programs that did have local formal physician consultation services still depended on RTMCC services for supplementary expert support
- ❑ 25% of responding state programs indicated a lack of in-state pediatric expertise for consultation

There has been an erosion of TB expertise among state and local public health programs with decreasing TB incidence. Other TB experts have moved on and retired, and there is acute need for expert clinical services. All five RTMCCs have the capacity to answer single calls or short-term consultation requests; however, current consultation capacity within the RTMCCs varies. Most of the medical consultations services are staffed by volunteers with experience in the field of TB. At present, the RTMCC capacity cannot uniformly support the type of continuous, longitudinal medical consultation and nursing case management that complex cases require, and which some TB programs have increasingly requested.

The workgroup identified several key issues that need action:

1. Support the expansion of medical consultation to meet needs for longitudinal care. The mechanism of expansion is open for discussion and investigation, but this key priority is highlighted. The workgroup envisions a spectrum of services provided by the RTMCCs medical consultation:

   - ❑ Casual consultation
   - ❑ Longitudinal consultation:
     - ➢ Regular long-distance conference meetings, perhaps via telemedicine or telehealth, as requested by TB programs
     - ➢ Formal arrangements to provide long-distance, comprehensive case management support and technical assistance
     - ➢ Access to specialty in-patient services for complex TB care, which would require interstate patient transfer

2. Identify additional resources for RTMCCs to grow capacity for expanded and longitudinal consultation:

   - ❑ Expert physicians
   - ❑ Nurse consultants: the workgroup felt that the nursing component is essential in order to provide excellent medical consultation for TB

3. Ensure stable current and future funding for TB programs to maintain or build necessary TB Program capacity

4. Investigate ways to establish a Medicare public health exemption to assure that complex TB cases who otherwise cannot be treated in the community can access centers of excellence, even across state lines

Advice requested from ACET:

- ❑ Support and recommend that DTBE support the expansion of medical consultation to meet the needs for longitudinal care
- ❑ Recommend that CDC invest in infrastructure, resources, and planning to ensure that RTMCCs can grow capacity for expanded and longitudinal consultation
- ❑ Recommend that DTBE identify additional funds to support expanded medical consultation, but not at the expense of existing or future TB Program capacity
- ❑ Recommend that CDC work with HHS and other federal agencies, to establish a Medicare public health exemption to assure care for complex TB cases

ACET asked whether the medical insurance status of patients for whom consultation is sought has been determined, and how many of the costs might be recoverable. If possible, a system for billing for the consultation could be important, unless most of the patients do not have access to insurance. It would be helpful to have this information in order to estimate the total cost of the services included in the request.

Dr. Lardizabal answered that the workgroup did not formally examine the third-party insurance status of most of the patients requiring longitudinal care. Over the last few years, most of the cases are among undocumented populations. A few instances in Texas were among students from other countries who were in the US on student visas and who required hospitalization. Most of the cases requiring complex care probably do not have third-party medical coverage.

Dr. Michael Lauzardo noted that he would recuse himself from any voting that might occur on this issue, as he receives RTMCC funding from CDC. He pointed out that in Florida, the largest-morbidity state in the southeast region, and the southeast, more than half of patients have outside funding. While many patients are undocumented and unfunded, in his experience, a large percentage of the hospitalized patients have another source of funding.

Dr. Lardizabal said that the issue should be investigated and utilized, if there are funding sources. The RTMCCs have become accustomed to the "unpaid for model." Regarding cost estimates, the process has not reached the point of consideration of a new system and the level of resources needed to support it. He hoped that the White Paper would serve as the beginning of an ongoing discussion of how to improve on the RTMCC services.

The increasing emphasis on TB infection could generate phone calls from sectors that are not accustomed to interpreting results, different regimens, and other issues. Dr. Lardizabal agreed that RTMCCs address a spectrum of questions related to TB care, including infection as well as disease. LTBI questions are a majority of their calls. The White Paper highlights the recent increase in complicated issues in the consultations and the need to handle the consultations in a better way. Regarding TB infection, RTMCCs engage communities and provide them with tools, working in the training and education arenas.

If there is a shift in overall program focus toward TB infection, RTMCCs feel that the best way to move the TB infection agenda forward is to help find ways for programs to enhance partnerships with community providers.

Dr. Flood thanked Dr. Lardizabal for the review. She said that not only should the resources for RTMCCs and other Centers of Excellence be protected, but also the investment should be grown. It is difficult for policymakers to understand why it is becoming more costly to care for TB cases when TB is declining little by little, and why it is important to attend to the reservoir, which has not been attended to. This time is critical to build out the message not just to support the RTMCCs, but to look to expansion. ACET can address how to build capacity for resources such as the RTMCCs to do even more and to ensure that resources for health departments and other Centers of Excellence are not lost.

The liaison representative from The Union recalled that Ebola cases arrived in the US, specialized facilities were established in recognition of the global health threat. The global health threat of TB, particularly MDR-TB, is not sufficiently on the agenda so that policymakers understand that it needs to be addressed in a fashion similar to other threats. ACET observed that the facilities that were designed to care for Ebola patients also could care for TB patients.

Many of the beds that were created are not used for the purpose for which they were created. There was discussion regarding specific efforts to identify new potential beds for TB patients. The TB world often feels that it must work alone. There may be other disease or illness programs suffering from the same problems. The resources could be leveraged to approach Medicare or to identify other, innovative, alternative approaches.

Dr. Vernon supported the comment, adding that there is a variety of interesting and inventive ways to address some of the identified challenges. More data and investigation are needed regarding what the exact needs are. For instance, it is not clear what costs are associated with services that patients are not receiving, and it is not clear that devoting more funding to the RTMCCs would address this problem, or whether efforts should be focused on particular RTMCCs. If the goal is to create an infrastructure that can consult in places other than the location where the facility is located, it may be efficient to build the infrastructure in a manner that can reach anywhere in the US. The idea to investigate the specialized units created for Ebola is strong, and there are other opportunities to reach out. The most compelling argument is saving money, or addressing serious unmet needs that are costly to the country, such as long-term disability and death or care that is provided at a cost that could be spared. It would be helpful to have good examples of circumstances in which long-distance consultation is working well and efficiently. Several states are using this approach, but it is not clear how cost-effective, efficient, or helpful in the long term the approach has been.

Dr. Lardizabal said that the panel has not studied the cost-effectiveness of long-distance consultations or telemedicine examples. The ongoing theme of this work is, "What are the resources needed to improve our efficiencies and outreach?" The next step is to gather data and to base decisions on the data. The work thus far is the beginning of a longer discussion.

Ms. Cole said that these conversations are linked to access to care. She asked whether the calls to the RTMCCs reflect issues with patients receiving the care that they need, versus clinicians being unsure about protocols. Is the problem access or lack of knowledge on the providers' part?

Dr. Lardizabal said that both situations have been experienced. There have been instances in which access to expert care was needed. For example, XDR cases were discovered in rural areas, and local programs have no resources for the necessary care. Patients were transported for initiation of XDR treatment. Other instances include a lack of expertise in come localities regarding different types of TB, or concerns associated with nursing care for pediatric cases.

Ms. Cole asked if the individuals most frequently calling for consultation are individual practitioners or local TB control programs.

Dr. Lardizabal replied that RTMCCs receive calls from both groups, which are the target clients of the RTMCCs. In his region, equal percentages of calls come from those providing direct care and those engaged in program management of TB.

In response to a question from Ms. Cole, Dr. LoBue confirmed that no additional funds are expected at this point.

Ms. Cole asked about additional action that can be taken to accomplish the goals of ensuring that consultation is available when it is needed, given that additional funds are not anticipated.

She reviewed ACET's suggestions to explore billable services and evaluating the cost-effectiveness and reliability of long-distance consultation.

Dr. Lardizabal said that the workgroup plans to create an implementation plan for an innovative infrastructure for providing TB consultation. This next step may shed light on the resources needed to build the infrastructure to meet the needs.

Ms. Cole said that when more data are gathered, ACET could put forth a motion on this topic. She noted support among ACET for sufficient funding for RTMCCs and the role that they play. ACET will approach the new HHS Secretary regarding sufficient funding to support the public health infrastructure as well as to move toward TB elimination.

The liaison representative from NTCA asked for clarification regarding the data and supporting information that would be most helpful.

ACET said that the consultations are medical care services. The issue is complex due to a number of issues, such as whether the services should be covered under healthcare reform and whether they already could be covered. Further, it is not clear how much of the services are attributable to patients who do not have access to health insurance, because they did not get it or because they do not qualify for it. Data can be used to support an assertion to Congress that this group of people with this disease should be an exception under the ACA because the disease is communicable. Cost-related data as well as information regarding who could pay for which elements of the effort will be essential in advocating for the substantial needed resources.

Dr. Lardizabal said that information could be gathered to provide better understanding of who among RTMCC clients have the capacity to pay for services. Information also could be gathered regarding the cost-effectiveness of providing long-distance care.

ACET added that the issue of nurse case management, including how much it costs and how effective it is, is even more important. This issue is "where the rubber meets the road."

Ms. Cole said that in their consideration, they should separate the issue of funding and support of RTMCCs from the issue of access to care. She suggested that the next agenda-setting meeting for ACET could define what ACET needs in this area.

ACET agreed with the focus on RTMCCs, but added that ACET could recommend to HHS that HRSA health centers should be covering costs for undocumented people.

The liaison representative from NTCA made a strong request that ACET prioritize advice items 1, 2, and 3. While working with HHS to expand Medicare and other issues is strategically important, the first three items represent immediate needs. They are services that state and local TB programs have to have access to. The issue of access to care can be visited with the new HHS Secretary.

Dr. LoBue added that if resources are requested, it should be made clear how much money is requested, what will be done with it, and what the expected outcomes are. These issues should be part of any analysis. The first three items refer to additional resources, but there are no additional resources available. He was not sure about expectations for progress.

Dr. Lardizabal said that RTMCCs could consider different resource allocations. There are prescribed percentages for their budget, in areas such as training, products, and consultation services. One way to work within the finite current budget resource is for individual RTMCCS to have flexibility to shift resources where they might be used.

Ms. Cole asked whether issues related to the rules for allocations and flexibility may begin with discussions with DTBE before coming to ACET. Dr. Lardizabal said that the workgroup can discuss future iterations of the scope of RTMCCs' work with DTBE.

Dr. LoBue said that these discussions can take place, but because the announcement is competitive, there are limitations to what can be discussed. DTBE is open to discussing reconsidering allocations or adding flexibility within existing budgets. Ms. Cole suggested that the workgroup research the additional items that were mentioned by ACET and engage in dialogue with Dr. LoBue regarding additional flexibility to maximize the existing funding.

Dr. Flood distinguished between billing for direct patient care, which most RTMCCs do not provide, versus billing for a consultative service. Ms. Cole said that consultation is a billable service for some payers and not for others.

It was requested that Dr. Lardizabal and the workgroup address the issues raised by ACET, and provide an update at the next ACET meeting.

<u>Review of Advice Requested from ACET</u>

Ms. Cole reviewed items from the last ACET meeting.

I. Advice/ Discussion by ACET
   A. Development of a standard risk assessment potentially linked to Electronic Medical Record (EMR)
      - A group is working on standard data elements for EMRs, and California has created a standard risk assessment. ACET will monitor these issues.
      - A group at NCHHSTP is in discussions with some of the electronic health record (EHR) vendors to influence including these elements to assure adequate decision support tools. The standard risk assessment developed by California can be potentially incorporated into clinical decision support tools, but this process will not be fast.

Ms. Cole asked about potential objections to sharing the California risk assessment tool with the EHR vendors. Dr. Flood clarified that the tool is available on the program's website and can be shared by anyone.

   B. Communication Plan for USPSTF- Grade B LTBI
      - ❑ This issue was discussed in the update at this ACET meeting.

II. Motions from April 26, 2016 meeting

ACET recommended that CDC embrace the use of 3HP in congregate settings and develop a plan to reach out and communicate to various groups that could implement the regimen.

CDC is engaged in this work. ACET discussed during the meeting issues related to INH and RIF. There also was discussion regarding language in the LTBI guideline pertaining to 3HP. That messaging is also important.

ACET recommended to CDC to recommend that HHS make more resources available in order to accomplish the goal of TB elimination.

Ms. Cole reminded ACET that this topic will be included to the summary report to the Secretary, as well as details regarding barriers to TB elimination.

Potential Agenda Topics for the December 2016 ACET Meeting

Ms. Cole noted that the next ACET meeting would be held in person on December 12-13, 2016 in Atlanta, Georgia. She noted the following potential agenda items for the meeting, noting that the agenda-setting committee would meet in the interim to set the agenda:

- ❑ Document presented for review from the Essential Components Workgroup
- ❑ Report from the Drug Supply Workgroup
- ❑ Presentation from the Congregate Settings Workgroup

The liaison representative from NTCA suggested an agenda item to follow up on the requested additional information for the RTMCC White Paper proposal. Dr. Lardizabal added that the next set of data could be presented.

It was suggested that ACET discuss state TB programs' response to the new guidelines for TB treatment, specifically the change in recommendations for directly observed therapy (DOT) as part of active TB therapy. Many state TB programs have called his RTMCC expressing concerns about their ability to comply with the new guidelines. Hearing from these programs formally will help inform how to address the concerns. The session could include general impressions and feedback regarding the new guidelines. As programs become familiar with the new guidelines and their implications, the information will be worth presentation to ACET.

Ms. Cole suggested that a NTCA survey might be helpful. The guidelines indicate that the approaches to the guidelines will vary by jurisdiction and available resources, and the guidelines are different for different patients. A survey of localities might be most useful. If a locality has not reported an issue to the state health department, the issue would not be captured by a state survey. Alternatively, states could be asked to survey their local jurisdictions and share that information with NTCA. It would be useful to collect those responses and feedback prior to the next ACET meeting.

The liaison representative from NTCA said that NTCA could approach the collection of information. There are other lines of communication within NTCA other than a survey could be used to assess the situation. Ms. Wagner said that throughout the fall, regional meetings of TB controllers will take place. These meetings will be good opportunities to gather this information.

Public Comment

Ms. Cole opened the floor for public comment at 3:28 p.m. Hearing none, the meeting proceeded.

Roll Call / Meeting Adjourned

Dr. Dean conducted a roll call of ACET voting and *ex officio* members and liaison representatives. A quorum was present.

A motion was properly placed on the floor by Dr. Robert Horsburgh and seconded by Dr. Jeffrey Starke to adjourn the August 24, 2016 ACET meeting. **The motion carried unanimously with no abstentions.**

The meeting stood adjourned at 3:31 p.m.

Certification

I hereby certify that, to the best of my knowledge and ability, the foregoing minutes of the August 24, 2016 meeting of the Advisory Council for the Elimination of Tuberculosis, CDC, are accurate and complete.

_____ _____

Date

Barbara Cole, RN, MSN, PHN
Chair, Advisory Council for the Elimination of Tuberculosis, CDC

Attachment 1: Participant Directory

ACET Members Present

Ms. Barbara Cole (Chair)
Dr. Ana Alvarez
Dr. Lisa Armitige
Ms. Jennifer Cochran
Dr. Eric Houpt
Dr. C. Robert Horsburgh
Dr. Michael Lauzardo
Dr. Jeffrey Starke
Dr. James Sunstrum
Dr. David Warshauer

ACET *Ex Officio* Members Present

Michael Bartholomew, MD, FAAP
Indian Health Service

Sarah Bur, RN, MPH
Federal Bureau of Prisons

Karen L. Elkins, Ph.D.
Food and Drug Administration

Diana Elson, DrPH, MA, CDR USPHS
US Immigration and Customs Enforcement

J. Nadine Gracia, MD, MSCE
Office of Minority Health, US Department of Health and Human Services

Mamodikoe Makhene, MD, MPH
National Institute of Allergy and Infectious Diseases
National Institutes of Health

Marshala Lee (for Rupali Doshi, MD, MS)
HIV/AIDS Bureau, Health Resources and Services Administration

Stephen Martin
National Institute for Occupational Safety and Health
Centers for Disease Control and Prevention

Kevin Taylor, MD, MTM&H
US Department of Defense

Marla Clifton, RN, MSN, CIC (for Gary Roselle, MD)
US Department of Veterans Affairs

Lorraine Navarrete (for Jose Luis Velasco)
US-México Border Health Commission

ACET *Ex Officio* Members Absent

Amy Bloom, MD
US Agency for International Development

Anthony Campbell, RPH, DO
Substance Abuse and Mental Health Services Administration

Edward Chin
US Marshals Service

Kali Crosby, MSN, RN, CIC
Agency for Healthcare Research and Quality

Caroline Freeman
US Department of Labor, Occupational Safety and Health Administration

ACET Liaison Representatives Present

Shama Desai Ahuja, PhD, MPH
Council of State and Territorial Epidemiologists

Peter Davidson, MD
National TB Controllers Association

Kenyon Farrow
Treatment Action Group

Robert E. Morris, M.D., CCHP-P
National Commission on Correctional Health

Robert Benjamin, MD, MPH
National Association of County and City Health Officials

Susan Ray, MD
Infectious Disease Society of America

Randal Reves, MD
International Union Against TB and Lung Disease

ACET Liaison Members Absent

David Bryden
RESULTS

Charles Daley
American Thoracic Society

Fran Du Melle, MS
American Thoracic Society

Mayleen Ekiek, MD
Pacific Island Health Officers Association

Eddie Hedrick, BS, MT (ASCP), CIC
Association for Professionals in Infection Control and Epidemiology

Ilse Levin, DO, MPH & TM
American Medical Association

John Lozier
National Coalition for the Homeless

Howard Njoo, MD, MHSc, FRCPC
Public Health Agency of Canada

Amee Patrawalla, MD, MPH, FCCP
American College of Chest Physicians

Jennifer Rakeman, PhD
Association of Public Health Laboratories

Gudelia Rangel, PhD
México Section, US-México Border Health Commission

Susan Rappaport, MPH
American Lung Association

Michael Tapper, MD
Society for Healthcare Epidemiology of America

Lornel Tompkins, MD
National Medical Association

(To Be Determine)
Association of State and Territorial Health Officials

ACET Designated Federal Officer

Hazel Dean, ScD, MPH
Deputy Director, NCHHSTP

CDC Representatives

Dr. Lori Armstrong
Dr. Stuart Berman
Dr. Terence Chorba
Ms. Ann Cronin
Dr. Tracy Dalton
Dr. Patty Dietz
Dr. Brian Edlin
Ms. La'Toya Lane
Dr. Philip LoBue
Mr. Elvin J. Magee
Ms. Lilia Manangan
Ms. Suzanne Marks
Dr. Jonathan Mermin
Dr. Beverly Metchock
Mr. Roque Miramontes
Dr. Sapna Morris
Dr. Tom Navin
Ms. Kristine Schmitt
Ms. Margie Scott-Cseh
Ms. Divia Forbes
Dr. Christine Ho
Mr. Tochukwu Igbo
Ms. Amera Khan
Dr. Awal Khan
Ms. Kathryn Koski
Dr. Adam Langer
Ms. Maria Fraire Sessions
Mr. Sam Shillcutt
Dr. Ben Silk
Mr. Brian Sizemore
Dr. Angela Starks
Ms. Clarisse Tsang
Dr. Andrew Vernon
Dr. Wanda Walton
Dr. Carla Winston
Ms. Rachel Wingard
Dr. Jonathan Wortham

Members of the Public

Mr. Jeff Chrismon
Northrop Grumman/DTBE

Ms. Kendra Cox, MA
Cambridge Communications

Dr. Jenny Flood
California Department of Health

Ms. Donna Wegener
National TB Controllers Association

Attachment 2: Glossary of Acronyms

Acronym	Expansion
3HP	Rifapentine Plus Isoniazid
ACA	(Patient Protection and) Affordable Care Act
ACD	Advisory Committee to the Director
ACET	Advisory Council for the Elimination of Tuberculosis
ADAP	AIDS Drug Assistance Program
AHRQ	Agency for Healthcare Research and Quality
AMD	Advanced Molecular Detection
APC	Annual Percent Change
AR	Antimicrobial Resistance
ASTHO	Association of State and Territorial Health Officials
ATS	American Thoracic Society
BOP	(Federal) Bureau of Prisons
BPHC	Bureau of Primary Health Care
CARB	Combating Antibiotic-Resistant Bacteria
CBO	Community-Based Organization
CDC	Centers for Disease Control and Prevention
CGH	Center for Global Health
CID	*Clinical Infectious Diseases*
CMO	Committee Management Office
CPM	Capreomycin
CR	Continuing Resolution
CSTE	Council of State and Territorial Epidemiologists
DASH	Division of Adolescent and School Health
DC	District of Columbia
DFO	Designated Federal Officer
DOT	Directly-Observed Therapy
DST	Drug Susceptibility Testing
DTBE	Division of Tuberculosis Elimination
EHR	Electronic Health Record
EMR	Electronic Medical Record
EOC	Emergency Operations Center
FDA	(United States) Food and Drug Administration
FY	Fiscal Year
GDF	Global Drug Facility
GHOST	Global Hepatitis Outbreak and Surveillance Technology
GRADE	Grading of Recommendations Assessment, Development and Evaluation
HHS	(United States) Department of Health and Human Services
HIV	Human Immunodeficiency Virus
HMO	Health Maintenance Organization
HRSA	Health Resources and Services Administration
IDSA	Infectious Diseases Society of America
IGRA	Interferon-Gamma Release Assay
INH	Isoniazid

Acronym	Expansion
JAMA	*Journal of the American Medical Association*
LTBI	Latent Tuberculosis Infection
MAHP	Massachusetts Association of Health Plans
MASO	Management Analysis and Services Office
MDDR	Molecular Detection of Drug Resistance (Service)
MDHHS	Michigan Department of Health and Human Services
MDR	Multidrug Resistant
MDR-TB	Multidrug-Resistant Tuberculosis
MMWR	*Morbidity and Mortality Weekly Report*
MPEP	Model Performance Evaluation Program
Mtb	*Mycobacterium tuberculosis*
NAAT	Nucleic Acid Amplification Test
NACCHO	National Association of City and County Health Officials
NASTAD	National Alliance of State and Territorial AIDS Directors
NBGH	National Business Group on Health
NCCHC	National Commission on Correctional Health Care
NCEZID	National Center for Emerging and Zoonotic Infectious Diseases
NCHCA	National Commission for Health Certifying Agencies
NCHHSTP	National Center for HIV/AIDS, Viral Hepatitis, STD and TB Prevention
NCIPC	National Center for Injury Prevention and Control
NTCA	National Tuberculosis Controllers Association
NTSS	National Tuberculosis Surveillance System
OD	Office of the Director
PI	Principal Investigator
PrEP	Pre-Exposure Prophylaxis
PSQ	Pyrosequencing
RFB	Rifabutin
RIF	Rifampin
RPT	Rifapentine
RTMCC	Regional Training and Medical Consultation Center
RVCT	Report of Verified Case of Tuberculosis
SGE	Special Government Employee
SME	Subject Matter Expert
STD	Sexually Transmitted Disease
STEMS	Surveillance for Tuberculosis Elimination Management System
STLT	State, Tribal, Local and Territorial
TAG	Treatment Action Group
TB	Tuberculosis
TBESC	Tuberculosis Epidemiologic Studies Consortium
TBLISS	Tuberculosis Latent Infection Surveillance System
TNF	Tumor Necrosis Factor
TST	Tuberculin Skin Test
UCLA	University of California, Los Angeles
UCSF	University of California, San Francisco
UK	United Kingdom
US	United States

Acronym	Expansion
USAID	United States Agency for International Development
USPSTF	United States Preventive Services Task Force
WHO	World Health Organization
XDR	Extensively Drug-Resistant (Tuberculosis)
YRBS	Youth Risk Behavior Survey